School of Psychological Sciences and Health

Can Video Interaction Guidance Improve Children's Participation in Group Work Lessons?

by

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Declaration of Authenticity and Author's Rights

This thesis is the result of the author's original research. It has been composed by the author and has not been previously submitted for examination which has led to the award of a degree.

Signed:

Date:

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List Of Acronyms

ADHD	Attention Deficit Hyperactivity Disorder
ASD	Autistic Spectrum Disorder
ASN	Additional Support Needs
CfE	Curriculum for Excellence
CP	Child Protection
EP	Educational Psychologist
HI	Hearing Impairment
HMIe	Her Majesty's Inspectors of Education
LD	Learning Difficulty
NG	Nurture Group
PEM	Percentage Data Points Exceeding the Mean
PND	Post Natal Depression
RCT	Randomised Control Trial
RDO	Research and Development Officer
SEBN	Social, Emotional and Behavioural Needs
S-TOP	SPRinG Teaching Observation Protocol
TME	Target Monitoring Evaluation
VHT-	Video Home Training
VIG	Video Interaction Guidance
VIPP	Video-feedback Intervention to promote Positive Parenting
VIPP-R	Video-feedback Intervention to promote Positive Parenting with a Representational focus

ABSTRACT

Video Interaction Guidance (VIG) is an intervention that aims to improve communication and relationships. It is a video-based approach that involves a trained VIG professional filming, editing and reviewing film clips with a client, of their interactions with a significant other person.

This thesis explores whether VIG can be used to improve pupils' participation in group work lessons, following a novel application of VIG in natural classroom settings. Study 1 aimed to determine whether there were improvements in video samples of observable classroom behaviour following VIG and to investigate participant experiences of the intervention. Participant evaluation of VIG, via focus groups, interviews and questionnaires, was positive. However, while Percentage of Data Points Exceeding the Mean (PEM) calculations of video data using a multiple baseline across participant small-N experimental design showed some degree of post-intervention changes, these were not statistically significant ($p>.05$) as indicated by Dugard and Todman's bootstrapped exact probability test (2011).

Study 2 investigated whether the improvements reported by participants from Study 1 could be objectively observed by experienced professionals. A sample of 4 educational psychologists blind rated a random sample of pre- and post-intervention videos and identified post-intervention videos as evidencing significantly more effective examples of group work ($p=.003$). The criteria used in their clinical decision-making were used to inform a new video coding schedule.

Re-coded observations from the sample of videos used in Study 1 were then analysed. Target pupils were found to be significantly more attentive and attuned to their peers after VIG ($p=.05$). While PEM scores of video data again indicated other post-intervention improvements, these were not statistically significant ($p>.05$).

This study is unique in reporting objective, observable pupil behaviour change over the relatively short period of VIG intervention, with high levels of client

satisfaction and acceptability. Methodological limitations and recommendations for future research are discussed together with key implications for practicing EPs.

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PART 1

CHAPTER 1 LITERATURE REVIEW

1.1 OVERVIEW

This literature review is composed of two key sections. Section 1.3 begins by considering the use of group work in schools, with reference to pertinent curriculum reforms that have been undertaken over the past decade. Cooperative learning (Johnson & Johnson, 2009) is critically appraised as a candidate model of group work. This approach is widely used by the local authority in which this research project was carried out. Next, research exploring the challenges of delivering effective group work is outlined. This is followed by the importance of the nature of classroom dialogue during group work and the impact on learning. Finally, the need for further training to support skills development, to enable pupils to participate effectively in group work will be argued.

Section 1.4 provides a review of VIG. The wider domain of video based interventions is first explored to provide a contextual understanding for the development of VIG. Background information relating to the development of VIG, along with a comprehensive description, with particular attention paid to what makes it unique in comparison into other video interventions is then provided. A systematic review of the evidence base for VIG is then presented. This section concludes with a strong argument for the need to develop a more robust evidence base for the use of VIG, particularly in schools settings with pupil clients.

1.2 LITERATURE REVIEW PROCEDURE

For Section 1.3 an extensive database search was undertaken to gain access to all available published sources using Psych Info, Medline, ERIC and Web of Knowledge based on pre-specified criteria. Due to the volume of published material on this topic, articles were restricted to those containing primary data, published in peer reviewed journals, in English, to ensure that the most robust and relevant research was considered. Keywords used in the search included ‘group work’ OR

'cooperative learning' OR 'group work dialogue' all combined with 'school OR education' to narrow down research to relevant contexts, for example to exclude places of work. Finally this search was combined with the terms 'challenge' OR 'problem' OR 'difficult*' in order to identify any issues in implementing effective group work.

To review the evidence base for Section 1.4, again an extensive database search was undertaken using Psych Info, Medline, ERIC and Web of Knowledge; however due to the limited number of publications returned all date restrictions were removed. Abstracts and titles were searched using keywords which included the terms 'video intervention', 'video interaction guidance', 'video home training', 'video therapy', 'video modelling' (VM), 'video self-modelling' (VSM) and 'video feedforward'. Studies were filtered to include only those which described work in contexts relevant to educational psychology, that is with children and adults in school or family contexts. They were further restricted to include only those which focussed on outcomes for participants rather than descriptive, theoretical or process based accounts of an intervention.

When considering the wider range of video interventions, only papers published in peer reviewed journals using primary data were considered. For the systematic review of VIG, due to the relatively low number of publications, it was considered most useful to include all studies that could be located involving VIG interventions. This included unpublished doctoral theses identified by searching the Electronic Thesis Online Service.

1.3 GROUP WORK IN SCHOOLS

1.31 Use of group work in schools

Wright, Brinkley and Clayton (2010) argue that the current education systems within the UK are unsuccessful at responding to contemporary citizenship challenges by failing to equip pupils with an appropriate range of employability skills. They suggest they are over-focussed on qualifications, at the expense of the development of essential personal skills. This concern is replicated in higher education as

demonstrated by two recent UK graduate employer surveys. The surveys reported that communication skills and the ability to work as part of a group were identified as key skill shortages (AGR, 2013, Snowdon, 2011). Indeed Cable and Willets (2012) presented a report with recommendations to businesses, universities and government to work together to ensure the skills of the UK's graduates meet the needs of society. They describe the requirement for a range of softer skills such as communication and interpersonal relationships, in addition to a good knowledge base.

To address these perceived needs there have been significant shifts within education on a worldwide scale (Galton & Hargreaves, 2009; Koh, Wang, Tan & Liu, 2009). Educational establishments are in the process of trying to meet the needs of twenty-first century pupils by reviewing not only *what* they teach but *how* they teach children. This is not at the expense of reduced knowledge or curriculum content; rather a focus on pedagogy and the impact different models of teaching may have on the holistic development of pupils. Recommendations for group work approaches have been integral to widespread international educational reform (Blatchford & Kutnick, 2003; Webb & Mastergeorge, 2003). Galton and Hargreaves (2009, p. 1) describe the directive, that pupils should work in groups to solve recognised problems of "globalisation in the workplace" a "universal panacea among policy makers". Indeed individualistic methods of learning have been widely challenged by social scientists who have highlighted the key roles of peer interaction and relationships in learning (Johnson & Johnson, 2009). However Blatchford and Kutnick (2003) caution that recommendations are often made despite absence of evidence based practice for effective group work resulting in poor outcomes for pupils.

In Scotland, the development of a Curriculum for Excellence (CfE) (Scottish Executive, 2004) which emphasises the importance of the content of the curriculum as well as the pedagogy used to deliver it, mirrors the international changes previously discussed. The CfE articulates the experiences and outcomes it seeks to promote for all pupils, which includes a holistic range of skills. It recognises that achievement of personal or social goals, as well as academic goals, must be

encouraged in order to provide pupils with the best chance of future success. Furthermore for each 'experience and outcome' section of the framework there is also an accompanying 'principles and practice' paper. These papers highlight 'collaborative working', 'active learning' and 'peer learning' as a set of effective teaching and learning approaches, which demonstrates an explicit attempt to integrate guidance on both the content and delivery of the curriculum.

There is a wide range of known group work methodologies that adhere to effective teaching and learning approaches highlighted in the CfE. Group work can perhaps be most easily defined in comparison to common alternative classroom groupings and interaction levels, that is, whole class teaching and individual learning (Alexander, 2000). Blatchford, Kutnick, Baines and Galton, (2003: p. 155) suggest a defining characteristic of group work is that the "balance of ownership and control of the work shifts towards pupils themselves". However, a range of factors including group size, types of interaction and learning task, when strategically planned can have different impacts on learning outcomes (Blatchford et al., 2003).

Group work in schools is not a new approach. Indeed by the 1980's, research had established group work as a legitimate learning methodology (Harwood, 1995). However, it is acknowledged that merely seating pupils together in groups does not necessarily ensure that they work together and engage in effective learning (Galton & Hargreaves, 2009). This crucial point is perhaps overlooked in research, as well as in practice. Hammar Chiriac & Granström (2012) suggest that much of the research literature on group work often fails to make a distinction between pupils working individually whilst seated in a group and actually working together as a group. In practice, they contend, teachers often fail to grasp the benefits of a group work approach and lack understanding in how to effectively use group work within their classes.

In the UK Baines, Blatchford and Kutnick (2003) suggest grouping practice varies as a function of age of pupils with little understanding of the impact on learning. In a classroom mapping exercise they completed with 187 primary teachers

and 248 secondary teachers they found that the older pupils were mostly taught in ability based sets and more likely to be sitting in formal rows or pairs. Primary aged pupils were all placed in mixed ability classes, although they may work in ability groups for particular tasks, especially in core subjects. Peer interaction work was reportedly rare. Despite pupils mainly sitting in groups, they predominantly worked alone. Secondary pupils were more likely to experience interactive work. Blatchford, Baines, Rubie-Davies, Bassett et al. (2006) also suggest the majority of class time in primary classes however is spent with pupils passively listening to the teacher in whole class sessions or completing work on an individual basis. Baines, Blatchford and Kutnick (2003), hypothesise that the lack of group work at the primary stage is due to teacher concern that pupils are only beginning to engage in these forms of interaction and therefore may not be able to participate without considerable adult support, which may be beyond the resources of a typical classroom.

While frequency of use may be of concern to educators, perhaps more pertinent is the claim by Galton and Hargreaves (1999) that where group work is used it is often poorly taught. This claim is echoed more recently by Blatchford et al. (2006) who argue that in the UK seldom is group work is sustained or of good quality. Furthermore the majority of teachers have no training of how to deliver effective group work and pupils have no teaching in how to participate effectively in groups.

Key group work research has subsequently focussed on identifying conditions which are more conducive to successful learning outcomes (Harwood, 1995). Consequently, different models of group work, which profess to ensure effective group work interactions, have been developed. Examples of models include cooperative learning, collaborative learning, peer assisted learning and peer tutoring (Johnson & Johnson, 1994; Gillies, 2003; Harwood , 1995; McDonnell, Thurston & Allen, 2003; Blatchford & Kutnick, 2003; Topping, 1987).

In summary, while group work in not a new concept in education, promotion of group work approaches have increased in line with international curriculum reform. Concerns have been expressed that group work is underused, possibly due to lack of teacher understanding, confidence and skills in implementing the approach. Researchers have begun to focus on developing models of group work to increase the effectiveness of this method of teaching.

1.32 Cooperative Learning

Authority X, where the research component of this thesis was carried out, adopted cooperative learning as a key teaching method. Cooperative learning refers to a variety of teaching methods that require pupils to work together in small groups and supports social and cognitive development through learning from, and with, each other (Johnson & Johnson 1989, 1992). Johnson and Johnson (2009) claim cooperative learning has been adopted worldwide and furthermore is used across all curricular areas and in all education settings from nursery to further and higher education.

Cooperative learning is a pedagogy supported by an extensive body of research, which demonstrates both academic, as well as a wide range of social benefits, including increased levels of motivation, social skills and pupil engagement (Slavin, 1996; Johnson & Johnson, 1994; Gillies, 2003). There is a continuum of cooperative learning models, from very specific and prescriptive, to those that are conceptual and provide a framework which can be adapted for any context. Jolliffe (2007) provides an overview of seven cooperative learning models. The specific model adopted by Authority X was developed by Johnson and Johnson in the 1960s (Johnson & Johnson 1992, 1994) and is arguably a highly prescriptive model. Johnson and Johnson (1992) structure their approach to include five key lesson elements: positive interdependence, individual accountability, promotive interaction, appropriate social skills and finally group processing. "The five basic elements are… a discipline that must be rigorously applied to produce the conditions for effective cooperative action" (Johnson, Johnson & Holubec, 1994, p.11). Authority X supported this particular model due to the extensive research base underpinning it.

Key evidence for the effectiveness of cooperative learning will now be reviewed followed by consideration of implementation factors. The largest meta-analysis to date, which included 164 studies, was conducted by Johnson, Johnson and Stanne (2000) and reviewed eight different cooperative learning models over a 20 year period. They focused specifically on the impact of cooperative learning on student attainment and excluded over 700 studies where only social or other types of outcomes were measured. In total, they found 194 independent effect sizes representing academic achievement. When cooperative learning was compared to individualistic learning there was a standardised effect size (Cohen's *d*) of 1.03 and compared to competitive groups, an effect size of 0.82. They contend their own model to be the most effective cooperative learning method. Johnson et al. (2000) further argue that the findings from the meta-analysis are highly reliable and could be generalised across contexts as the research had been undertaken by different researchers, internationally, across a wide time span, with a wide age range of pupils. These findings mirror that of their earlier meta-analysis in 1989 (Johnson & Johnson, 1989). They are also supported by an independent researcher, Slavin (1990), who conducted a smaller meta-analysis of 60 studies and reported similar benefits of cooperative learning. He noted that different cooperative learning methods varied widely in achievement effects. His review states that "The methods that emphasize group goals and individual accountability…are consistently more effective for increasing student achievement than other forms of cooperative learning" (Slavin, 1990: p. 18). These two elements are integral parts of the model promoted by Johnson and Johnson.

In a further meta-analysis Roseth, Johnson and Johnson (2008) explored a wider outcome focus where not only academic benefits, but also peer relationships were investigated. Clear criteria were used to select 148 studies involving over 17,000 pupils from 11 different countries. Compared to a competitive or individualistic learning environment, the analysis reported more positive peer relationships (effect sizes 0.48 and 0.42) from a cooperative learning environment.

The substantial published body of research on cooperative learning forms a strong argument for the benefits of this approach in terms of both academic and social benefits for pupils. It should be acknowledged, however, that the majority of research has been led by developers and proponents of the approach and could therefore be subject to claims of potential researcher bias. Johnson et al. (2000) acknowledge this criticism themselves.

Despite the strength of the research base, as with any teaching approach or intervention, a number of factors will be important to implement a cooperative learning approach with fidelity to the original model. In addition to the prescriptive lesson and classroom structure, Johnson and Johnson (2009) offer further guidance on training for teachers. They recognise the key role of teachers in the delivery of effective lessons and are strong advocates for training to support teachers to deliver their model effectively (Johnson & Johnson, 1992; Johnson et al., 2000). In recognition of the importance of staff training, Authority X developed an extensive programme of professional development opportunities for teachers through training academies. Training involved intensive three-day courses, followed by recall days and further in-school support delivered by six full time development officers. There was a commitment made to ensure all teachers, including school managers, were trained. Due to the wide range of development opportunities that were available, many pupils in Authority X are now afforded the opportunity to regularly take part in cooperative learning lessons in a range of curricular areas.

Nevertheless, even where training is provided, Johnson et al. (2000) offer a warning to education policy makers and managers. They state: "Knowing that cooperative learning can have powerful effects when properly implemented does not mean, however, that all operationalizations of cooperative learning will be effective or equally effective in maximising achievement" (Johnson et al., 2000, p.4). This concern is further echoed by Martin (2007) who states: "Teachers were routinely found to adapt and modify their approach in the classroom, often omitting key elements of the model that are crucial to its overall success" (Johnson et al., 2000, p. 25). This can only further support calls for long term training, support, coaching and

monitoring for teachers when delivering cooperative learning or indeed any new teaching methodology.

This assertion is fully supported by Gillies and Boyle (2010) who conducted a study exploring the experiences of teachers who received cooperative learning training and subsequently implemented the approach over two school terms. Ten teachers from five Australian primary schools participated in the study. All teachers reported observing benefits in their pupils' learning but experienced a range of difficulties implementing the approach. Issues with pupils during lessons included being off task, socialising with their friends and poor time management. The teachers felt that pupils required to be taught group work skills to address the concerns they raised and enable them to make effective use of cooperative learning lessons. These findings were supported in earlier large-scale studies with primary and secondary school populations (Gillies, 2003, 2004).

Gillies findings are supported by other researchers who assert that many children, particularly those with additional support needs, may struggle to work effectively in cooperative group work settings (Koh et. al, 2009; Jenkins, Antil, Wayne & Vadasy, 2003; McMaster & Fuchs, 2002). Johnson and Johnson (2009: p. 369) agree that "unskilled group members cannot cooperate effectively" and that in order to engage pupils in cooperative learning lessons they should be explicitly taught interpersonal and small group skills. Indeed Blatchford et al. (2006) and Mercer, Dawes, Wegerif, and Sams (2006) highlight three key potential challenges to pupils' participation in group work generally. Firstly, that pupils can remain on-task; secondly, that all group members are able to sustain engagement and positive relationships with each other; and thirdly that when pupils are working together they are able to engage in the types of high quality dialogue known to promote learning. These challenges in the use of group work methodology are highlighted in a plethora of case and larger studies in all levels of education (Jarvenoja & Jorvela, 2009, Koh et al., 2009).

It is perhaps therefore unsurprising that the areas of challenge found in previous research were mirrored in an external evaluation of Authority X's Cooperative Learning Project (Seagraves, Clinton & Kenesson 2007). Seagraves et al (2007) found 'group processing' and 'promotive interactions', two of the five essential elements in the Johnson and Johnson model, were elements teachers found most challenging to implement. Group processing refers to pupils self-evaluating how well they are working together, for example reflecting on their group work skills including turn taking and resolving disagreements. Promotive interactions are concerned with pupils taking responsibility for the success of other learners in the group for example by offering explanations, encouragement and support. Pupil dialogue is central to the success of both of these elements, particularly the latter.

The evidence base for cooperative learning approaches, particularly the Johnson and Johnson model appears convincing. However it is clear a number of factors will underpin the effectiveness of this pedagogy. Support and training for both teachers and pupils have been highlighted as pre-requisites to successful implementation. Over and above participating in cooperative learning lessons pupils are therefore required to develop interpersonal and group work skills. Areas which pupils appear to find challenging are remaining on task, sustaining positive relationships and engaging in high quality dialogue.

1.33 Dialogue and Group Work

The quality of pupil dialogue has been highlighted as a particular challenge in the previous section and the review will now attempt to establish the link between the importance of pupil dialogue in group work and the impact on learning.

Zinicola (2009) investigated the use of group learning with two groups of four students, aged 11 to 14 in a science class over a nine week period. Although only using small numbers in case study design, a rich range of data was gathered which included pre and post curricular assessments, field notes, transcriptions of student dialogue, reflective journals and a focus group transcript. Zinicola (2009) reported that one of the key results was that quality, not quantity of dialogue most

furthered student learning. The students who spoke most showed least progress in their learning. Three types of talk emerged as being most influential to learning: connecting ideas, synonymous rephrasing and challenge with change. It is therefore thought that actively teaching key skills such as repeating, rephrasing, summarising and clarifying to pupils could aid peer instruction.

Webb, Franke, Chan, Freund et al. (2009) carried out an in-depth analysis from a small sample of American schools, exploring specifically the effect of the teachers' impact on pupil dialogue during collaborative group work. Four classrooms from three US schools were sampled. The classes were a convenience sample, from a group of teachers who had undertaken a training programme in the prior year related to developing pupils' mathematical reasoning. Teachers had been given guidance on how to support pupil dialogue to promote high level thinking. Video and audio data was collected from each class over a period of a week during collaborative group work time. From each class, a random sample of groups was selected and their dialogue was transcribed and coded. The authors provided a rationale for their focus, high level pupil explanations, as they believe this type of dialogue is most pertinent to learning and subsequently higher levels of pupil attainment based on findings from an earlier literature review (Webb & Mastergeorge, 2003).

Results confirmed the link between explanations and learning, that is, the greater the percentage of group conversations during which pupils gave correct and complete explanations, the higher their achievement scores (Webb et al., 2009). Teachers intervened with specific groups in over a third of all group conversations. In nearly a third of all teacher interventions the group had already produced a correct and complete explanation with the remaining two thirds needing support to generate or expand an explanation. When intervening with groups, 54% of teachers' involvement was related to behaviour management issues where teachers gave further reminders of group work rules. The only teacher behaviour found to impact on pupils' ability to offer high level explanations was teacher probing pupils' explanations to uncover details of their thinking and problem solving strategies.

Webb et al. (2009) argue that future research on classroom dialogue must also focus on teacher involvement in supporting pupil dialogue to further develop understanding of effective teacher involvement in this context.

While the results found by Webb et al. (2009) are very interesting in relation to promoting effective classroom dialogue, the teachers in this sample are unrepresentative of typical classroom teachers in that they had engaged in related training prior to being recruited for the study. The study offers no teacher control group.

Concern about quality of talk in collaborative learning contexts is not confined to school age learners. Volet, Summers and Thurman (2009) carried out an in depth study of a small sample of University students in Australia. Three groups of six second year veterinary students took part in the study. Two meetings from each group was videotaped and a coding schedule was completed following video observations. Volet et al. (2009) reported that talk in the group was lacking in high level cognitive processing with evidence of primarily individual rather than group learning occurring. This was true even when group members were actively participating. The authors defined high level talk to include elaborations, speculations, justifications, inferences, negotiation and asking thought provoking questions. Volet et al. (2009) suggest in the most effective groups, speakers put forward ideas tentatively rather than authoritatively allowing space for other ideas and clarification. In the effective group students were more open and non-defensive and asked lots of 'how' questions. Interestingly students in this study reported high levels of satisfaction with their group indicating they were unaware how unproductive they may have been. Volet et al. (2009) conclude that students need to be provided with further support to make their learning experiences relevant and effective.

The type of task provided appears to be of primary importance in determining levels of talk pupils can engage in. Diezmann and Watters (2001) used case study methodology to explore collaborative learning in a group of six mathematically

gifted students, aged eleven and twelve. Data gathered included transcripts of pupil dialogue and samples of work during the one-off group session. The pupils enjoyed challenging tasks the most and the greatest levels of collaborative working occurred in this condition, however there was a ceiling level of preferred difficulty. With tasks at 'grade level' where students could achieve success independently there was no evidence of collaborative dialogue. With challenging tasks, student dialogue showed mutual scaffolding and shared cognitive and critical thinking among the group, resulting in the students working at a higher level cognitively than with independent working. Based on difficulties they observed with pupil interactions they also recommend that students should be provided the opportunity to develop the necessary social skills for effective participation.

A link between pupil dialogue and the impact on learning has been established with current research in group learning situations. While there is no universally agreed definition of which types of pupil talk best represents 'high quality dialogue' descriptions in the research reviewed in this section offer similarities and a high degree of overlap. A number of interventions have sought to develop the quality of pupils' dialogue in group learning settings.

1.34 Interventions to Improve Group Work

In recognition of the benefits of group work teaching as well as potential challenges, it is not surprising that a plethora of studies have reported attempts by researchers and practitioners to improve the quality of group work. Key studies relevant to this current research thesis are now reviewed.

Rojas-Drummond and Mercer (2003) conducted research which compared dialogue following a group work intervention with children in the UK and Mexico. In the UK-based study, 109 children aged nine to ten took part in ten 'talk lessons' with age matched controls. The teachers involved were provided training in the approach. Children's classroom talk was recorded before and after the intervention. Children in the experimental group used more 'exploratory talk' and less 'disputational talk' compared to peers in the control group. The authors define

exploratory talk as dialogue "in which partners engage critically but constructively with each other's ideas…proposals may be challenged and counter challenged" (Rojas-Drummond & Mercer, 2003, p.102). Contrastingly disputational talk is characterised by "cycles of assertion and counter assertion, forming sequences of short utterances which rarely include explicit reasoning" (Rojas-Drummond & Mercer, 2003, p.105). There were also cognitive differences between groups post-intervention, as measured by greater success in Raven's matrices in the experimental group.

In the Mexican based component of the study, 84 children aged between 10 and 12 from two primary schools and their teachers participated. They were randomly allocated to the experimental or control group. Six teachers implemented the intervention using a translated and culturally adapted version of the talk lessons. The study followed the same design as the UK project. Pre-intervention both groups of pupil dialogue showed mainly characteristics of 'cumulative talk.' Cumulative talk is described as dialogue where "children simply agree with each other without debate and without giving reasons for their answers" (Rojas-Drummond & Mercer, 2003, p.109). Post-intervention the experimental groups displayed higher levels of exploratory talk. In both components of the research it should be noted that while cognitive gains were quantified robustly, the reporting of changes in dialogue used qualitative methods and highlights methodological issues relating to demonstrating change in classroom dialogue. Furthermore 'Talk lessons' were a bespoke intervention designed by the author and not enough information is provided on the content to allow replication.

In a series of recent studies Gillies and colleagues (Gillies & Khan, 2008; Gillies & Boyle, 2008; Gillies & Haynes, 2011) explore the role of teacher and pupil dialogue during cooperative learning lessons and the impact on pupils learning following training interventions. Gillies and Khan (2008) carried out a study which included 51 teachers and 888 pupils, across 17 primary schools in Australia. This study builds on some of the methodological weaknesses of a similar study by Gillies and Boyle (2008), where no control data was provided.

From the large sample of pupils, 97 groups of 4 pupils were targeted. The groups were randomly allocated to three conditions: one- ad hoc group work; two- cooperative learning group work where teachers and pupils received training; three cooperative learning and additional dialogue training. The groups were composed of mixed ability and were balanced for gender. The teachers' and pupils' dialogue was taped and coded. The study surprisingly found there was no significant difference in the teacher talk between any of the three conditions. Teachers in conditions two and three did however use more mediation dialogue compared to the ad hoc condition indicating some impact from the cooperative learning training on teacher discourse. Contrastingly, pupils in condition three, showed significantly more helping and elaborative dialogue and higher scores in follow up assessment of reasoning and problem solving than peers in both other conditions. Gillies concludes that pupils must be taught cognitive and meta-cognitive discourse skills as they will not spontaneously display and use these skills in the absence of explicit training which negatively affects the potential of any learning experience. It should be noted that this study also provides insufficient information on the content of the dialogue training to allow this study to be replicated in anyway.

Gillies and Haynes (2011) add to the findings of Gillies and Khan (2008) with a further comparative study using an older pupil population. Thirty-one teachers from seven Australian Junior High schools participated with a sample of 615 pupils. The teachers were again trained in cooperative learning with half of the sample randomly allocated to receive further training on 'strategic questioning.' Although the 'strategic questioning' training is a custom designed package, readers are given a clearer idea of its content than in earlier studies as we are informed it draws from various published approaches including, 'Collaborative Strategic Reading', 'Ask to Think Tel-Why' and 'Cognitive Tools and Intellectual Roles'. Again teachers were audio recorded during lessons and the dialogue was transcribed and coded.

Gillies and Haynes (2011) found that teachers with the additional dialogue training used significantly more mediating statements. This would include asking

questions that probed and clarified issues, confronted and challenged discrepancies in pupil thinking, and paraphrased and summarised key issues. These teachers also used less disciplinary talk. Additionally there was also a significant difference between the dialogue of pupils in both groups. Where teachers had received additional training, pupils elaborated their responses more. Significant differences were also found in the attainment scores of problem solving measures in favour of the intervention group. Gillies and Haynes (2011) strongly support the use of dialogue training for teachers and argue that pupils should also receive similar training.

It is necessary to highlight two specific UK research collaborations which address many issues pertinent to the current research context. SPRinG (Social Pedagogy Research into Group Work) was a cross-university collaboration of study funded by the British Economic and Social Research Council's (ESRC) Teaching and Learning Research Programme. Researchers conducted naturalistic studies in authentic classrooms across three age groups, across the curriculum over an academic year. They claimed there was a wide gap between the potential of group work and its limited use in schools and aimed to improve learner outcomes in attainment, motivation and dialogue, through increased use of effective group work (Blatchford, Kutnick, Baines & Galton, 2003). Staff from the project worked with teachers in primary and secondary schools and provided training and support to allow teachers to embed group work whilst simultaneously carrying out a high quality, systematic evaluation. Scot SPRinG was an independent derivative of the main research (Christie, Tolmie, Thurston, Howe et al., 2009) carried out in the distinctive Scottish education context.

Kutnick, Ota and Berdondini (2008) and Kutnick and Berdondini (2009) reported on the findings from the Key stage one element of the project. The experimental study involved 38 primary classes with 980 children in total, aged between five and seven. Teachers randomly allocated to the experimental group participated in group work training. Teachers in the control condition received the

training time allocated to teachers in the experimental condition for personal planning and lesson preparation.

The training delivered was based on materials which were co-developed with teachers in collaboration with the researchers. However, the authors have subsequently published a book which would be a key resource for delivering similar training (Baines, Blatchford & Kutnick, 2009). Observational, attainment and attitudinal data was captured over a year period. Pupil interactions were coded and ratings of teacher actions were also compared. Kutnick et al. (2008) and Kutnick and Berdondini (2009) reported that attainment scores were greater for pupils in the experimental condition in both English and maths. In maths this difference was significant in year two, which was the upper age range of this study.

Pupils in the experimental classes also displayed greater on-task behaviour than controls, less instances of working as individuals, increased co-regulation communication and decreased social distraction. The gains increased term on term for the experimental group and the differences were significant by the final term. High level talk was limited across the study but when it did occur the experimental group was represented in 87% of the identified instances. The results of this study revealed that changes can take time to embed in classrooms. There was however no longer term follow up to ascertain whether changes could be sustained. It is also possible that changes in the pupils in the experimental conditions may simply have been due to more frequent opportunity to engage in group work compared to their peers in the control groups rather than directly benefitting from the specific training given to their teachers.

Baines et al., (2007), Blatchford et al., (2006) and Baines et al., (2009) reported on the Key Stage two element of the SPRinG project. The study again followed an experimental design, including 560 pupils aged eight to ten from 12 schools in the experimental group and 1027 control pupils from 19 different schools. Teachers in the experimental group again received training as previously described and subsequently implemented a 14 week group work programme, with a minimum

of one reinforcement session per week. They were further supported by class visits where they received independent feedback and had an opportunity to discuss their use of group work. In the control group, teachers were involved in a parallel project focusing on 'peer relations, classroom engagement and learning' which did not aim to affect teaching. Some teachers in this group may have used group work as part of their normal classroom practice but they predominantly used whole class teaching and individual work.

Blatchford et al. (2006) reported results from observational data, that indicated pupils in the experimental group were more likely to work collaboratively, show higher on-task levels and more task related interactions with all group members contributing. There was also a reduction in negative group blocking behaviour, more sustained verbal interactions and increased verbal reasoning. Blocking behaviour was described as refusing to participate, interrupting or ridiculing group members. Contrary to the researchers' hypothesis there was no difference in 'meta-talk' of task planning or organisation. It is possible that the nature of some of the tasks may have impacted on this and with a more complex, longer term group project rather than single lessons, this type of talk may have had more of a place.

Baines et al. (2007) report that attainment scores in science were significantly better for experimental groups by the end of the year. However, this result appeared to be specific to the topics taught in a group work modality and did not necessarily generalise to learning of other science topics not covered as part of the programme. The researchers were unable to monitor whether all teachers consistently applied a group work model to the rest of their science teaching and there were no checks carried out on how lessons in the control sample were delivered. It is also difficult to determine what impact each component, that is the follow up supportive visits and the initial training, played in the outcomes measured.

Galton, Hargreaves and Pell (2009) reported on the Key Stage three element which involved 42 English, maths and science teachers from secondary schools. A repeated measures design was used, with data in the form of classroom observations,

questionnaires and pupil attainment data gathered over the course of an academic year. Unlike the other two key stages, control groups were not used due to recruitment challenges. All teachers taking part received training in group work. Teachers then either taught the introduction of new concepts and problem solving through group work or whole class methodology. Significant differences in effect sizes for group work versus whole class teaching in English and maths were found with science producing ambiguous results. Boys appeared to benefit most from this change in methodology recording the biggest difference. The cognitive demands of the task interacted with mode of teaching. Similarly to Diezmann and Watters (2001), it was found when the lesson had low cognitive demands, pupils in either mode did not make progress. When cognitive demand was high, pupils in both modes made progress with effect size of group teaching highest.

In the final term it was also found that group work pupils had higher frequencies of on-task behaviour and higher level talk, including asking questions, offering explanations and making suggestions. Galton et al. (2009) do not argue for group work to replace whole class teaching completely and indeed some of the ambiguity in their results would warn against this. However, they do maintain group work should be a complementary strategy in all classrooms and that further improvements are required to ensure that group work does not remain a 'neglected art.'

SCOT SPRinG was an extension of the SPRinG project based in Scotland. It built on the SPRinG key stage two work, being an upper primary school study involving pupils aged 10-12 but with a specific focus on science (Howe, Tolmie, Thurston, Topping, et al., 2007). The researchers aimed to further the work of SPRinG by introducing new factors, that is composite classes compared to same age classes and urban settings compared to rural (Thurston, Topping, Christie, Donaldson, et al., 2008). Additionally, the researchers were interested in exploring the use of pupil dialogue further given the lack of change in high quality dialogue observed in pupils within this age group in the SPRinG study. Christie et al. (2009)

hoped to promote the type of exploratory talk advocated by Neil Mercer (see p22, also Mercer, 2005, 2010; Mercer et al., 2006).

SCOT SPRinG included 24 classes and 3 control classes representing different contexts: that is urban and rural and single age and composite classes. It was admitted recruitment of control classes, who would not benefit from training, was difficult and therefore were limited in number. The study was set over two phases beginning with an initial social and communication skills training for teachers, using materials adapted from the SPRinG training. Teachers were then joined by control group teachers and introduced to the science programmes and associated attainment tests. Training was followed by the delivery of two programmes of group work science lessons, over a 12 week period during which a range of pre and post data was collected, as well as data relating to implementation integrity. Data included classroom observations, attainment assessments as well as self-report attitudinal, self-esteem and motivation measures. Thurston et al. (2008) provide a copy of the observation schedule and a full description of instructions for implementation is provided by Christie et al. (2009). Observers recorded the context in which the pupil was working, as well as a range of fixed choice dialogue types and lessons were rated using an instrument called S-TOP which is fully described by Howe et al. (2007).

Results showed no significant main effect of context in the study, that is urban/rural and single aged/composite classes (Howe et al. 2007). There was a significant difference in the pre and post attainment test scores across both science topics for the experimental group compared to the control (Howe et al. 2007). In contrast to the SPRinG studies, modest but significant gains were also found in a general science attainment test showing transfer effects from the specific taught topics of the study (Thurston et al. 2008).

Quality of interaction and pupil dialogue improved significantly for the experimental group. Greater frequency of propositions, instructions, explanations, disagreements, question/prompt, referencing back and resolution/compromise were

used in the small group compared to whole class teaching conditions (Christie et al. 2009). Over time the increase in use of propositions, explanations and instructions in the group conditions were significant. Successful group work was associated with appropriate tasks which encouraged collaboration between pupils and with a non-directive teacher role. Authors conclude good planning and implementation of group work leads to high quality pupil dialogue, cognitive and social benefits.

The studies reviewed in this section have all demonstrated to some extent changes in pupil dialogue when either teachers, pupils or both have received additional training, over and above group work skills. A common weakness across the SPRinG and ScotSPRinG studies however is that experimental groups were compared to whole class or individual learning control groups. The studies therefore lend support to group work generally but it would be difficult to determine the value added in group work practices by their programmes. Additionally in conjunction with the training, participating classes had regular coaching visits from researchers and the complementary components of the programme were not analysed. The work of Gillies and colleagues (Gillies & Khan, 2008; Gillies & Boyle, 2008; Gillies & Haynes, 2011) lends support to the value of additional training on dialogue and group work skills for pupils over and above cooperative learning training, however results with teachers were mixed. Rojas-Drummond and Mercer (2003) also had some success with dialogue training for pupils but their study did not provide enough detail to allow replication of the intervention and there were methodological weaknesses with their analysis of dialogue. All studies highlighted cognitive demands of the lesson and teacher role as factors which influenced the quality of pupil dialogue.

1.35 Summary

The preceding sections have documented the recommendations for the use of group work through curriculum reform and a substantial evidence base for a specific methodology, cooperative learning. However the challenges in implementing group work practices are also well documented. The central issues include difficulties with levels of on-task behaviours, positive pupil relationships and high quality dialogue.

The importance of pupil dialogue and the impact on learning is also now well documented (Gillies & Khan, 2008; Gillies & Boyle, 2008; Gillies &Haynes, 2011; Rojas-Drummond & Mercer, 2003; Webb et al., 2009 & Zinicola, 2009). There has been an argument made, based upon a large body of research (Christie et al., 2009; Blatchford et al., 2006; Hammar Chiriac & Granstrom, 2012; Mercer et al., 2004), that pupils need to be explicitly taught group work skills, including dialogue, as a precursor to successful participation and subsequent learning.

A number of researchers have implemented programmes designed to address the gap between the potential of group work methodologies and teacher and pupil experiences. SPRinG and SCOT SPRinG projects are two of the most comprehensive examples of this. SCOT SPRinG was unique in establishing a significant improvement across three key dialogue types, propositions, explanations and instructions in all study conditions. However methodological issues in this project have been highlighted. The challenge therefore continues to exist for future researchers to further develop methods to improve outcomes for pupils participating in group work lessons.

1.4 VIDEO INTERVENTIONS AND VIDEO INTERACTION GUIDANCE

1.41 Evidence Base for Video Interventions

The video camera has long been utilised by a range of professions as a tool for therapeutic interventions. The use of video interventions including Video Modelling (VM), Video Self-modelling (VSM), video feedforward, interaction guidance and Video Interaction Guidance (VIG) also known as Video Home Training (VHT) has been well documented in a worldwide body of literature (Bellini & Akullian, 2007; Dowrick, 1999; Delano, 2007; Dowrick, Kim-Rupnow & Power, 2006; Kennedy, 2011). This section reviews the evidence base for the range of available video interventions before the description and systematic review of VIG, the intervention used in this thesis, is presented in sections 1.42-1.46

VM involves the client repeatedly viewing a video of someone else modelling a particular skill or desired behaviour, while in VSM the film is of the client's

performance. Discussion with a professional during or after the viewing is not usually part of the intervention. VM and VSM has been used to address an array of developmental concerns as well as targeting the development of physical, academic, communication and social skills (Dowrick, 1999). The research in this area largely involves small-N designs however there are two meta-analysis studies and several small scale review studies which provide an overview of the evidence base for these interventions.

Bellini and Akullian (2007) and Delano (2007) conducted meta-analyses which considered clinical outcomes for specific groups of clients, that is, children and adolescents with ASD using VM and VSM interventions. Bellini and Akullian (2007) included twenty-three studies involving seventy-three participants and Delano (2007) included nineteen with fifty-five participants. Both clearly defined their inclusion criteria. The studies selected operationally define the interventions used.

Bellini and Akullian (2007) reported that VSM and VM are effective interventions, based on their analysis using percentage of non-overlapping data (PND) points, for addressing social communication skills, functional skills and behaviour in clients with ASD. Furthermore the results generalise from the therapeutic setting to 'real world' contexts and are maintained over time. Contrastingly, Delano (2007) reports mixed results from the studies reviewed. Only fourteen studies report positive results with the other five studies showing mixed effects. Delano (2007) concludes the changes were maintained in the fourteen studies that reported positive findings. Given that follow-up time considered in both analyses could be as recent as two days post-intervention, it is perhaps inappropriate to confidently predict longer term maintenance effects. Delano (2007) also highlights that few studies include any measure of treatment fidelity and in contexts, for example schools, where other teaching and intervention is taking place it is difficult to attribute any changes to one particular intervention. Therefore caution is necessary when interpreting the results.

Bellini and Akullian (2007) report their findings are based on a median number of nine and a half intervention sessions, with range from four to thirty three, per individual client. VM and VSM are therefore time intensive interventions which in education settings may present a barrier to service delivery due to restrictions on available time. However, balanced against the outcomes noted in this study, the intervention may still be of interest to practitioners, for example specialist teachers and EPs.

Baker, Lang and O'Reilly (2009) reviewed 16 studies using VSM and VM interventions with a different population, that is, children with social, emotional and behavioural disorders. The studies reported include 93 participants, aged between five and eighteen, mostly in a school context working with a teacher or therapist. The studies use VSM or VM but unlike the studies presented thus far, involved the participants viewing and discussing the video with a therapist or teacher. The article does not give any detail on the structure for discussion and there appears to be no common framework or prescribed method for the discussion between different researchers. Six of the studies also combine VSM or VM with discussion and other intervention components.

Baker et al. (2009) used percentage of non-overlapping data (PND) points to analyse data from eleven of the sixteen studies, with the others being excluded for not providing individual baseline data. Studies were all small-N experimental designs with sample sizes of between 1 and 18 participants. They conclude that the studies reviewed demonstrate that VSM interventions are effective for increasing on-task behaviour, decreasing inappropriate behaviour and increasing appropriate peer interactions.

Dowrick (1999) conducted a review of over 150 studies that use VSM with the aim to categorize the various procedural strategies available and illustrate their varied use in practice rather than evidencing clinical outcomes and effect sizes of VSM . The studies reviewed included a wide age range of participants, who took part in interventions for a variety of purposes and utilised a variety of research

designs. Dowrick (1999) concludes the studies that report the greatest effects are VSM interventions that focus on the potential for future success rather than the current difficulty.

Unfortunately, Dowrick (1999) did not detail his methodology for selecting the studies for review, but he states a third of studies selected are unpublished dissertations. He also does not detail how he has generated the procedural categories discussed in the review. While the meta-analysis and review studies generally report positively on the impact of VM and VSM, there are weaknesses common to the body of research. Studies are small-N designs and often provide no control group data. Pertinently, there appears to be major variations in the actual interventions, for example session length, length of total intervention, whether a trained person discusses the video with the client and no common prescribed or accepted methodology, yet they are treated as an homogenous group in research.

A further group of video interventions appear similar in sharing a common aim to support parenting by improving attachments between caregivers and their children. These include VIPP (Klein Velderman, Bakermans-Kranenburg, Juffer, Van Ijzendoorn et al., 2006), interaction guidance (McDonough, 1995) and the Marte Meo Method (Vik & Rodhe, 2014). While the evidence base for these approaches appears promising, the delivery of these interventions remains time intensive and applicable only to work within families, therefore is perhaps of limited scope to an EP.

Bakermans-Kranenburg, Van Ijzendoorn and Juffer (2003) conducted a literature review of interventions focussed on promoting parental sensitivity and attachment with a population of over six thousand mothers. There was some limited support for interventions with video feedback being more effective than those without. These results informed the development of an intervention by the same group that explores the use of video feedback in supporting parents to form a healthy attachment with their children (Juffer, Bakermans-Kranenburg & Van Ijzendoorn, 2005). 130 new adoptive families were randomly allocated to form three matched

groups allocated to different interventions: book on sensitive parenting; book and three video feedback sessions; or a no intervention control. The authors do not describe or refer to any particular method of video feedback although it is expected this would mirror that delivered in the VIPP intervention (see Klein Velderman, Bakermans-Kranenburg, Juffer, Van Ijzendoorn et al. (2006).

The intervention with video feedback was most successful at increasing maternal sensitive responses, thus promoting attachment and reducing classification of disorganised behaviour in their children at twelve months. However, it could be argued that adoptive parents are better placed than birth parents, with associated high risk factors, to take advantage of this intervention. Therefore further research would be useful to attempt to replicate these positive results with different groups of parents.

Klein Velderman, Bakermans-Kranenburg, Juffer, Van Ijzendoorn et al. (2006) developed a standardised video feedback intervention using positive video clips accompanied by a set range of activities, to promote positive parenting (VIPP/-R). They targeted mothers and their young babies with attachment difficulties, where the children were at risk of developing emotional and behavioural disorders. A group of 81 mothers, with infants aged seven to ten months, were randomly assigned to one of three conditions: video feedback focussing on mothers sensitively responding to their baby (VIPP), video feedback with an additional focus on attachment (VIPP-R) and a 'no intervention' control group. The professionals carrying out this intervention had training in the technique and the discussion follows a set of pre-determined guidelines. There is a focus on linked turns in interactions between mothers and their children.

Children were followed-up three years later and a checklist was completed by parents to report on of their children's behaviour. There was a reduction on subsequent pre-school clinical levels of internalising, externalising and total behaviour difficulties for the VIPP group, which was comparable to a normal population sample. There were no differences between the VIPP-R and control

groups, with both groups remaining a higher level of concern than a normal population sample. Klein Velderman et al. (2006) suggest this may be due to less satisfaction with the attachment focus, resulting in increased tension and less intervention profits. Alternatively the attachment focus may have taken too much time from the behavioural focus so that this element was jeopardised. Further research would be needed to explore the difficulties that arose with the VIPP-R intervention while the VIPP intervention could be explored with different groups of mothers. It would also be useful to replicate the research with older groups of children as both Juffer et al. (2005) and Bakermans-Kranenberg et al. (2003) involve parents and their very young children.

These previous two studies employ more robust research designs in comparison to the VM and VSM studies. However this model is applicable to a limited parenting need and requires replication with other groups and age ranges, by independent researchers not involved in the development of the programme to determine how generalisable the results of these studies may be.

A further video intervention to consider is 'interaction guidance,' a method developed by McDonough (2004) and widely used in the United States. Interaction guidance is an approach mainly used in parenting interventions to promote attachment and is characterised by five core elements: a non-authoritative therapeutic stance; treatment goals identified by the family; building on existing strengths; promoting parent satisfaction when interacting with their child; and suggesting alternative interpretations of infants' behaviour (McDonough, 1995). A positive relationship between family and therapist is key in this intervention.

Interaction guidance has recently been used as part of Circle of Security, an attachment based parenting intervention (Page & Cain, 2009). Page and Cain (2009) report the results of a case study from an intervention pilot group. The client is a twenty-three year old mother with three children aged two, three and four, who had previously been removed from her care. The programme is delivered over twenty-seven weeks with each parent in the group having three individual video reviews.

Qualitative methods were used to evaluate the impact of this evaluation. Empathic shift was noticed in the mother pre and post-intervention. Improvements were noted in the children's response to the Strange Situation experiment (Ainsworth & Wittig, 1969) when comparing video from film one and film three.

In this study, interaction guidance was used to enhance the parenting programme. There was no attempt made to analyse the different elements of this intervention and although the use of video appears to be key, there were other elements to the programme. The evaluation focussed on very specific behaviours and child outcomes and the views of the mother were not detailed. Perhaps of primary importance to policy makers would be the programme duration; a twenty-seven week intervention, which is arguably beyond the scope of most public services and agencies.

A final video intervention which focuses on promoting attachment and attuned interactions between parents and children is the Marte Meo method (Vik & Rodhe, 2014). Marte Meo was developed by Maria Aarts and colleagues in the Netherlands, who have links with professionals involved with the development of VIG. It is used widely across 36 countries but has little research evidence for its effectiveness (Vik & Rodhe, 2014). The method involves taking short clips of the parent and child interacting, analysing and editing the recording with a focus on the child's needs and highlighting the supporting and sensitive components of the interaction. The edited film is then reviewed by the client and a therapist trained in the method. A description of the review process is described by Vik and Rodhe (2014).

Vik and Rodhe (2014) report on the use of Marte Meo with 27 mothers who have a diagnosis of postnatal depression and their children. They describe their research as a phenomenological study and present five vignettes outlining processes of positive change for the mothers as well as the feedback from parental interviews. Vik and Rodhe (2014) report the powerful effect, based on maternal self-report, for mums observing on the video the many attempts of their infants to communicate with

them. This reinforced their own significance within the relationship and facilitated their ability to interpret their babies' cues and respond appropriately. There are no measures reported of the impact of the mothers' post natal depression post-intervention, any behavioural indicators for their babies or quantitative changes in the interaction between mothers and babies.

A further method of video intervention which has been building up research interest in recent years is video feedforward, which has been developed by Dowrick and colleagues at the University of Hawaii (Dowrick, Kim-Rupnow & Power 2006). Feedforward is the process where the client views an "*image of future mastery*," that is currently unobtainable for the client (Dowrick et al., 2006, p. 194). It is a similar model in practice to VSM, however the images are produced by either editing out hidden supports, editing together the different components of a behaviour/skill into one complete fluent run or by editing a behaviour/skill into a new context.

Dowrick et al. (2006) describe an application of video feedforward in schools to support reading fluency. The study used a multiple baseline, across participant design, over eight weeks, for ten pupils aged six and seven who were identified as 'failing' in reading. Each participant was receiving additional tuition and measures were taken initially with tutoring only, followed by tutoring and video feedforward, another block of tutoring only and finally a delayed follow-up period. Reading fluency improved significantly for nine out of ten students. Furthermore improvements were significantly greater during the feedforward stage compared to other stages of the intervention. The gains took the children from 'failing' in their reading to an average range for their age and were sustained post-intervention, although some short term decreases in reading fluency immediately post-intervention were noted.

Interestingly, Dowrick et al. (2006) highlight reluctant attitudes of staff in relation to the use of video as a potential barrier to the implementation of this intervention. "*It has been our experience in working with videos in busy schools that staff would rather provide 4 hr of tutoring than spending 1 hr making a video*"

(Dowrick et al., 2006, p. 204). They propose that video feedforward could perhaps only be used as an additional element to other interventions or in special circumstances, even if the benefits merit more universal use. Dowrick et al. (2006) suggest further research is needed to explore possibilities of a video only phase to allow further analysis of the enhanced benefits of video with tutoring versus each element individually. Additionally further research would need to address some of the practical barriers identified in delivering such an intervention in the school context, including levels of acceptability with staff.

Landor, Brown, Cameron, Wood et al. (2009) report on the results from a pilot of a video feedforward project based in a Scottish primary school, which specifically looks at the factors underpinning the success and barriers to a video feedforward intervention. A multiple-case study approach is used to illustrate five practitioners' attempts to introduce and pilot this intervention with nine children aged between six and thirteen and one adult. In nine out of ten of the cases the client was involved in planning their own video or photo story.

Landor et al. (2009) conducted a thematic analysis of questionnaire responses from children, parents and school staff and from interview data with the adult participant. They conclude video feedforward is a simple method, but one that can result in quite powerful changes for the client. Unlike Dowrick et al. (2006) there were no negative attitudes toward the use of video reported from children, staff or parents. Barriers to implementation however included time, technology skills and equipment, communication with everyone involved in working with the child and negative attitudes about the pupil.

The professionals who delivered the intervention were mainly in specialist posts which were peripatetic to the schools. It may be therefore that this approach is only suited to professionals in a specialist remit with additional time available. It should be noted that the focus of this study was on implementing this approach in a school context. Therefore there was no evaluation data gathered to measure

objective outcomes for the pupils and findings reported are based solely on client report from questionnaire measures.

This section has demonstrated that the use of video in therapeutic contexts is not a new concept. Video interventions have been developed to support a range of clients in a wide variety of contexts. There is an emerging evidence base to support the efficacy of a variety of video interventions. However, VM, VSM and video feedforward, which are perhaps best fit for delivery in a school context, all require further research due to methodological limitations in the studies described. The attachment focussed interventions, while having more robust research designs, are unlikely to be considered for education contexts due to high costs associated with time intensive, specialist interventions. Additionally, an overall concern arising from reviewing the current literature is the conflation of video interventions with concurrent or multi-modal interventions, resulting in difficulty determining the unique contribution of the video element. While there are many similarities between the different approaches there are also some clear methodological distinctions including: aims and focus; procedures for filming, editing and reviewing films; duration of the intervention; and role of the professional. A further concern therefore is the tendency to treat all video interventions as a homogenous group and as a result fail to clearly define intervention methods and assess treatment fidelity in the research.

1.42 What is Video Interaction Guidance?

VIG was developed in the late 1980s by Harrie Biemans, a Dutch Psychologist, working with a project centre known as SPIN- Stichting Promotie Intensive Thusbehandling Netherlands (Simpson, Forsyth & Kennedy, 1995, Kennedy, 2011). Internationally, terms used to describe this same intervention include VIG, SPIN and VHT. The intervention was initially developed to restore and promote healthy relationships between children and their parents, particularly for high risk families when children had been placed out with the family home by social services.

VIG is an approach that has gained support worldwide. Practitioners hail from a range of professional backgrounds including health, social services, education and the voluntary sector. In the UK, training, supervision and accreditation for practitioners is coordinated through the Association of Video Interaction Guidance UK (AVIGuk) (www.videointeractionguidance.net). There are over 1300 members currently registered with AVIGuk, who have either completed or are undertaking training in the method. The training usually commences with an initial two day training but is then developed through a practical programme with trainees quickly working with clients under supervision. Accreditation occurs at three stages in the process. During accreditation trainees are required to demonstrate their skills through presentation of videos of the trainee working with clients and through dialogue with an experienced external supervisor. Training lasts around two years with regular supervision provided by a registered supervisor who has been trained to supervisor level with AVIGuk.

VIG is a multi-stage process that aims to "give individuals the chance to reflect on their interactions, drawing attention to elements that are successful and supporting clients to make changes where desired" (Kennedy & Sked, 2008, p.128). The process begins with a 'guider,' who has received training in VIG, meeting with the client to help the client identify their personal goals (Kennedy, 2005). VIG practitioners report that the process of change can begin from this moment, as the client is supported to construct and imagine the possibilities with an alternative future in a similar manner to a solution focussed or person centred planning approach.

A short film of up to ten minutes is then taken of the client interacting with others with the aim of discovering the client's strengths in communication. The interactions filmed will vary from client to client depending on their individual goals but may include the client with their child, partner, colleague or students. The film is then micro-analysed, normally by the guider, to elicit the client's most successful moments of communication based on core 'principles of attuned interaction' (see Appendix 1) when communication partners are 'attuned' with each other (Kennedy,

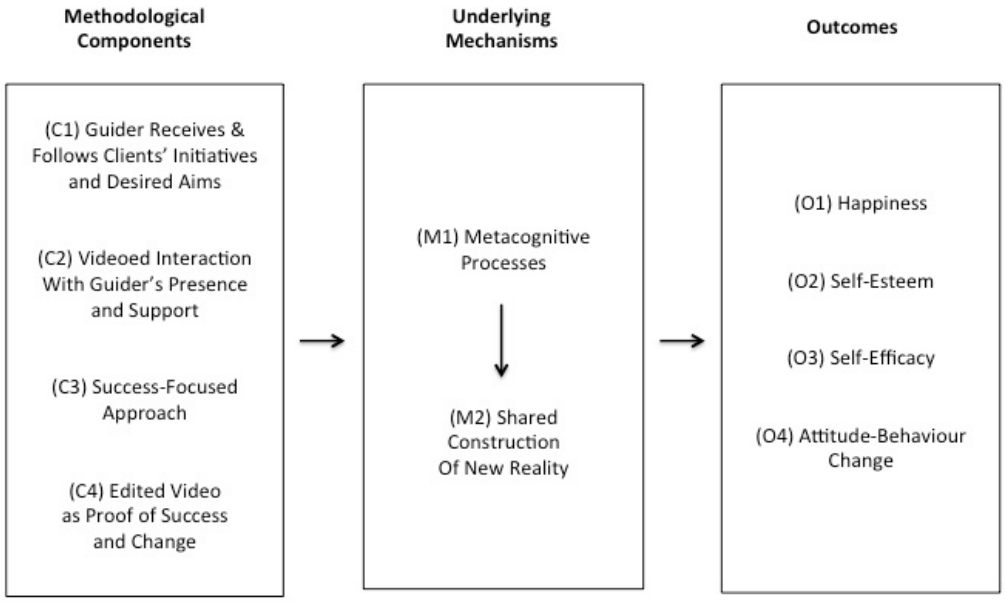
2011). The principles of attuned interactions are a hierarchy of behaviours essential for effective communication which were identified based on the work of Trevarthen, in his studies of the development of communication in infants (Trevarthen, 1998, 2009).

Clients are then provided with the opportunity to review the selected short clips with a guider and are supported to actively reflect on what they are doing to make the interaction work well (Kennedy, 2011). This collaborative process of shared review highlights existing strengths that are already contributing to the clients identified goals, celebrates these successes and seeks to build on them. The analysis frequently develops from description of behaviour in the video to an exploration of feelings, thoughts, wishes and intentions within the interaction (Kennedy & Sked, 2008). Lasting change can take place by this opportunity to reflect at a meta-cognitive level and develop a deeper understanding in the client of their own pattern of communication (Landor, Lauchlan, Carrigan & Kennedy, 2007). A cycle consists of one filming session and one shared review. The number of cycles a client has will often be around three but can vary and will be negotiated based on the client's needs (Kennedy, 2011).

Doria, Kennedy, Strathie et al. (2014) reported the first published research study attempting to articulate why VIG works. They use a grounded theory approach (Glaser & Strauss, 1967) with data including video of 15 shared reviews, interviews with three VIG guiders and five VIG supervisors. Their analysis identifies four key components of the method: the guider's reception of the client's initiative and support they provide; the videoed interaction; the success focussed approach and finally video as proof of success. They further identified two underlying mechanisms; the meta-cognitive processes and the shared construction of a new reality. A graphical representation of their model is provided in Figure 1. The model illustrates how the key methodological components highlighted are mediated by the underlying mechanisms in order to produce four main outcomes for clients. This data sample focussed on family therapy work. Further research would be required to see if the findings could be replicated and to test this model across a wider range of

practitioners and with those using VIG in a range of contexts, but it is a useful contribution to an area under researched.

Figure 1. How and Why VIG Works (Doria et al., 2014)



1.43 What distinguishes VIG from other video interventions?

There appear to be several distinct elements to VIG which contrast with other methods of video intervention: theoretical underpinnings; focus on existing strengths; use of micro clips, prescribed format for the shared review; training and accreditation for practitioners.

The theoretical underpinnings distinguish the role of the guider from other roles the professional may take with the client in traditional video interventions. Emphasis is on the guider working collaboratively with clients rather than in an expert or teaching role. As we have seen from other video interventions (Dowrick, 1999; Bellini, 2007; Baker et al, 2009), the intervention may involve clients viewing film with no dialogue or the professional carrying out a more didactic role. In contrast, in VIG the role of the guider is a crucial part of the intervention. With a

focus beyond observable behaviours, the guider strives to work with the client to create intersubjective experiences. The guide is not viewed as an expert and the client's reflections are respected and developed in a collaborative process of shared review.

Contrary to some traditional models of intervention and therapy, VIG focuses on the positive interactions, even when they are the exception within a difficult relationship (Hynd & Khan, 2004). It therefore highlights existing strengths and potential within the client, rather than drawing attention to weaknesses (Simpson et al., 1995). However, clients still have the opportunity to pinpoint skills they wish to develop or settings they wish to transfer existing skills to, allowing working points to be identified and reviewed in subsequent sessions.

This strength-based focus is distinct from other therapeutic video interventions, even where there is a similar aim to promote parent-child relationships and develop positive attachments. In 'Circle of Security,' which uses an Interaction Guidance approach, areas of challenge are also highlighted on video as well as strengths (Page & Cain, 2009). VIG is even more starkly contrasted with other video methods used on popular television (e.g. 'Supernanny') whereby films are edited to show the client's 'mistakes' and 'failures' at times when relationships can be at their most difficult.

The use of short micro clips allow detailed analysis of very specific behaviours and a quick pace of turn taking between the film, client and guider. This contrasts to other interventions where median clip length can exceed three minutes (Bellini & Akullian, 2007). Additionally, the guider has undergone an extensive and rigorous training to maximise their skills in meeting the client's needs during the shared review and ensure treatment fidelity (Kennedy, 2011). Finally guiders are required to participate in on-going intervision post-training to maintain standards and demonstrate an ongoing professional commitment to the approach.

1.44 Current Evidence Base

While VIG appears to have been carefully developed, with clear theoretical underpinnings and a rigorous training programme, this section of the literature review will argue that the evidence base for its efficacy requires further development. Indeed Fukkink, Kennedy & Todd (2011), who have written a book chapter reviewing the current evidence base, acknowledge further research, particularly UK-based experimental studies, is required. This view is echoed by others (Gromski, 2011; MacDonald, 2014; Musset, 2014). From the research currently available, few studies provide the methodological rigour or population size required to support the position that VIG has a robust evidence base.

VIG has been recommended as an evidence based intervention by a range of credible sources. For example, National Institute for Health and Care Excellence (NICE) (2012), NSPCC (2013), Moullin, Waldfogel, and Washbrook (2014) and Barlow and Schrader-MacMillan (2009). NICE (2012) recommend VIG to promote social and emotional well-being in at risk families with young children but provide no details of the research on which they make their recommendation. NSPCC (2013) also promote VIG as one of two key interventions they offer with 'at risk' families as part of their neglect themed work. The two sources they cite in this report are a meta-analysis by Fukkink (2008) which will be critiqued later in this chapter and a second study which arguably does not use a VIG intervention. As a conclusion of a literature review for the Sutton Trust, Moullin et al., (2014) recommend VIG for at risk families. The report provides no references to research for VIG, only that it is used by a third party parenting project. Barlow and Schrader-MacMillan (2009) review a number of different interventions, on behalf of the Government Department of Schools and Families, for parents who emotionally abuse their children to recommend 'what works,' which is the title of their paper. VIG is one of their recommendations. In their review they cite only one study, Benoit, Madigan, Lecce et al. (2001) and make reference to other research, unfortunately with no further references provided. However, Benoit et al. (2001) report the intervention used in their study is McDonough's model of 'Interaction Guidance' (McDonough, 1995) and not VIG.

Treating similar video interventions as a homogenous group is a recurring theme throughout the literature. While clearly there are similarities between interventions, earlier sections of this chapter have highlighted distinct differences, and it could be argued that they should not be considered one and the same in the absence of evidence. This assertion is, however, disputed by Fukkink, Kennedy & Todd (2011, p. 85) who state that although "different approaches arose as distinctive models, their similarities mean that studies into the effectiveness of [similar video interventions] provide evidence for the effectiveness of VIG as practiced in the UK".

Table 1 presents research studies which contribute to the currently available evidence base for the effectiveness of VIG. Studies are listed in terms of the author's assessment of hierarchy of evidence based on guidance by Sackett, Straus and Richardson (2000). The table has two key sections. The first section reviews studies with a focus on the use of VIG in families, which will be described and critiqued in detail in sections 1.441 and 1.442. The majority of these studies involved families where there are concerns about parenting for a range of reasons (1.44). A small subset involves the use of families where the child has an ASN (1.442). The second section includes studies set in education contexts, including an additional subsection of unique studies where a child is the direct client. Further details of these studies along with a full critique is presented in section 1.443. A final key area of VIG research is professional development, where the professional is the client, with the aim of improving their practice and the impact on their client is not studied (e.g. James, Hall & Phillipson, 2012, Schenau & Zuiker, 2009 & Zimmerman, Amodeo, Fassler et al. 2003). Professional development studies will therefore not be reviewed in this chapter as they are not outcome focussed.

Table 1. VIG Research Studies

Authors	Design	Participants	Positive Intervention Outcomes	Comments
Fukkink (2008)	Meta-analysis of 29 studies	1844 families with parenting concerns. Children aged 0-18.	Parenting behaviour, attitude of parents & child development	Only 8 studies included used VIG, remainder were other video interventions
Tooten, Hoffenkamp, Hall et al. (2012)	Randomised control trial	210 mothers & new-born premature babies	Not yet available	Study not yet complete
Feliciano, Santos & Silva (2012)	Quasi Experimental	300 experimental & 114 control parent-child dyads. Age of children not provided.	Parental sensitivity, perception & responsiveness	
Robertson & Kennedy (2009)	Quasi experimental	15 high risk mothers in residential centre. Ages of children not detailed.	Parental sensitivity & classification of parenting skills	Study located in an assessment & treatment centre following CP concerns
MacDonald (2014)	Pre-post case study	4 mothers of children aged 7-10 at risk of neglect	Parent attitude and confidence	Doctoral study
Simpson, Forsyth & Kennedy (1995)	Pre-post case series	5 families-further participant info not provided	Parental attuned response, parent perception	
Gromski (2011)	Pre-post case series with follow up	4 Parents & children aged 4-12. Children have SEBN	Marginal gains in 2 out of 4 cases	Doctoral study. Inconsistent gains & not maintained over time.

Rackett & Macdonald (in press)	Pre-post case series	30 mothers with PND & their babies. Data on 22 reported	Reduced levels of PND, increased confidence & progress towards parent goals	Measures all self-report and delivered as part of a wider intervention programme
Haggman-Laitila, Pietila, Fris et al. (2003)	Case series	20 at risk families, children aged 2-8. Data reported on 5	Positive parent-child interaction & parent attitude	Unexplained high attrition rate
Sluckin (1998)	Narrative case study	2 mothers with PND-baby dyads	Increase in parental attuned responses	
Celebi (2014a)	Narrative vignette	3 mothers with PND-baby dyads	Parental feedback	
Celebi (2014b)	Vignette	Mother with PND-baby dyad	Mother baby interaction	
Hynd & Khan (2004)	Case series	2 mothers with PND	Change in parent narrative of self	
James, Wadner-Kamble & Lam-Cassettari (2013)	Pre-post case series with follow up	3 parent-child dyads. Children have HI	Parent attunement, parent responsiveness & achieving individual goals	Changes maintained at 8 week follow up
Gibson (2013)	Pre & post case study	Mother & 5 year old child with ASD	Parental attitude and knowledge	
Pilnick & James (2013)	Case study	Parents & 8 year old child with ASD & HI	Parental perception	High quality study but primarily a process study so limited outcome data
McCarten (2009)	Action research case study	Parents & teacher of 3 year old child with SEBN	Parent attitude, positive home-school communication, improved communication with child	Doctoral study

Loughran (2010)	Case series	3 siblings aged 8-12 of children with ASD	Significant increase in attuned behaviours. Parental report of sibling relationship	Doctoral study. Positive self-report but video data results ambiguous
Fukkink & Tavecchio (2010)	Quasi experimental	52 experimental & 43 control EY teachers	Difference in range of objective & self-rated relational measures	
Rautenbach (2010)	Quasi experimental	3 NG staff, 1 teacher, 4 parents & their 8 year old children. 4 control children from same NG	Improved staff and parent communication skills	Doctoral study. Child outcomes produced ambiguous results with 1 measure favouring control group
Brown & Kennedy (2011)	Pre-post case series	6 teachers working in a school for pupils with SEBN	Change in teacher & pupil dialogue	
Hayes, Richardson, Hindle & Grayson (2011)	Pre-post case series	10 teaching assistants working with pupils with SEBN	Self-ratings of staff confidence & skills in supporting individual pupils & their return to mainstream classes	
Collins & James (2011)	Case Study	Teacher of the deaf & an 8 year old pupil with HI	Teacher confidence	
Kaye, Forsyth & Simpson (2000)	Pre-post case series with follow up	5 mainstream teachers	Teacher attribution of pupil behaviour	Inconsistent results found in video data

Mussett (2014)	Quasi experimental	9 primary school classes & 6 control classes	Increased pupil self-esteem, significant difference in pre-post self-rating for effectiveness of group work, positive teacher & pupil ratings of VIG	Doctoral study. Video data was inconclusive. Peer assessment of communication skills favoured control group.
Landor, Lauchlan, Carrigan et al. (2007)	Pre-post case series	14 children aged 6-11 with learning difficulties	Teacher & pupils report positive change	
MacCallum (2013)	Case series	2 year 5 peer mentors	Mentors understanding of mentoring skills and reflection on their communication strengths	Doctoral study
Walmsley (2010b)	Case series-Multiple baseline	2 groups of 4 primary 7 pupils	Pupil evaluation. Increased use of propositions and explanations in cooperative learning lessons.	

1.441 VIG in Family Contexts

One of the strongest studies to date was reported by Fukkink (2008). He conducted a meta-analysis of 29 studies, which included nearly two thousand families, using video feedback interventions to address parent behaviour. He identified studies following extensive database searching and also following up the proceedings publication from the VIG International Research Network. Large numbers of studies were omitted as they did not have the methodological and statistical rigour to allow calculation of an effect size. This reflects, by and large, the nature of the many small number and qualitative studies in this field of work.

Fukkink calculated experimental effect sizes using Hedges' 'g'. The dependent variables and measures used in individual studies are not reported, rather Fukkink allocates study results to the following three pre-determined categories; parenting behaviour, parental attitudes and child development. Results indicated a statistically significant effect size of 0.47 for change in parenting behaviour. Parents showed increased skill in interacting with their children and were more confident in their parenting skills. An effect size of 0.37 on was found on parental attitudes, for example experiencing more pleasure and perceiving fewer problems. Finally an effect size of 0.33 on the development of the child was reported.

While these results are very positive in terms of the efficacy of VIG methodology they must be interpreted with caution. Only eight out of the twenty-nine studies analysed used VIG (VHT) methodology, other studies included were Interaction Guidance, VIPP and VIPP-R while others did not name a specific video intervention method. As already discussed each video intervention differs in subtle but significant ways and do not readily fit into a homogenous group. Of the eight VIG studies, five were published in Dutch and the author has not been able to locate sources for the other three studies to allow a deeper review of the studies included in this meta-analysis, for example treatment fidelity. Fukkink provides further data for the VIG studies analysed in isolation from the other twenty-one presented and reported increased effect sizes of 0.76, 0.56 and 0.42 respectively.

Fukkink (2008) concedes the study does not allow conclusions to be made about a unique contribution of video feedback as many of the studies included involved multi-modal interventions. Furthermore the studies often included only pre-post measures of an experimental group with no control data. However, Fukkink (2008) makes some general observations about the differences between the effectiveness of video interventions. On average a short but powerful intervention was more effective than longer programmes, but an optimal length is not specified. Fukkink (2008, p.913) recommends the use of video feedback "should always be structured by a protocol that guides the recording, editing and presentation of video images".

A further high quality on-going study by Tooten, Hoffenkamp, Hall et al. (2012) may add to the evidence base for VIG. 210 mothers with new-born babies were recruited to examine the impact of VIG on premature babies and their mothers. An RCT design was used to allocate mothers to an intervention or control group, with mothers of healthy term babies, moderately preterm and extremely preterm in the sample. A range of outcome measures have been included to examine bonding, parent-child interactive behaviours and as secondary outcomes parental mental health and infant behaviour. Results from this study are not yet available. The sample size and rigorous design is unique to studies using a VIG intervention and will be a welcome addition to the available evidence base.

Feliciano, Santos and Silva (2012) report on a large scale quasi-experimental study with 114 experimental parent and child dyads and 300 control dyads. This is a longitudinal study with a pilot phase and then data collected over a three-year period. Feliciano et al. (2012) report on the pilot and year one of the project. By year one of the project the control group was reduced to 215. No speculation is made on the possible reasons for this attrition rate. Data was collected from families in three districts of Portugal. In one district staff were trained in VIG and offered the intervention to their clients, the other two districts were used as controls. It is not stated to what level the staff delivering the VIG intervention were trained. The measures used were two self-report questionnaires.

There was an increase in parental sensitivity, perception and responsiveness in the experimental group. There was also found to be a decrease in depressive symptoms of parents. However there was no statistical significant difference between groups on any of the measures. In a linked study Agra, Feliciano and Santos (2012) explore the impact of vulnerability to stress and work performance of the professionals involved in delivering the VIG intervention. Results are not yet available for this element of the study.

The remaining family studies using VIG all employ small n-designs, case series or single case designs. Robertson and Kennedy (2009) worked with a high risk population, recruiting a sample of eight self-selecting parents in a residential centre for families with child protection concerns. The centre provided a three month period of assessment in conjunction with intervention, ultimately in order to determine whether children could remain in their parents care. A control group of fifteen parents receiving treatment as usual was also recruited. The experimental group received between three and five VIG shared reviews. Both authors of the study are qualified advanced VIG supervisors. The main source of evaluation was pre- and post-observation of parent-child interaction for behaviours related to maternal sensitivity. Results show that pre-intervention scores of maternal sensitivity were similar for both groups. Scores increased for the intervention group to give an effect size of 0.5. Significantly, this allowed classification of parenting skills to shift to 'good enough' for the majority of the group, which is clearly a meaningful change for this population. Robertson and Kennedy (2009) consider this to be pilot data and plan a future, more robust study, for example including random allocation or carefully matched groups. Use could also be made of the video data for more reliable observation of interactions in addition to gathering family and professional views of the impact of the intervention.

Working with a similarly higher risk group of families, MacDonald (2014) carried out a case series study with parents of children aged between 7-10 years identified as at risk or experiencing neglect. Four single mother-child dyads who were participants in a VIG intervention as part of the UK NSPCC's programme of

neglect (see pg. 50) were the focus of this study. Therefore unlike many VIG studies, the author did not provide the VIG intervention. Semi structured interviews were carried out with parents two weeks post-intervention. Samples of video data of parent-child interactions and VIG shared reviews transcripts were also analysed. Additionally MacDonald (2014) gained access to the questionnaire instruments that were being utilised as part of the NSPCC's own evaluation of their project.

Interview data revealed that parents believed that VIG enhanced their relationships with their children. Despite initial apprehension about the use of video, parents were generally very positive about the intervention. Improvement in communication was a recurring theme, particularly recognising the importance of responding to and valuing their child's initiatives. Parents also shifted in their descriptions of their children moving from problematic to positive. They felt that viewing the video provided them evidence of changes they otherwise would not have believed would be possible and this improved their confidence in their parenting role. Furthermore parents reported benefitting from the focussed one-to-one time with their children with a fun range of new activities and games as the focus of the interaction. While this is a by-product rather than a core part of the intervention it is interesting how powerful this was to the families.

Quantitative data from video analysis however showed inconsistent results across the parents. On every video observation measure while one or two parents showed an increase at least one parent remained unchanged and in many cases showed a regression. MacDonald (2014) therefore concludes the video data does not provide evidence for increased sensitivity and attunement in parenting behaviour. MacDonald (2014) suggests some of the variability between parents was due to varying types of activity undertaken at filming sessions leaving less opportunity for quality interactions. Providing families similar activities to engage in at each session would allow easier comparison across time periods and between cases for research purposes.

With a more eclectic client group, Simpson, Forsyth and Kennedy (1995) were the first authors to formally evaluate VIG in the UK. The pre-post case series design they use is typical of the majority of research involving VIG. Simpson et al. (1995) opted to use the principles of attuned interaction as the basic evaluation instrument. Observations were used to code behaviours which were then analysed for frequency of use. This process was undertaken by using a sample of film from the first and final sessions with 5 families. The families were a convenience sample, already open cases to educational psychologists for various reasons not specified in the report.

Results showed parents significantly increased frequency of 'attuned' responses to their children, decreased their 'discordant responses,' increased turn taking and increased their time spent in 'yes cycle' pattern. Interview data suggests the families viewed the intervention positively and reported changes in how they experienced and managed their children. The authors however acknowledge the challenge of drawing conclusions from these results due to small sample size, lack of control group and also admit to being "relatively untrained and inexperienced in the new technique." Disappointingly similar methodological weaknesses identified in this early study are mirrored in many future research studies.

Gromski (2011) concludes proceeding with caution using VIG following a case series, outcome focussed evaluation with four parents of children aged between four and twelve. The study employed a pre-post and six week follow up design, with parents each receiving three shared reviews. Measures included pre and post parent self-report questionnaires, parent goal scaling exercise, written reflections and semi structured interviews with parents. EPs delivering the intervention also took part in semi structured interviews post-intervention. Gromski, who was not involved in delivering the intervention, used a thematic analysis to scrutinise the data.

Two of the four cases showed no difference in any of the measures with the other two reporting subtle positive differences. The positive differences found were a partial achievement of goals within the parental goal scaling exercise and slight,

non-significant change, in questionnaire scores which were however not consistently maintained at six week follow up. The semi structured interviews revealed some improvement in parent confidence and self-awareness but this was again not consistent across participants and not consistently transferrable to the parent's interactions with their child. While these findings are not positive about the use of the VIG it is helpful to have access to the full range of research carried out, regardless of the direction of the findings.

Gromski (2011) notes that the EPs delivering the intervention were at different stages in their VIG training. The case with the poorest outcomes had involvement from an EP at the initial training stages, although it should be noted other research with positive outcomes has involved interventions delivered by trainee VIG practitioners (McCarten, 2009; Gibson, 2013). Interview data revealed that EPs reported the allocation of time to deliver the intervention as a perceived barrier and parents reported wanting more shared review sessions. The parents in this sample all rated highly on levels of parental stress and complexity of need. It may be the level of need in these cases merited a longer term intervention, although VIG was being delivered as one part of a long-term multi-agency package in two of the families. There were also issues raised about acceptability of the intervention to clients. EPs reported that consent for the use of the method could be problematic with families distrusting the use of video. Parents reported the intervention having little transferability to their day to day life as they rarely had time for one-to-one interactions with their child due to presence of siblings or other family members. Parents also voiced that VIG did not help them understand what was 'wrong' with their child and they would value an assessment of underlying causes of the behavioural challenges they faced along with direct advice and strategies. EPs supported the assertion that parents could find it difficult to shift focus from the problems they saw as being within child to parent-child interaction. Gromski concludes that there are a number of client, intervention and interaction factors that impinge on the possible effectiveness of the intervention that requires further exploration in research.

Working with a moderate risk population, Rackett & Macdonald (in press) present the evaluation of the use of VIG as part of a parenting group for mothers with post natal depression in the UK. 30 mothers were initially recruited for the group with 22 completing. Valid reasons for the attrition rate are provided. The groups were made up of six to eight mothers over a seven week period meeting for one ninety minute session per week. Mothers were filmed interacting with their children in the group setting but received individual shared reviews by Rackett who is a qualified VIG supervisor.

16 mothers had reduced scores on a common screening assessment for PND. For 4 mums there was an increase in PND and additional support was sought to help address their mental health needs at the end of the programme. TME (Dunsmuir, Brown, Iyadurai, 2009) showed all 22 mothers made progress towards their own set goals. Additional comments written by parents on the TME forms provide evidence for a change in parental perception and understanding of their children's needs as well as an increase in parent confidence. Rackett et al. (in press) acknowledge the group receives no funding for evaluation and therefore they have limited time and resources available. For future studies it would be useful to triangulate the parental questionnaires and report data with objective video observation of parent and child interaction or child behavioural measures. It would also be useful to have a control group who receive the parenting programme without the VIG element to isolate what element of the overall programme contributes to any changes for clients.

Haggman-Laitila, Pietila, Friis and Vehvilainen-Julkunen (2003) carried out a thematic analysis of video data from five families who received between two and ten sessions of VIG. The families were considered low to moderate risk and VIG was provided as an early intervention to prevent difficulties becoming more complex and enduring. Haggman-Laitila et al. (2003) cite a number of benefits including positive change in parents' views of their children, more positive interactions between parents and their children, parents discovering set of new skills, gaining new perspectives and being sensitive to their children's needs.

Haggman-Laitila et al. (2003) attempt to outline the process of thematic analysis the data underwent but it was not always clear how they reached their conclusions of perceived benefits. Additionally, despite intervention length being considerably different for each family, the authors do not provide information on what video data was analysed for each family. As video was available from throughout the intervention the reader is left unclear whether a pre-post comparison was used or an end point only assessment. When considering the benefits described is it important to note while there were originally ninety-two families in the project, only twenty of these gave consent to participate in the research and from that group only five completed work and were therefore included in the data. No comment was made on this high attrition rate or why so few families opted into the research strand. It is therefore difficult to conclude that these benefits would have been replicated throughout their sample.

Sluckin (1998) uses two case studies to explore the use of VIG with mothers who have severe PND and have not 'bonded' with their babies. He provides mainly a narrative account and limited information is given in terms of methodology which led to the conclusions presented. Sluckin (1998), who delivered the intervention, claims that maternal behaviour pre and post-intervention was increasingly sensitive to their children's needs, leading to a more positive relationship between mother and child. Quotes from parents attribute these changes to discussions with Sluckin during video shared review sessions, "It's mind blowing in changing my perception of myself….What I'm thinking and reacting inside is so different from what I see (Sluckin, 1998, p. 22)." The mothers in this study however were also exposed to a combination of art therapy and systems theory therapy which again makes it difficult to determine the unique contribution of VIG.

Brief narrative case studies are presented by Celebi (2014a, 2014b), who is a qualified advanced VIG supervisor. The case studies are of mothers referred to the Oxford Parent Infant Project either by a professional or self-referral, with the aim of increasing positive attachments between young children and their carers. VIG is delivered as part of a group intervention programme. The case studies provided are

narrative vignettes, which illustrate examples of positive changes in the group of mothers. Changes include maternal sensitivity in responding to their infants, increased accuracy in parental perception of their infants needs and communication, improvement in parent mood or confidence in their parenting ability. The project appears to be successful for the parents involved. It has the potential to collect a rich range of data sources which would add to the evidence base for VIG, however the papers presented thus far by Celebi (2014a, 2014b) provide limited information on the participants or evaluation data.

Hynd and Khan (2004) present a discourse analysis of interview data and audio transcripts from VIG shared review sessions of two mothers with PND. The 2004 report refers to unpublished research carried out as part of an undergraduate psychology thesis and therefore it is not possible to review the rigour of the methodology employed in the original study.

Hynd and Khan (2004) report that the intervention allowed a shift in narrative to a more positive self-image during a period the client was experiencing PND. They suggest that it is the subtle narrative exchanges during VIG that set it apart from deficit oriented therapies and the focus on small units of behavioural analysis that distinguish it from solution-focussed interventions. They conclude that "we are left with the conviction that it is a useful and positive intervention to use" (Hynd & Khan, 2004, p.741).

In the studies that have been reviewed thus far which use VIG within families to support parenting and promote healthy relationships, there are a number of common methodological concerns. The majority of studies reported do not employ a control group and rely on pre-post data with the same clients, normally without establishing a baseline before intervention (Celebi, 2014a, 2014b; Gromski, 2011, Haggman-Laitila et al., 2003, Hynd and Khan, 2004; Macdonald, 2014; Rackett & Macdonald, in press; Simpson, Forsyth & Kennedy, 1995; Sluckin, 1998). The outcome measures in some of the studies are often self-report by either the client or professional which are not triangulated with other measures (Celebi, 2014a, 2014b;

Hynd & Khan, 2004; Rackett & Macdonald, in press; Sluckin, 1998). Given that video data is recorded as part of the intervention it seems like a missed opportunity not to make better use of this for evaluation purposes. Some of the studies also use VIG as one part of a larger programme of support and no attempts are made to extrapolate the unique contribution made by this element (Celebi, 2014a, 2014b; Gromski, 2011; Rackett & Macdonald, in press; Robertson & Kennedy, 2009).

Finally in the majority of studies the VIG intervention is either delivered by the authors (Celebi, 2014a, 2014b; Rackett & Macdonald, in press; Simpson, Forsyth & Kennedy, 1995; Sluckin, 1998) or does not specify who delivered the intervention (Haggman-Laitila et al., 2003) which raises potential issues about researcher bias. Gromski (2011) and Macdonald (2014) appear unique in that the authors had a clear research function without being involved in the delivery of the intervention. It should be noted that in both these studies the analysis of video data provided more challenge than support to the hypothesis that VIG directly impacts on behavioural changes. While funding may be a potential barrier, the evidence based would possibly have greater credibility if more studies involved external researchers who were not involved in the delivery of the intervention.

1.442 VIG in Family Contexts with Children with an ASN

While the majority of studies of VIG work in families address parenting and attachment concerns, a number of convincing case studies explore the use of VIG in families of children with disabilities. James et al. (2013) report a robust case series study of three families with clear outcome measures. Three parents of children with HI received a VIG intervention of between two and three shared reviews. James who delivered the intervention is a qualified advanced VIG supervisor. James et al. (2013) present a brief literature to highlight that children's speech and language development after receiving cochlear implants is associated with parental sensitivity. Data was collected pre-intervention and 8 weeks post-intervention. Measures included parental report, child development measures as well as video observation of a free play session between parent and child.

Parents were more responsive to their children in all three cases. There was an eradication of non-responses to their children's initiatives seen in the baseline phase. Furthermore these changes were maintained at follow up assessment. Parents reported achieving their goals from the intervention and were positive about their experience. There were no changes in the children's general development using the developmental measure used however the authors concede that the test manufacturers do not advise retesting within a six month period so the measure is likely to not have been suitable for use. This is the only study reviewed this far that collected data following a post-intervention lag. It would be of interest to follow up after an even longer time period to see if these gains were sustained as well as identifying an appropriate instrument to measure the impact on child development.

Gibson (2013) uses a single case study of a mother and her five year old child with autism to construct a rich, robust and detailed account of the use of a VIG intervention. At the time Gibson was a stage one trainee VIG guider. The mother received four shared review sessions and the father was present in one of the sessions. Pre and post parent interviews and films of the mother and child taken at session were subject to a thematic analysis.

Three key benefits were identified: firstly, the mother was able to identify previously unrecognised communication initiatives from her son; secondly, the mother was able to identify her own parenting strengths in interacting with him; finally, the mother was able to shift perception of her partner's parenting competence to a more positive view. This was supportive to relationship tensions. This study could perhaps have benefitted from quantitative analysis of the existing video data as further evidence for the perceived benefits. While we can imagine the changes reported may have impacted positively on the child, it would have been interesting to have evaluated this in some way.

A similar case study using VIG with a mother and child is presented by Pilnick & James (2013). In this instance the child is eight years old, has HI and ASD and again the mother received four shared review sessions. James who delivered the

intervention is a qualified advanced VIG supervisor. The sessions were delivered with the child's class teacher as an additional client. Part of the video shown is the child interacting with his teacher. This would be considered unusual in VIG work where the primary client, that is the parent, would normally be in all the video footage reviewed. However, it clearly has potential to foster stronger home-school partnerships for the child.

This case is part of a wider study Pilnick & James are involved in and unfortunately for the purposes of this literature review, does not focus on outcome measures to analyse the impact of the intervention on parent and child or even teacher and child. The primary focus for Pilnick & James (2013) is to explore the process around parental change of view by providing a professional narrative interpretation of transcripts of dialogue of shared review sessions. They do however provide evidence of a shift in parental perception in that the mother can recognise moments of successful interaction more readily following the intervention. In parenting a child with complex needs this change is particularly meaningful.

A further study bridging the gap between family and education was undertaken by McCarten (2009). Similarly she expanded the use of VIG with parents and children to include a class teacher. A single case study of a year three boy is detailed. The intervention included seven shared review sessions, based on four films, which comprised a combination of parent only, teacher only and teacher and parents. The intervention was delivered by McCarten, a trainee guider. The study followed an action research design and data was gathered from a range of sources including semi-structured interviews, written reflections and video footage to allow a detailed and robust analysis of the case.

A thematic analysis, which is described in detail, was carried out on the available data with the following key findings. The intervention promoted a collaborative role between parents and the teacher which overcame the parent's initial sense of hopelessness, poor communication between home and school and the negative narratives of blame, either of the child or adult's management of the child.

Increased positive communication was found between teacher and pupil, parents and child as well as child with peers and extended family resulting in a broader and more positive perspective on how the child was viewed. McCarten (2009) concludes that this collaborative use of VIG requires further testing with a larger sample to determine if the positive results found are replicable, but promotes the use of further case study designs.

A study, unique in targeting siblings of children with ASD, instead of parents as clients, was carried out by Loughran (2010). The study involved delivery of five sessions of VIG to siblings of children with ASD and aimed to improve sibling interactions. VIG was delivered by Loughran who was a trainee guider. Three siblings aged eight to twelve were the main participants. Each child had a younger sibling with a formal diagnosis of ASD, one of these siblings also had a diagnosis of severe learning difficulties and communicated non-verbally. Pre and post video data of sibling interactions were analysed. Additionally semi-structured interviews with parents and the sibling client as well as a pre and post standardised questionnaire rating the quality of sibling relationship were carried out with two of the families.

Results of the video data although promising, were ambiguous in areas. Loughran reports a statistically significant difference in the increased use of behaviours described by principles of attuned interactions and guidance, when all behaviours are collapsed, by all three siblings. There was a higher frequency of attuned *initiatives* from all three siblings. However it should be noted there was no improvement, and indeed in one sibling dyad a decrease, in attuned *responses*. Furthermore there was great variation in sibling dyads between areas they showed improvement or regression. Similarly to MacDonald (2014), Loughran (2010) speculates the level of variation could be due to the changes in activities between sessions and across sibling dyads leaving direct comparison problematic. Other areas analysed experienced floor effects with behaviours VIG would aim to extinguish, that is discordant patterns of communication, scoring extremely low pre-intervention. Interview and questionnaire data reveal that families felt VIG improved the quality of sibling relationships. The sibling VIG clients reviewed VIG

as fun and helpful. They enjoyed having their parents share in the review with them and see their positive behaviours being highlighted and celebrated. The parents were able to recognise the skills their children had in interacting with their sibling with ASD which had previously been unnoticed, thus providing them with a new appreciation of their child.

Gibson (2013), James et al. (2013), Loughran (2010) and McCarten (2009) all triangulate a range of measures including self-report and video observations. Therefore while all authors are directly involved in delivering the intervention the range of data sources lead to more compelling conclusions. However only Gibson attempted to measure any direct impact of the intervention on child development. It is suggested the quality of these case studies, with an ASN population in family contexts, and the impact demonstrated provides justification for future researchers and practitioners to attempt to replicate with larger population samples.

1.443 VIG in School Contexts

The studies thus far have reviewed the use of VIG in families for parenting interventions. In a book chapter, Gavine and Forsyth (2011) highlight the extensive use of VIG in schools. Much of the work presented however includes a high number of unpublished studies, including personal correspondence from the current author (Walmsley, 2010a). There is a relative scarcity of published studies in this context, which must be addressed. However studies contributing to the evidence base for VIG in schools are now reviewed.

Fukkink & Tavecchio (2010) carried out a high quality quasi-experimental design involving 95 early years (EY) teachers in the Netherlands. 52 teachers working in one EY setting were allocated to an intervention group and 43 working in another were allocated to a control group. 43 teachers completed the intervention of 4 shared reviews with 9 drop outs due to staff absence or changing jobs. The sessions aimed to focus on the social and emotional support they provide, along with verbal stimulation in their practice with children. Teachers were also followed up at 3 months post-intervention. Outcomes measures included an external assessment of

teachers' interactions with children through observations and rating scales in addition to video observation of teachers' use of principles of attuned interactions and guidance. Additionally, teachers completed self-rating scales of their job satisfaction and perceived competence. Assessors were blind to time of measurement and condition, i.e. experimental or control and stringent inter-rater reliability checks were completed.

A MANCOVA revealed no significant pre-test differences between groups with statistically significant differences found post-intervention (Fukkink & Tavecchio, 2010). Differences equivalent to medium to large effects sizes were found in all key relational measures and significantly, were maintained by the experimental group at the 3 month follow up. This included higher levels of teachers' use of stimulating care giving behaviour in the VIG group. There was also a decrease in authoritarian care giving behaviour, although this did not reach a significant level. Teachers who received VIG also scored significantly more highly in sensitive responsivity and quality of verbal stimulation. Teachers also made significantly more eye contact with children, verbally received their initiatives and allowed children to take turns more frequently. Teachers in the experimental group also rated their skills more highly. There was limited impact on the self-rated job satisfaction measure.

The authors conclude their study provides strong evidence for the effectiveness of VIG as a method of training staff in the early year's sector. The study design is certainly one of the most rigorous published studies using VIG with a large sample. In future research it would be helpful to replicate it with random allocation occurring at level of individual worker rather than family center as there may be additional context factors impinging on staff performance. Future research may focus on the effectiveness of staff with different EY populations and group sizes.

Rautenbach (2010) reported a smaller scale quasi-experimental study which aimed to support the collaboration between home and school and involved three

nurture group staff and a class teacher with four children, aged eight, and their parents. Three of the children were filmed interacting with their parents and the final child was filmed with their teacher. Each received between three and five shared reviews with Rautenbach, who was a trainee guider at the time of delivery. There was a control group of four children identified, matched for age and gender, who also attended the same NG. Commercially available questionnaires were used to compare social and emotional development of both groups of children. Interpretative phenomenological analysis was used to interpret data from semi structured interviews, and consultation meetings with experimental group parents and staff, and a research diary written by Rautenbach throughout the process. Observations of children in the experimental group were also carried out and a further data source was video footage of parent and child interactions.

Rautenbach (2010) argues VIG resulted in improved parent and teacher communication skills including attentiveness, friendliness, listening skills, skills in initiating conversations and receiving initiatives from the child. Furthermore Rautenbach (2010) argues that VIG was an appropriate intervention to support a partnership model between home and school. However qualitative analysis of the questionnaire data comparing child outcomes revealed ambiguous results with one measure favouring the control group and the other the experimental group, although there was considerable variation within groups. It may be that a longer time period would be required for the changes in adults highlighted in this intervention to impact directly on pupil behaviour and well-being.

Brown & Kennedy (2011) present a small case series study using VIG with five primary teachers working in a school for children with SEBN. The teachers each received three VIG sessions based on principles of attuned interactions and guidance as well as Mercer's model of effective classroom dialogue, that is exploratory talk, to support learning (see p.24 & Mercer, 2005, 2010). Videos from the initial and final session were analysed using a computer software package, focussing on teacher goals related to classroom dialogue, for example spending less

time using controlling talk, encourage more dialogue between pupils and support pupils to develop their ideas.

Comparison of pre-post data found that overall teachers reduced the amount of verbal contributions they made. However they increased the number of linking statements encouraging pupils to build on each other's ideas. They also decreased the frequency of information giving statements and requests made to pupils. While teacher talk decreased it was found that pupil talk increased. The children took part in more extended conversations, had less changes of topic and increased the frequency of building on their own or others' ideas. There was also a decrease in conversation described as 'negative' with conflict between pupils. The importance of lesson type to provide pupils with these opportunities was highlighted.

While Brown & Kennedy (2011) have been able to report on the general trends of change that were noted overall in the intervention it is important to highlight that there was great variance between teachers. This was in terms of both baseline skill levels and also in the degree of change achieved. Similarly to Fukkink & Tavecchio (2010) there was no information provided on the pupils in the school. It would have been interesting to have information relating to pupil ages, class sizes and levels of need between classes. It could be suggested that teacher style would perhaps be different as a function on some of these factors.

Another study exploring the use of VIG with pupils with ASN was carried out by Hayes, Richardson, Hindle and Grayson (2011). A group of 10 teaching assistants (TA) working in a secondary 'inclusion unit' participated in the study. The inclusion unit is a base for pupils who could not access either part or their entire timetable, due to SEBN. Pupils were supported in the base with the aim of reintegrating them into the mainstream classes. The TAs each received two shared reviews. Evaluation measures included pre and post participant self-ratings of their confidence and skills and a thematic analysis of focus group discussion.

Hayes et al. (2011) found a significant difference between baseline and post-intervention evaluation of self-ratings of staff skill and confidence in supporting individual pupils, including their return to mainstream classes. In the focus group TAs reported experiencing anxiety about the use of film but finding it a helpful experience when they did. TAs were able to reflect on pupil development, demonstrated awareness of behavior management strategies and were conscious of adaptation of new behavior patterns. However, they reported that they didn't think it translated into whole class contexts and described the one-to-one setting VIG was carried out in as removed from normal practice.

This study would be of particular interest to time limited educational psychologists as change was reported after only two cycles of VIG. It is possible that a third cycle could have been carried out with the TAs in a whole class setting to encourage them to generalise the skills developed in a one-to-one context to the more challenging small group or whole class context. The initial anxieties of the staff involved in this study highlight the need for careful and sensitive planning when introducing this approach. Further research in this area would benefit from seeking the views of the pupils involved and a more robust research design could seek to include objective measures of change in skill level of staff, for example through observation of their practice.

Working in an ASN context with a single case study, Collins & James (2011) describe their work involving a teacher for the deaf and an eight year old primary pupil with HI and ADHD, who was also receiving services for ASD. The focus of the evaluation is two transcripts from shared review sessions as part of this clinical work. Collins and James (2011) suggest the process of change analysed through the shared review dialogue shows features of a 'transformative learning process.' The teacher was seen to change her presentation from stressed to excited and hopeful. It was reported there was a significant impact on her self-confidence in her role as teacher for the deaf and also as a guide and support for the child's family. The study was primarily concerned with the process of triggers of change in the shared review and explores this area closely by narrating the shared review dialogue in great detail.

The study therefore did not analyse the impact of the intervention directly on teacher practice of on the child.

While Brown and Kennedy (2011), Collins and James (2011), Hayes et al. (2011), and Rautenbach (2010) focused on staff working with pupils with ASN, Kaye, Forsyth & Simpson (2000) use VIG in a more mainstream school context. They conducted a detailed and focused study with 5 primary teachers. The mainstream teachers each received 4 shared review sessions concentrating on their interactions in a whole class settings. The first and final video sessions were analysed for teacher skills and interactions and the cohort was also followed up 10 weeks post-intervention. Additionally the teachers participated in semi-structured interviews and completed questionnaire self-rating measures.

The baseline videos assessed the teachers as highly attuned to their pupils with teachers being in the 'yes cycle' with pupils 89% of the time. Ceiling levels appear to have been established and significant pre and post differences were only found for one teacher. Responding to pupils' initiatives received variable responses with three teachers demonstrating positive changes, one teacher no change and the final teacher showed a decrease in this behaviour. Interview data suggests that class teachers' attribution of their classes changed from more external features to controllable within teacher factors. The authors conclude that the activities undertaken by classes were diverse which they believe contributed to the variable results produced. These results demonstrates the challenges of establishing stable, baseline across group conditions in the lively, dynamic context of a schools.

A review of the literature in VIG has revealed that the majority of studies involve parent or other adult-child relationships where the adult is the client, although the focus of concern is usually the child. The final four studies to be reviewed in this section differ in focus from the others presented thus far, in that that client taking part in the shared review is the child. Mussett (2014) describes his recent work of using VIG in a schools project in Scotland to support pupils' participation in group work lessons. Fifteen classes across four primary schools

participated, with nine being selected for VIG intervention and the other six acting as controls over the course of an academic year. Classes ranged from P3-P6. The VIG intervention involved working in their natural classroom environments, in small groups, with each group being recorded for part of the lesson. A 30-60 minute shared review, delivered by Mussett, was then carried out on a whole class basis, which included footage of all groups. The film clips were again shown to pupils on a subsequent date by the class teacher prior to further filming. Class teachers were not VIG trained so this additional viewing was not a shared review. Curricular focus for the group work lessons varied at teacher discretion. Pre and post measures of pupils' self-esteem in relation to learning, peer assessment of group working behaviours and pupil views of the project were collected. Teachers' views were gathered informally. Finally, analysis from a sample of video clips from four groups within experimental classes was carried out.

Significant differences post intervention were found in the self-esteem measure between experimental and control groups in favour of the former (Mussett, 2014). Peer assessment ratings of pupil communication skills, reflecting VIG principles of attuned interactions and guidance and group work skills, increased for all groups of children. However, surprisingly they increased to a significantly greater extent for control groups compared to experimental groups. A further questionnaire, completed only by experimental groups, rating how well pupils had worked together as a group was completed pre and post-intervention. Results showed a significant difference pre and post-intervention, with the younger classes making the greatest gains.

Children in the experimental classes were asked "did VIG help your group work?" The majority of pupils responded positively, however over 20% said no, although this result was skewed by a small number of classes where around 50% of pupils provided a negative response. This may be explained by feedback from some pupils that they did not enjoy seeing themselves on video and generally felt self-conscious. All teachers reported positively on the intervention and felt it was of benefit to the pupils. A sample of video analysis provided largely inconclusive

results although there was some evidence to support decreased use of closed questioning and an increase in open questions over the course of the year. For other behaviour measures again there was a high degree of variability which does not allow any clear conclusions to be drawn. Musset (2014) attributes variability to the different types of lessons pupils participated in, which did not all lend themselves equally to quality group work discussion.

Landor et al. (2007) report on an action research project involving fourteen children aged six to eleven. VIG was adapted to support the delivery and feedback of dynamic assessments to children where there were concerns regarding their learning, with the child therefore becoming the client. A thematic analysis of questionnaire results pre and post-intervention for pupils and their teachers using computerised and manual methods was conducted. Results indicated that both pupils and their teachers reported positive changes following dynamic assessment feedback using VIG. Landor et al. (2007, p.2) argue that some of the change in this process arises through self-modelling; however "more lasting change takes place when the child has a chance to reflect at a meta-cognitive level and to develop a new deeper understanding of their own learning process".

There was no attempt made to record or analyse any objective measures of change. Indeed almost every teacher made comments about the lack of change in relation to the concerns regarding the children's learning. This is not necessarily problematic if changes in academic performance are not a goal of the intervention. The role of the teacher in the process is also questioned as children appeared to feel more comfortable with their teacher not present while on the other hand more positive change could be brought about if the teacher was present at the feedback and able to support application or new learning or strategies in the class context.

Using VIG with a smaller sample, MacCallum (2013) focussed on two year five peer reading mentors to help support their mentoring of two year three pupils. The pupils took part in six paired reading sessions and the mentors participated in three shared review sessions with MacCallum, who was a trainee EP and VIG guider

at the time of delivering the intervention. A thematic analysis was carried out of transcription data from shared review sessions.

The mentors demonstrated reflective practice and self-evaluation during shared reviews and viewed the video as a learning tool for self-improvement. It was noted that one of the mentors was initially anxious about seeing himself on film, although this was alleviated by the end of the first shared review. They also both demonstrated knowledge of body language and were able to identify their own positive behaviours on film which would lead to a more attuned interaction. Furthermore they were able to identify times they performed specific mentoring skills, for example scaffolding mentees performance and providing positive feedback. Limitations of this study would be lack of feedback from the mentees or class teachers on their experience of this intervention. It would also be helpful to know whether these changes in mentors impacted on their behaviour during paired reading sessions with their mentees.

The final study to be reviewed is an earlier project by the author, Walmsley (2010b), which in many ways could be considered a pilot for the research described in this thesis. Walmsley used an experimental, multiple baseline across participants AB design (Todman & Dugard, 1999; Dugard, File & Todman, 2011) to explore the use of VIG in supporting pupils during cooperative learning lessons over a seven week period. Two groups of four primary pupils, from the same class, participated in this study. Group one received weekly VIG shared review sessions starting after week three, and group two after week four, to attempt to allow a stable baseline scoring to be established. Shared review focussed on working effectively as a group and effective dialogue to promote learning in group work. Video data of the pupils participating in cooperative learning lessons across seven weeks was coded for specific dialogue and interaction type by two independent RDOs, who were blind to timing of the data. Additionally, pupils completed questionnaires post-intervention whilst all pupils in the class, twenty four in total, completed pre-intervention questionnaire measures of classroom ethos and ratings of group work skills.

Walmsley (2010b) argued that her results indicated that VIG was a promising method in schools with pupil clients. Post-intervention, the pupils who received VIG rated the intervention positively and felt that it helped their groups work better together. They were also able to clearly identify the strengths of their group as well as future working points. Measures of classroom ethos and pupil self-rating of group work skills pre-intervention indicated that while there was a reasonable baseline of skills and learning environment, there was room for further development. Surprisingly groups achieved extremely high on-task rates; ceiling levels were established in the baseline phase and maintained post-intervention. Percentage of data points exceeding the mean (PEM) scores showed reasonable effects in both groups of time pupils spent interacting with peers post-intervention, compared to working independently, with the class teacher or other peers in class. Frequency of use of key dialogue types was low for both groups. However percentage of non-overlapping data points (PND) scores showed a moderate effect for one group in the increased use of 'propositions' and in the use of 'explanations' in the other group.

Walmsley (2010b) recommended improved technology and other measures to allow more unobtrusive filming in natural classroom settings. Ceiling levels of on-task behaviour may have been due to presence of researcher filming in close proximity and changed behaviour of the class teacher. Similarly to previous researchers, for example Kaye et al. (2000), Musset (2014) and MacDonald (2014), Walmsley recommends consistency of activity type across films to allow more stable patterns of interactions to be established. She provides further guidance for future researchers considering classroom dialogue, echoed by Brown and Kennedy (2011), namely that in school settings the type of curricular area should be careful considered. That is, it should be challenging enough to provide pupils opportunity to engage in high level dialogue. Finally the coding schedule for dialogue, derived from SPRinG (Blatchford et al. 2003) and ScotSPRinG studies (Christie et al., 2009), was extremely problematic to use and required extensive practice to reach an acceptable levels of inter-rater reliability. It is difficult to see how this could have been accurately used by previous researchers without the benefit of video data that can be replayed as required. Walmsley (2010b) advises future researchers to

consider collapsing some of the codes to create a more focussed and user-friendly schedule. Finally the inclusion of teachers' views on the intervention and also their ratings of pupil skills to triangulate data would be a useful inclusion.

Similarly to studies exploring VIG in family contexts, in all of studies reported in this section, with the exception of Fukkink and Tavecchio (2010), the intervention is delivered by one or more of the authors. However the majority of studies do attempt to triangulate data sources therefore allowing the reader to be more confident in the conclusions reached. Furthermore Walmsley (2010b) provides details of two external coders who blind rated the video data, therefore further reducing the potential bias in dual role of researcher and VIG guider. Some of the studies have highlighted challenges in natural classroom contexts of establishing consistent conditions across sessions due to varying lesson types (Kaye et al. 2000; Musset, 2014; MacDonald, 2014; Walmsley, 2010b) which must be addressed in any future research. Perhaps due to the development of VIG originally within the context of family work, it is also clear that while VIG is also now widely practiced in school contexts, there are relatively few research studies in this setting. This literature review has also revealed there are only four available studies, including earlier work by this author which explores the use of VIG with pupil clients.

1.45 Summary

VIG interventions have been used for a diverse range of purposes across two main contexts, family and education, as demonstrated in this review which has included all available published studies and doctoral theses. The number of the studies, particularly in family contexts, relied predominantly on participant self-report evaluation measures with no attempt to triangulate this with other data sources. Given that video data is captured as part of this intervention it has been highlighted that it is a missed opportunity not to analyse this for any behavioural changes. Furthermore even when studies do report on a variety of measures it was the minority of studies that attempted to measure any impact the potential changes in adult attitude or behaviours had on the child's development (e.g. Gibson, 2013). Arguably this secondary impact may only be realised in the longer term but again in

the large majority of studies there was no follow up beyond the end of the intervention.

Other methodological weaknesses or small sample sizes also resulted in difficulty in generalising conclusions reached in individual studies. For example, few studies used a control group or established stable baseline measures pre-intervention, and others ran alongside concurrent interventions without any attempt to extrapolate the specific contribution VIG may have made to any overall changes. Furthermore there was a range of number of shared review sessions delivered across studies, ranging from two to seven, with few studies attempting to identify at which point change may occur. Finally in the majority of studies the intervention is also delivered by the researcher, with few studies (e.g. Walmsley, 2010b) using independent coders for any of the data, therefore introducing possible researcher bias. However, despite these limitations, there are clearly promising findings emerging which would justify interest from practitioners and researchers in VIG.

While we know VIG is widely used in schools and with children, it is an area largely unstudied in formal evaluations, particularly the use of VIG with children as clients. Whilst professionals involved in using VIG in schools and with children are passionate and optimistic about its potential, this area would clearly benefit from the development of a more robust evidence base to justify practice decisions and support clinical judgement. This author therefore strongly supports the call by Fukkink, Kennedy and Todd (2011) for the need for further research, particularly those with high quality robust experimental designs.

1.5 RESEARCH QUESTIONS

The first section of the literature review highlighted that while group work methodologies are promoted as effective teaching tools, their implementation in schools can be problematic. The review did however identify lessons learned in order to optimise group learning. This would include a robust training programme for staff following an evidence based methodology, for example cooperative learning. Staff training should include structuring and planning appropriate lessons

as well as constructing optimal groups, for example mixed gender and ability levels as well as a group maximum of four pupils.

Key areas of concern identified in delivering group work however included high level of conflict within groups, all group members actively participating and low quality dialogue resulting in limited impact on learning. There was a strong call from a range of researchers and developers of group work approaches for pupils to be actively supported to develop the appropriate skills, including high level dialoguing, to be able to effectively participate in group work lessons.

VIG has been demonstrated to be an emerging methodology to support the development of communication and relationships in a range of contexts. However as it was originally developed for use within family contexts, the majority of the research is also within this domain. The evidence base for this intervention, particularly in school contexts, with children as clients, is not yet robust and therefore requires further development.

This study builds on the work of Walmsley (2010b) and uses VIG to attempt to support pupils' participation in group work lessons, in real classroom settings. This was both in terms of pupil relationships and reducing conflict and also to increase the frequency of quality dialogue. This author is the first to formally evaluate the use of VIG with groups of children as clients. Therefore in order to evaluate the impact of using VIG on pupils' participation in group work lessons, the following research questions were developed:

- Does video feedback of group work lessons, involving discussion and reasoning, lead to improvements in measures of pupils' participation in group work lessons?
- What are the teacher's views on the impact of video feedback on pupils' participation in group work?
- What are the pupils' views on the impact of video feedback on their participation in group work?

- Is it possible to identify an optimal number of video shared review sessions for promoting change?

While similar practice in the use of VIG is reported in practitioner forums the research, in terms of the first three research questions, is original to this thesis. The final question attempts to address a gap across the existing evidence base and is crucial to policy makers as it could have a direct impact on intervention costs. The use of objective behaviour measures, in this case areas of pupil participation, in addition to client perspectives addresses in part methodological weaknesses in other studies.

PART 2

CHAPTER 2 METHODOLOGY

2.1 STUDY AND DESIGN OVERVIEW

This thesis reports the findings from two studies which aim to explore the impact of a novel application of VIG with groups of pupils, across three different primary schools. The study employs a small-N experimental design, specifically a multiple baseline across participants AB design (Todman & Dugard, 1999) and the intervention starting point was randomised. Three groups of four pupils received the intervention. Mixed methods are used in both studies to collect and analyse a rich range of data sources, including video footage and video transcriptions, questionnaires, interviews and focus groups, to attempt to comprehensively address the research questions posed.

Study one comprises three sections, which overall aim to answer all four research questions. Study two also comprises three sections and aims to contribute to research questions one and four. Further design and procedural information will be provided in each subsection.

2.2 ETHICS

All parts of this study were conducted in accordance with the British Psychological Society's code of ethical conduct (BPS, 2009). Ethical approval was granted by University of Strathclyde, Psychology Department Ethics Committee and also X Council, Psychological Service Ethics Committee.

All pupils participating in the studies, along with their parents, provided informed written consent on an 'opt in' basis, after receiving an information sheet and consent form distributed by class teachers (Appendix 2). The pupils were also briefed verbally by the author during a classroom visit, to reinforce the content of the consent form and remind pupils that they could withdraw at anytime during the process. Teachers participating in the studies received the same information sheet

along with written supplementary information (Appendix 3) outlining what would be required from them. Furthermore teachers attended a pre-study briefing meeting with the author. The teachers provided verbal consent for their participation which was recorded in a shared minute of the meeting. The EPs participating in Study 2 provided written consent in email form following an email request from the author.

Data from questionnaires, focus groups, interviews and coding sheets from the video observations were stored securely and the results anonymised so that no pupil or teacher could be identified. Permission however was sought to use video footage of the pupils, if required, at a later date for training purposes. During filming, attempts were made to only capture the main participants from each class. As well as meeting the ethical standards required for research, the secure storage of data also meets the requirements of the Data Protection Act (Scottish Executive, 1998).

2.3 PARTICIPANTS AND RECRUITMENT

2.31 Local Authority Context

The local authority X (LA X) in which this study takes part is located within the central belt of Scotland. When this study was implemented LA X had a population of over 300000, just over one third of which were in the age range 0-24 (http://www.gro-scotland.gov.uk/). It is the fifth most densely populated LA in Scotland, containing a combination of six larger urban areas and many rural village populations. It is the second most deprived LA in Scotland with 10.2% of the most deprived data zones in Scotland and 5.5% of the most severely deprived areas in Scotland (http://simd.scotland.gov.uk/publication-2012/).

LA X is responsible for over 120 primary schools, 90 nursery settings, 20 secondary schools and a further 12 specialist education settings. Additionally there are independent schools and nursery establishments located in LA X. LA data indicated that 22.7% of primary pupils and 17.6% of secondary pupils were in receipt of free school meals and 26.1% of primary pupils and 21.2% of secondary pupils

were in receipt of clothing and footwear grants, all of which is above the Scottish average.

2.32 Schools and Teachers

The head teachers of five primary schools, in the local authority in which the author was employed as an educational psychologist, were approached to take part in this project. Four head teachers gave their consent to be involved in this study. The fifth school had recently been inspected and the head teacher opted out of the study in order to focus on the action plan arising from the inspection.

The remaining four head teachers were asked to identify a primary six class to take part in the project where they judged a class teacher was able to competently deliver group work lessons. An upper primary group was the age range identified to be most appropriate for this research. This was due to two main reasons. Firstly the use of group work within primary schools is more readily practiced compared to secondary schools. Secondly as there is lack of published research using a VIG with children it was judged that attempting to use the intervention with young children would be too big a leap from the current evidence base. Primary seven children were ruled out based on practical timetable demands identified in previous research which excluded them from being able to consistently participate in such projects (Walmsley, 2010b).

A further school was excluded at this point when it became known there was only a triple composite class at the stage required for this study, which would severely limit the sample of children in the targeted age group. The other schools also had only composite classes at the primary six stage, although they comprised of just two year groups. Two schools had a primary five/six composite and one school had a primary six/seven composite. It was therefore decided that although permission would be sought for all pupils in these classes, only primary six pupils would be selected to form the group taking part in the main intervention. This was to ensure that the main group of four pupils were matched for stage across all three schools.

A final stipulation was that each of the class teachers would be willing to take part in this study and were not coerced by their head teacher. Although the class teachers were not recipients of the intervention, they were asked to provide information through questionnaires and interviews. They were also subject to a number of conditions in terms of requirements of the study.

2.33 Pupils

All pupils within each class who had permission to participate in this project completed questionnaires to provide information on the classroom ethos. Table 2 outlines information on the permission rates for the three classes in the study.

Table 2. Pupil Permission Information

Class	No. of pupils in class	No. of permission slips returned	No. of pupils with permission	Pupils with permission as % of whole class
1	25	8	8	32%
2	25	9	9	36 %
3	24	22	16	67%

Stratified random sampling was used to identify one group of four pupils from each class to take part in the main intervention (Robson, 2002). The pupils were proportionately sampled to try to ensure each group comprised a mix of genders and abilities. It was planned that each group would contain at least one child with an additional support need (ASN) but no more than two children. This was to reflect the balance in a typical mainstream school classroom and in recognition of the published research for the effectiveness of mixed ability groups for a range of group work tasks (Johnson & Johnson, 1989, 1992). For the purposes of this study children were categorised as having additional support needs in accordance with prior school based assessment and identification. Schools included in the study all adopt the local authority policy of staged intervention. Staged intervention refers to the authority's framework to identify and provide support to children who require additional help to access the full school curriculum. Eligibility criteria for recruitment to this study

accepted children for ASN classification where they received additional support in line with staged intervention at level two or above. Level two refers to pupils receiving additional support over and above that which can be provided by their class teacher (level one). From the sample selected the nature of the identified ASN included a SEBN, LD or English as an additional language (EAL).

Names were drawn from a hat and where no child with an ASN was drawn, the fourth pupil would continue to be reselected until a pupil with an ASN was chosen. If more than two pupils with an ASN were chosen, the last name selected was discarded and the draw continued until two children without an ASN were selected. It was also intended that each group would comprise of at least one male and one female pupil. The same process described for ASN sampling was employed when necessary in order to meet the gender balance criteria specified in this study. However, in one class, all positive consent forms at the primary six stage were for male pupils, therefore one group comprises of all males. Information on the four main participants selected from each class is presented in Table 3.

Table 3. Participant Information

Class	Male: Female	Nature of ASN
1	2:2	1 pupil SEBN (female)
2	4:0	1 pupil SEBN, 1 pupil LD (both male)
3	2:2	1 pupil SEBN, 1 pupil EAL (both male)

Information about gender ratio and number of pupils with an ASN to help contextualise the classrooms is presented in Table 4.

Table 4. Class Information

Class	No of pupils	Male: Female	No pupils with ASN
1	25	13:12	3
2	25	17: 8	7
3	24	10:14	5

Attainment levels based on pupils achieving at least their expected levels in maths, reading and writing based on 5-14 levels are presented in Table 5. One school has a lower level of attainment in maths in relation to the Scottish average (Scottish Government, 2011), two schools have lower levels of attainment in reading and two schools have lower levels of attainment in writing. Also included in Table 5 is attendance data and percentage free school meal entitlement for each school. It can be seen that all schools have a higher percentage free school meal entitlement in comparison to the Scottish national average (Scottish Government, 2011). The attendance levels are broadly similar to the national average. During the studies overall attendance for the targeted pupils was an average of 94.7% but this ranged from 90.9% to 97.7%.

Table 5. School Information

Class	Attainment Maths	Attainment Reading	Attainment Writing	Attendance	% free school meals
1	85.9 %	84.7 %	71.8 %	93.7 %	20.7 %
2	88.5 %	70.5 %	84.6 %	94.6 %	29 %
3	92.8 %	86.7 %	74.7 %	95.6 %	21 %
Scottish Average	88 %	86 %	79 %	94.9 %	19.8 %

2.34 Educational Psychologists

The final participants to highlight were a group of four experienced EPs, including 3 senior EPs, working in the local authority in which the research took place. The EPs were not key participants in the intervention but took part in the evaluation described in Study 2. All EPs had a minimum of 15 years' experience as Chartered Psychologists and were registered with the Health Professions Council. Two EPs were undertaking VIG training. All EPs had extensive experience of pupil and classroom observations.

2.4 INSTRUMENTATION

2.41 S-TOP Rating Scale

The S-TOP rating scale is a non-standardised instrument that was developed for the SPRinG project (Blatchford et al. 2003) to measure features of classroom

contexts which research suggests are linked to effective group work. 32 items on the scale provide information on the following four themes: 'role of adults,' 'learning contexts,' 'activities and tasks,' and 'group work interactions and skills.' For learning context there were four items corresponding to this theme, seven items for activities and tasks, ten relating to the role of adults and eleven for group work interactions and skills. Learning contexts relates to the structural features of the classroom, for example seating arrangements. Activities and tasks could be defined as the structure of the lessons as well as the materials or resources used. The role of adults refers to the tasks the teacher engages in during a group work lesson. Finally, group work skills measures pupils' behaviour during group work lessons.

Analysis of reliability for the four subscales produced Cronbach α indices of between 0.67 for learning contexts up to 0.87 for group work skills and interactions (Christie et. al 2009). A reliability of 0.70 or higher is normally the accepted standard when considering whether or not to use an instrument Bland and Attman (1997). However given this tool was used as a self-evaluation tool for teachers only, with no subsequent analysis carried out in this current research project, the reliability was judged sufficient for this purpose.

2.42 Social Inclusion Survey

The Social Inclusion Survey (SIS) (Frederickson, 1994) is a socio-metric measure designed to gauge the level of social acceptance of individual pupils by their peer group. It identifies pupils as being 'popular,' 'average' or 'rejected' by their peers in relation to two contexts within their current class; 'working with' and 'playing with.' While this measure can broadly classify how pupils are included within their classroom it does not provide any causal information as to why they are viewed in a particular way. The measure uses a forced-choice format in which children are given the list of their classmates' names in alphabetical order. The children rate their peers using a happy, neutral or sad face on the two domains described above. They also have a question mark to indicate if they 'don't know' the classmate well enough to make a choice. Where more than half the classmates choose a happy face, the pupil is classified as 'popular.' If more than half choose the

sad face, they are classified as 'rejected.' Pupils falling in between these markers are classed as 'average.'

Frederickson and Furnham (1998a) found that out of a sample of 12 similar classification systems the SIS had the highest test-retest reliability of 0.7 to 0.78 for scores given over a 5 week period. Furthermore Frederickson and Furnham (1998b) found pupils rated their peers differently depending on the specific context being asked about, that is work or play. This suggests that this measure can tap into specific views of pupils in particular contexts and not just a pupil's general likeability. The SIS therefore can provide useful information on how the participants' classmates feel about working with them as well as socialising with them.

2.43 My Class Inventory-Short Form

My Class Inventory-Short Form (MCI-SF) (Fraser and Fisher, 1983) is included to survey pupils' perceptions of their actual and preferred classroom learning environments. The MCI-SF is a 25 item questionnaire designed to provide a measure of the following five scales; cohesiveness, friction, difficulty, satisfaction and competition within a classroom. For each of the 25 items, pupils circle 'yes' or 'no' to indicate whether or not they agree with the statement. Each response is then scored according to the specified marking criteria with '1' or '3' points. Each of the five scales has a total possible score of 15 points. There is no overall score for the whole test.

The scales of cohesiveness (the extent students know, help and are friendly to each other), friction (the extent of tension and quarrelling amongst students), satisfaction (the extent to which students like their class), difficulty (pupils' perception of level of challenge of class work) and competition (the extent to which the students perceive an atmosphere of competition in a classroom) are all known to be important influences on classroom conditions associated with effective group work (Johnson and Johnson, 1989).

Fraser and Fisher (1986) report that the instrument has a concurrent validity coefficient of between 0.91 and 0.97 with the original MCI long form. Previous research on the reliability of the measure, using Australian school populations, has reported internal consistency coefficients of lows ranging from 0.58 to 0.64, to highs ranging from 0.78 to 0.93 (Sink & Spencer, 2005). Estimates of the variance of the measure used to discriminate between class membership ranges from eta^2 0.15 and 0.28. As one of a range of measures, it was deemed useful for this project.

2.44 Cooperative Learning Evaluation Form for Teachers

The Cooperative Learning Evaluation Form for Teachers (CLEFT) (Topping, 2005) was included as a measure of teacher evaluation of pupils' group work skills. It is a 17 item questionnaire asking teachers to rate the frequency of observed behaviours as 'almost never,' 'sometimes' or 'very often.' To score the CLEFT, the frequency descriptors that is 'almost never,' 'sometimes' and 'very often' were allocated a numerical ordinal value of 1, 2 and 3 respectively. A score of three represents the highest possible self-reported frequency for each of the 17 different skills and 1 the lowest possible frequency. A total group work skills score for each group was generated by the sum of each questionnaire item giving a score range of 17 to 51.

The CLEFT was developed by Topping (2005) and was used as a measure in the published ScotSPRinG studies. There are no reliability or validity statistics published for this measure. Given the lack of statistical data for this measurement, findings need to be interpreted with caution. The decision to include the measure in this study was made in part due to the lack of alternative standardised tools to measure teachers' evaluations of the group work skills of their pupils.

2.45 Teacher Interview Schedule

The teacher interview was semi-structured with verbally administered open questions (see Appendix 4 for interview schedule). To trial the interview, the author conducted two mock interviews with teachers working in the same authority from different schools who were not involved in the project. There were issues with two of the questions producing duplicate answers and confusing the teachers who

struggled to add anything to a previous response. This related to question 2, 'What opportunities do children in your class have to participate in group work?' The original schedule asked firstly about frequency of group work lessons and in a separate question about the variety of curricular areas group work was delivered in. Robson (2002) states interview questions should emerge from previous work and should be distinct from each other. Both these aspects were therefore amalgamated into the one question.

2.46 Focus Group Schedule

A focus group schedule was developed to mirror the questions in the teacher interview (see Appendix 5). Unlike the teacher interview schedule there was no trial undertaken for the focus group. This was due to difficulty identifying a group of children and gaining consent where there would be no direct benefit for the children participating. The schedule however was reviewed by two teachers and following their suggestions re-worded accordingly. An example of this was the original wording of question one; 'Why do you think teachers do group work lessons?' Teachers felt that having the supplementary 'instead of everyone working on their own or having a whole class lesson' would help pupils differentiate group work from other types of learning they may experience in the class.

2.47 Video Observation Schedule

Two coding sheets for video observations were utilised. The first coding sheet (Appendix 6) was developed using a protocol derived from observation schedules in the SPRinG (Blatchford et al., 2003) and ScotSPRinG studies (Christie et. al 2009). This protocol was piloted during an earlier study (Walmsley, 2010b) and developed to focus on the key dialogue measures known to have most impact on learning.

Following analysis of the first coding sheet and completion of study 1 video observation (see Chapter 3.3), a second coding sheet (Appendix 7) was developed. This was informed by feedback from EPs (see Chapter 4.1) who identified key features of effective peer interactions during the group work lessons. These behaviours reflected principles of attuned interaction and match closely with the

principles of attuned interactions and guidance (see Chapter 1.43). The foundation behaviours from the principles of attuned interactions and guidance were therefore selected as a framework for further video observation. Instructions for completing both coding sheets can be found in Appendix 8.

2.5 INTERVENTION PROCEDURE

Each group of pupils participated in a series of group work lessons over the course of eleven consecutive weeks along with their classmates. The lessons were delivered by the class teacher in a format familiar to the pupils. All teachers had received training in Johnson & Johnson's model of cooperative learning (Johnson & Johnson, 1989, 1992), as was the norm for all teachers in LA X. Training available in LA X included at least one half day training for probationer teachers with many teachers having an additional three days training at the 'cooperative learning academy,' as well as further recall days. Furthermore all teachers had participated in training for other models of paired and peer group work through LA X's literacy development programme.

The teachers attended a twilight session with the author, before the study commenced, where the curricular area for the study was mutually agreed. It was requested that the lessons should either focus on maths problem solving or science tasks, to ensure opportunities for high levels of challenge, discussion and reasoning within the lesson. However the teachers indicated that neither of these curricular areas would be possible in this project. This was due to ability set groups for maths, which included pupils from across several classes for whom permission had not been sought and science not being taught in the term the study was due to take place. Therefore the only curricular area available, where there would be whole class lessons conductive to group work, with high levels of discussion and opportunity for reasoning, was Health and Wellbeing.

Health and Wellbeing is one of eight curricular areas from the CfE (Scottish Executive, 2004). However, as well as being a discrete curricular area, Health and Wellbeing is promoted as one of the three main components along with literacy and

numeracy, that is the responsibility of all education practitioners and is expected to be embedded across learning in Scottish schools. Health and Wellbeing encompasses: Mental, Emotional, Social and Physical Wellbeing; Planning for Choices and Changes; Physical Education, Physical Activity and Sport; Food and Health; Substance Misuse; Relationships, Sexual Health and Parenthood. While a number of these elements include experiences that lend themselves to other teaching methodologies, e.g. Physical Education a sufficient number are very well suited to group work pedagogies.

Teachers were asked to distribute information sheets and permission slips to the whole class and encourage slips to be returned. During an initial class visit the class teacher and author drew the names of four pupils to form the targeted group for the study. This was completed using the procedure outlined in participant section. Other groups within the class were then arranged by the class teacher as normal.

Due to the method of analysis that was planned for coded video data, the intervention starting point was randomised (see Chapter 3.3 & 4.2). The intervention could therefore begin anywhere between the third up to the eighth out of a total of eleven sessions giving a possible five different starting points in the baseline phase. This was to allow collection of a minimum of three baseline data points as well as a minimum of three intervention sessions. The teachers were asked to randomly draw numbers between three and eight to indicate when the intervention sessions would begin, for example 'four' would indicate the intervention would begin after four baseline videos had been collected. The first two class teachers selected number five and therefore had five baseline points, while the third class had six.

The class teachers were then asked to deliver a group work lesson once per week focussing on a topic from the agreed curricular area, Health and Wellbeing. The structure of the lesson was informed by the teachers' previous training in cooperative learning and other group work methodologies. Lessons began with a whole class introduction and teaching input where appropriate. A follow-up task relating to the lesson was then given, which was completed in groups lasting a

minimum of 10 minutes. The class were then gathered back as a whole group to complete a lesson plenary. Following recommendations from Walmsley (2010b) the class teachers were instructed to attempt to interact with the group as normally as possible. This included a request not to introduce any additional behaviour management approaches over and above their typical classroom practice.

The class teachers were also asked to self-evaluate their group work lesson once per month during the study, using the S-TOP rating scale. The author also completed this same measure monthly to ensure the quality of teaching during the group work lessons was appropriate. This measure was not utilised for scoring purposes but as a reflection tool for the author and class teachers to ensure the integrity of the group work lessons.

The author or a research and development officer (RDO) filmed the targeted group during the follow up task for a total of ten minutes. Ten minutes were a sufficient amount of time in which to gather film to deliver the VIG intervention and for the planed research purposes. A wireless microphone and digital camcorder were used. A microphone was placed on the centre of the table between the group of four pupils and the receiver was attached to the camcorder. This allowed the person filming to stand unobtrusively in a corner of the class, at least three metres away from the group being filmed. Compared to an earlier study by Walmsley (2010b), there was evidence that the pupils often forgot the camera was present and behaved in a more naturalistic manner, for example swearing and talking about inappropriate topics.

Despite the agreed protocol, a small number of the group tasks did not involve ten minutes of continuous activity but rather were interrupted with the teacher seeking whole class feedback or providing further instruction. This was a result of the teachers monitoring the class during group work activity and observing an aspect of the lesson which they felt required clarification. In these cases filming was stopped and resumed when the group work task restarted to ensure a total of ten minutes video footage of actual targeted group work was collected. In addition, two

dummy films of the group were taken during a general lesson prior to the main study commencing to allow pupils to become familiar with the author and the presence of the video camera.

All VIG interventions were delivered by the author who is a fully qualified 'VIG guider.' For each group when the intervention period commenced, a shared review took place between data collection points. The shared review session was carried out with all four pupils in the group. Pupils identified mainly group working points and in some cases, individual working points if they chose to do so. The pupils were also asked to identify areas they were pleased with. The author recorded pupil generated targets and reviewed them at the beginning of the subsequent shared review session. The filming and shared review sessions continued as long as there were still two or more pupils present each week.

The author attended an "intervision," which is a peer supervision session, with an experienced VIG trainer following the first two intervention sessions. On-going intervisions are an expected part of continual professional development for qualified VIG guiders in order to maintain their skills (Kennedy, 2011). In this study a further aim of the intervision was to ensure the quality and fidelity of the intervention being delivered.

CHAPTER 3 STUDY 1

3.1 CLASSROOM CLIMATE ANALYSIS

3.11 Design

This section involves a survey design. Questionnaire methodology was employed to survey pupil evaluation of their classroom ethos, teacher evaluation of pupils' skills in group work and teacher self-reflection of their own practice. While pupils completed only pre-intervention questionnaires, class teachers were asked to complete a questionnaire pre and post-intervention.

3.12 Procedure

When permission forms were returned the teacher provided the author access to the class for an initial visit of one hour to meet pupils and complete questionnaires. All children in the class with permission to take part in the study completed the SIS and MCI-SF. These were administered on a whole class basis.

Teachers were asked to complete the CLEFT pre and post-intervention to rate the group of four targeted pupils receiving the VIG intervention. The teachers were asked to rate this based on their assessment of the pupils both during the observed group work lessons and also their wider knowledge of pupils' skills from day to day class activities.

3.13 Analysis

Descriptive statistics were utilised to report questionnaire data. Results are presented in table formats in addition to descriptive text. In addition an ANOVA was used to further analyse the results of the MCI questionnaire to test for significant differences between pupils' actual and preferred classroom environment ratings.

3.14 Results

Table 6. presents the results from the MCI-SF questionnaire. The mean class scores for each of the 5 measures of learning environment are reported and range from 5-15. The scores represent the actual (A) class rating of their learning

environment and their ideal or preferred (P) learning environment. A high score for satisfaction and cohesiveness would normally represent a positive rating while the reverse is true for competition and friction. Conceptually it is more complex to determine what an ideal score for 'difficulty' would be although an extreme high or low score is unlikely to reflect an ideal learning environment.

Table 6- My Class Inventory-Short Form Results

Learning Environment Measures		Satisfaction		Friction		Competition		Difficulty		Cohesiveness	
Class		A	P	A	P	A	P	A	P	A	P
1	Mean	11.13	15.00	9.25	5.00	11.50	5.62	7.25	7.50	10.50	14.38
	N	8	8	8	8	8	8	8	8	8	8
	Std. Dev.	2.85	.00	1.98	.00	3.16	.92	1.67	2.07	3.34	.92
	Std. E of M	1.01	.00	.70	.00	1.12	.32	.59	.73	1.18	.32
2	Mean	12.44	13.78	11.00	6.44	12.56	6.44	6.22	7.22	12.44	14.22
	N	9	9	9	9	9	9	9	9	9	9
	Std. Dev.	1.33	1.72	1.73	3.28	2.60	2.79	1.72	1.56	2.40	1.39
	Std. E of M	.44	.57	.58	1.09	.87	.93	.57	.52	.80	.47
3	Mean	9.56	13.81	9.75	6.31	11.94	8.31	6.69	6.94	8.44	12.62
	N	16	16	16	16	16	16	16	16	16	16
	Std. Dev.	3.14	1.60	3.09	1.89	2.82	3.40	2.30	1.88	2.78	2.85
	Std. E of M	.79	.40	.77	.47	.70	.85	.58	.47	.70	.71
Total	Mean	10.73	14.09	9.97	6.03	12.00	7.15	6.70	7.15	10.03	13.48
	N	33	33	33	33	33	33	33	33	33	33
	Std. Dev	2.90	1.49	2.55	2.17	2.78	2.99	1.99	1.81	3.24	2.28
	Std. E of M	.50	.26	.45	.38	.48	.52	.35	.31	.56	.40

An exploratory 3 x 5 x 2 ANOVA was carried out with school class (Class 1 vs. Class 2 vs. Class 3) as the between-group factor and learning environment factors (satisfaction vs. friction vs. competition vs. difficulty vs. cohesiveness) and domain (actual vs. preferred) as repeated measures. However, the results from Levene's Test revealed significant violations of the assumption of homogeneity of variance ($p<.027$). Accordingly, in view of the small number of participants in classes 1 and 2, the analysis was re-run as a 5 x 2 repeated measures ANOVA, collapsing data

from across all 3 classes. Mauchly's Test of Sphericity was significant for the main effect of environment (p=.003) and the Greenhouse-Geisser correction was used. The results revealed a significant main effect of environment ($F_{(2.697, 128)}$ =53.882, p<.001) but no significant main effect of domain ($F_{(1, 32)}$ =1.879, p=.180, ns). However, there was a significant environment x domain interaction ($F_{(4, 128)}$ =45.607, p<.001).

The domain x environment interaction was investigated by means of Bonferroni-corrected repeated measure t-tests which revealed that preferred ratings were significantly higher that actual ratings for satisfaction and cohesiveness (both adjusted p-values<.01) while actual ratings were significantly higher than preferred in the case of friction and competition (both adjusted p-values<.01). There was no difference in domain ratings for difficulty (p=.282).

In the case of the SIS, each of the 33 pupils with permission to participate were rated by their peers for 'play with' and 'work with' giving a total of 66 ratings. The results of frequencies of acceptance ratings are shown in Table 7. The frequencies reported indicate that all 33 pupils participating were rated as accepted or popular by their peers with no pupil being rejected. This was in terms of both acceptability to 'work' and 'play' with a peer.

Table 7- Social Inclusion Survey

	Frequency				Percentage			
	Class 1	Class 2	Class 3	Total	Class 1	Class 2	Class 3	Total
Rejected	0	0	0	0	0%	0%	0%	0%
Accepted	10	7	31	48	63%	39%	97%	66%
Popular	6	11	1	18	37%	61%	3%	34%
Total	16	18	32	66	100%	100%	100%	100%

Finally results from the CLEFT analysis are presented in Table 8. The median pre-intervention score for pupils was 35, rising to 51 post-intervention, which is the highest score possible. This indicates teachers reported an increase in frequency, usually from 'sometimes' to 'very often' for a range of positive group work behaviours.

3.15 Discussion

The results from the SIS measure indicate that no pupils were singled out as being 'rejected' by their peers. However, in classroom climate analysis, the MCI-SF measure did reveal significant differences between pupils' actual ratings of their classrooms and their ideal classrooms. The pupils wished their classes were less competitive and more cohesive with less friction between classmates and held higher levels of satisfaction. The results therefore highlighted the need for improvement in the classroom ethos and provided a rationale for a class intervention. In the term this project was carried out, pupils would normally have been expected to have settled into their classes; particularly given two thirds of the academic year was complete. Furthermore for two of the schools, pupils had been in the same class for at least one additional year prior to the study. Johnson and Johnson (1994, 2009) would suggest that providing pupils with opportunities to regularly participate in cooperative learning lessons, when they can work effectively, could help address classroom climate issues.

Results from the CLEFT measure, where teachers rated the target pupils' group work skills, rose from 35 pre-intervention to a maximum score of 51 post-intervention. This demonstrates a clear positive change in teacher's ratings of pupils' frequency of use of a range of positive group work skills.

Table 8- Cooperative Learning Evaluation Form for Teachers (CLEFT)

Class	Time		Offering information or help if unsure	Clarifying purposes or roles	Asking appropriate questions	Taking turns	Helping everyone to join in	Give partners time to think	Encouraging partners to think out loud	Listening well	Concentrating on aim and task
1	Pre	Score	3	3	2	3	3	3	2	3	2
	Post	Score	3	3	3	3	3	3	3	3	3
2	Pre	Score	2	1	2	2	2	2	1	2	2
	Post	Score	3	3	3	3	3	3	3	3	3
3	Pre	Score	2	2	3	2	1	2	1	2	2
	Post	Score	2	2	2	2	2	1	1	2	2
	Media n	Pre	2	2	2	2	2	2	1	2	2
		Post	3	3	3	3	3	3	3	3	3

Class	Time		Sharing materials + equipment	Sharing the work fairly	Sharing ideas + suggestions	Using quiet voices	Asking for information or help	Negotiating + discussing ideas	Working together to produce new ideas + solutions	Self-assessment	Total score 1-17
1	Pre	Score	3	3	3	2	2	3	2	2	44
	Post	Score	3	3	3	3	3	3	3	3	51
2	Pre	Score	2	2	2	2	1	2	2	1	30
	Post	Score	3	3	3	3	3	3	3	3	51
3	Pre	Score	3	2	2	2	3	3	2	1	35
	Post	Score	3	2	2	3	3	2	2	2	35
	Median	Pre	3	2	2	2	2	3	2	1	35
		Post	3	3	3	3	3	3	3	3	51

3.2 PARTICIPANT EVALUATION OF VIG

3.21 Design

A case study design was employed to gather participant views post intervention, in order to evaluate the acceptability and feasibility of the intervention, as well as any perceived impact.

Focus group methodology was utilised post-intervention to sample the views of the pupils who were the main participants. Interview methodology was employed to gather the views of the teachers in a structured manner.

3.22 Procedure

Each group of four pupils taking part in the main intervention participated in a focus group at the end of the study with the author, who is experienced with this methodology. In focus groups it is important that those taking part feel comfortable and free to express different points of view (Litosseliti, 2003, Kitzinger, 1994). It was therefore emphasised to pupils there was no right or wrong answer and everyone's view was important. The importance of confidentiality for participants was stressed. Prompts, for example, "can you tell me more about that?" "anything else?" and "does anyone else want to add to that?" were employed to encourage full discussion.

Discussions during the focus groups were recorded using an electronic dictaphone and handwritten notes were also taken by the author. The data was then fully transcribed with prompts and repetitions removed to allow a clearer analysis of participants' responses.

Individual interviews with teachers were also conducted post-intervention. The interviews were again recorded using an electronic dictaphone and handwritten notes taken by the author. While recording the interview increases the formality of the process, measures were taken to ensure participants still felt at ease, for example being offered refreshments and engaging in ice breaker conversation before the

interview. The teachers were also reminded of the confidentiality of the interview data.

As with focus group data, the interviews were fully transcribed. The transcriptions did not include any prompts made by the author or repetitions by the interviewees. This was again done in order to make the analysis of interviewee responses clearer.

3.23 Analysis

Content analysis methodology was utilised to analyse the interview and focus group data. Content analysis is a scientific method that became prominent at the start of the 20th century in America and is the fastest growing technique in quantitative research (Neuendorf, 2002). Schreier (2012, p.1) describes content analysis as "a method for describing the meaning of qualitative material in a systematic way." It compresses large amounts of text data into a fewer number of categories based on rigorous and systematic coding of information.

Content analysis methodology was chosen as it supported the study aims which were exploratory rather than attempting to test a priori assumptions or theory. It can also allow for both quantitative and qualitative operations, which is beneficial when frequency of particular content is as important to the researcher as the range and meaning of different categories. Furthermore it a reliable method and can be easily replicated as data is in a permanent form. A criticism of content analysis is that is can be at risk of being overly reductionist. However, Schreier (2012) argues that meaning is not inherent in text and it is the responsibility of the researcher to construct meaning from the data by skilful interpretation whilst following a robust and replicable process.

The content analysis methodology used in this study followed a five-stage process described by Gillham (2000), with similar methodologies described by Neuendorf (2002) and Robson (2000). The content analysis was carried out by hand

without the use of computer software (see Appendix 9). The sampling strategy decided upon was defined as a phase or connected phrases.

Robson (2002) reminds researchers to distinguish between manifest and latent content. For this purpose having a research and development officer as a second rater proved to be essential. Simply by transcribing the data certain statements became ambiguous, for example when a participant used sarcasm or irony. In order to increase reliability it was decided to examine only manifest content, sacrificing some of the quality of the data in the process.

The author and second rater independently highlighted substantive statements in the data. While there were no difficulties between raters in agreeing what should be considered a substantive statement, there was disagreement deciding when to break a phrase. The author suggested connected phrases should be kept together when they build on each other and risk losing the meaning in shorter segments. With this clarification substantive phrases were more accurately identified by both parties with an interrater reliability of 94%. Another source of disagreement was the breadth of categories. The main author selected a larger number of narrow, discreet categories which included some subdivisions, whereas the second rater chose a smaller number of broader themes. In this case, as the author had a greater knowledge of the content and likely reader interest, it was decided to split into smaller categories.

A final source of disagreement arose when deciding on category names. Gillham (2000) suggests however that this is not as important as it may seem. He argues that category labels themselves cannot convey the essential character of the statements they classify. Labels therefore act only as an initial content signpost and could alternatively be labelled 1, 2, 3 or a, b, c and so on. Categories were driven by both themes that emerged from the data and from reflecting on the data provided with the research questions in mind. This was primarily ‘does video feedback of group work lessons involving discussion and reasoning improve measures of pupils’

participation in group work lessons?' And 'what are the teacher and pupil views on the impact of video feedback on pupils' participation in group work?'

3.24 Results

This section begins by reporting themes from the teacher interview and pupil focus groups related to general understanding and use of group work, including participants thoughts about the purpose and benefit of group work, opportunities available to participate in group work, issues relating to groupings and role of the teacher (Figure 2 and Table 9). The second section (Figure 3 and Table 10) discusses group work skills. Finally, the third section presents participant views of the impact of VIG (Figure 4 and Table 11). At the beginning of each section a schematic diagram is presented giving an overview of emerging themes. The questions are in the centre of the diagrams (red), the themes common to teachers and pupils (green), themes only highlighted by pupils (yellow) and themes only highlighted by teachers (blue) are displayed. Tables providing at least one illustrative quote are then presented to aid reader understanding of the theme labels. In the tables pupil themes are presented first, followed by teacher themes. Where both pupils and teachers identified a common theme, the theme label has been highlighted. The frequency of times a theme is raised is recorded under 'F.' As feedback from focus groups are attributed to the group, not individual pupils, this means that the number of times a theme be recorded is a maximum of 3 for both the pupils and teachers.

Figure 2 Use of Group Work

Table 9- Use of Group Work

Purpose of Group Work			
	Theme	F	Illustrative Quote
Pupils Q1	Peer tutoring	3	"Instead of everything going to the teacher you can ask a friend…and they can teach you. We can be good at teaching each other."
	Social skills	2	"I think they're trying to develop your relationships with people…there's lots of jobs where you have to cooperate with people. That's really what it is…preparing us for that."
	Learning	1	"We learn more that way than from other types of lesson."
	Enjoyment	1	"Because they're fun, we like them."
Teachers Q1	Confidence	2	"There are a few children who will not voice their opinions [in whole class lessons] because they're scared of getting it wrong or too shy to speak. But in group work [they're] wee chatty bunnies!"
	Peer tutoring	2	"There were a few really struggling [with a maths task] even after I had spent time with them, so I wanted to set up a group thing to look at different problems and give everyone a role to try and let them learn from each other rather than me telling them."
	Behaviour management	1	"Group work takes them away from their friends as well quite often…when they're with their friends they like to chat. They're often more on-task working outside their comfort zone."
	Social skills	1	"I think there's the social aspect, just learning to take turns, to share, learning to listen to other views, develop empathy."

Opportunities and Planning for Group Work			
	Theme	F	Illustrative Quote
Pupils Q2.	Curricular area	3	"In our castle work [history topic] we get to work in groups for that. Also in PE, ICT, quite a lot with reading too." "In maths we were put into groups of 4 for that."
	Frequency	2	"I think in our class we work with people every day." "We don't get to do it often we only do paired or independent work."
	Sitting in groups	2	"We sit in groups for everything…you're never really on your own learning the whole time…there's always someone sitting next to you who you can talk with and could help your learn."

Teachers Q2 & 4	Curricular area	3	"Across the curriculum really. They do group work in reading tasks, some group writing, maths problem solving, health, really across the full curriculum."
	Frequency	3	"At some point, probably on a daily basis."
	Decision to use	2	"It depends on what you're doing, what you want your outcome to be and if the task can lend itself to group work."
	Sitting in groups	1	"Most of language and maths they sit in ability groups, but when it comes to active maths, language work or topic they work with the groups they sit in."

Groupings			
	Theme	F	Illustrative Quote
Pupils Q4 & 5	Ability	3	"She puts the right people with the right people...you know the right people from the maths group... otherwise we'd be doing the wrong work."-"No that's not right. Sometimes we get to do a maths thing where it's not just people from our maths group it can be people from our desk."
	Behaviour	2	"She picks the people who can work well together instead of carrying on."
	Friends	2	"Well it's more fun [working with friends] and you can get more work done because you know each other and you don't have to worry if they'd make fun of you." "I do like ...when my friend is in my group but I like when you're seeing other people rather than just the people you see every day."
	Random	2	"We've got our names on lollypop sticks and she just picks it out. It makes it fairer that way."
Teachers Q3	Ability	3	"If it's more academic I'd want them all the same ability working together, if it's more talking I'd want to be mixed ability. It just depends on the task."
	Random	2	"If it's cooperative learning you do it randomly, I've used songs from Glee and High School Musical where children have to match up lines to find their group."
	Skills balance	1	"I would try to ensure the group wasn't overbalanced…maybe make sure there's someone in the group who is good at encouraging other people who weren't so good at talking and listening."

Teacher Role			
	Theme	F	Illustrative Quote
Pupils Q6	Help	3	"If you're really stuck she'll come over and help although sometimes she'll tell you to ask your group and …that's what groups are about."
	Corrects work	2	"Sometimes she'll correct jotters if we've got work needing corrected from like earlier."
	Monitoring	1	"She'd just keep coming round and checking." "She checks on us to see if we're working well."
	Behaviour management	1	"She can also give people a row if they're carrying on and just pretending to talk about the work and are really talking about something else."
Teachers Q5	Behaviour management	3	"Make sure they're on-task because before you know it they're talking about Eastenders!" "You go over the rules and keep volume to a minimum."
	Monitoring	2	"Once they're up and running…it's a case of letting them get on with it, take a step back and just check they're ok."
	Help	2	"Trying to make sure they're steered in the right direction." "If they have questions I try to help them."

Teacher Training			
	Theme	F	Illustrative Quote
Teachers Q6	Initial Teacher Training	3	"I suppose teacher training looked at different ways of children learning, group learning comes into that." "It depended what school you were placed in because you had to follow what the class teacher was doing."
	Post qualification training	3	"I did the three day cooperative learning academy, recall day and some other coop courses looking at specific curricular areas." "The…literacy training is really about paired, trio and group work. The training is about how you teach it as well as what we're teaching."
	Other	1	Even before teaching when I worked at X, we looked at team dynamics and setting up roles in teams.

Figure 3 - Group Work Skills

Table 10- Group Work Skills

Perceived Required Skills			
	Theme	F	Illustrative Quote
Pupils Q1	Social	3	"I think they need to know it's not about them really. It's not only about their ideas. They need to be friendly and open and not shrug off others ideas. They need to think maybe that's not the best idea but how can we keep carrying on with that idea and coming up with new ideas from that."
	Behaviour	2	"You need to be mature as well, you can't just have a laugh with somebody. You need to be mature about it…so that you're not just sitting, carrying on and things."
	Confidence	2	Confidence, because if you don't have any confidence you can't put your opinions in and others have loads and loads of ideas…they might start to tease you cause you haven't taken part."
Teachers Q1	Social	3	"I think a lot of it the social skills. Being able to listen, being able to take on board other people's points of view, being able to take turns, being able to understand that other people will have different views…being accepting of other children and their views."
	Confidence	2	"To some extent they need confidence because if they disagree with their peers they need to have the confidence to say that. If a popular member of the class is in the group they will just bow down and say 'we agree with you.'"

Acquiring Group Work Skills			
	Theme	F	Illustrative Quote
Pupils Q3	Practice	2	"You get better just by practicing."
	Feedback	2	"You learn by…when your teacher tells you if you are doing good." "You learn from people's reactions on their faces, you think is this a good reaction or a bad reaction."
	Family	1	"[before school] you've had 4 years with your family so if you do something wrong they'll tell you…they might encourage you but they'll never lie…your family have a big influence on the skills you learn."
	Modelling	1	"Listening in and helping other people and they'll help you and you'll get better at it."
	Intrinsic	1	"Sometimes from P1-P7 you know how to work with each other better. You just like know."

Teachers Q3	Practice	3	"Through…being given the opportunity and the chance to participate. In schools now I think they get that from primary 1 and then right the way through school."
	Taught	3	"They need some sort of guidance from the teacher to see what's expected of them. They need reminded of [lists various group work rules]."

Challenges in Group Work			
	Theme	F	Illustrative Quote
Pupils Q4	Conflict	3	"If you don't get along with people you waste your time arguing." "If 2 people in the group want to be the recorder they'll have an argument and some people will always draw attention to themselves and …it keeps their group back."
	Turn Taking	2	"Sometimes when someone gets a turn they'll spend like 3 minutes talking and other people only talk for a second or they always pass but then there's always someone who's greedy with their turn."
	On-task	1	"It's hard to concentrate so you might stop working and be day dreaming…"-"but they would do that anyway in a lesson"-"but in group work it's noisier cause everyone is talking at the same time."
Teachers Q4	Conflict	3	"There are always a few huffs." "I think there can be a kind of personality clash with groups." "To find constructive ways to put things across without someone taking offence or causing an argument."
	Confidence	2	"The challenge to find your own voice, to find that kind of confidence to be able to disagree."
	Turn Taking	1	"X just sits back and lets everyone else do the work for him….because he's so lazy and laid back." "That's a challenge itself…to let others have their say without butting in."

Figure 4 –Participant Views

Table 11- Participant Views

Strengths of Target Group			
	Theme	F	Illustrative Quote
Pupils Q1	Confidence	2	"I think that one of our strengths is that we're not afraid to talk and we're not afraid to give answers."
	Friendship	2	"We get along, we're all friends."
	Support	1	"See like when we're given our targets, we like support each other. Help to make sure we all reach the targets."
	Communication	1	"I think we're good at communicating with each other." "We listen to each other's point of view."
	Lack of conflict	1	"We don't argue, we sometimes turn round cause we hear other groups going 'naw.'"
Teachers Q1	Communication	2	"Probably listening to others and give each person within the group time and space and the respect of their opinions." "Being articulate and speaking and listening to others."
	Support	2	"Encouraging others." "Quite often X doesn't get the gist of what's being asked of him, he gets a lot of support across the curriculum. I know the group are good at explaining to him."

Changes During VIG Intervention			
	Theme	F	Quote
Pupils Q2.	Confidence	3	"I think the video made us a little bit un-shy." "X wasn't really out there before it started and now you can't get him off the microphone! He's coming out his shell."
	Turn Taking	3	"We're really good at taking turns now cause when we started off I know I was a bit like 'no this is my microphone' I think we are all still a bit like that in a way but now one of our strong points is that everyone gets a turn."
	Support	2	"At first he said 'pass' and he never really said an idea…and we weren't really encouraging him to, so that's something we've really worked on."
	Teamwork	2	"At the start we were just doing it on our own. You know working on our own. Near the end we were all working together." "I think another strength we have is teamwork…we got to know each other better."
	Friendship	2	"When we started off…to be honest we weren't friends…we'd just walk past each other and things but now we'll see each other and say hi or talk in the playground."

	On-task	1	"That helped us because it showed us what we were like. We've stopped fidgeting and we talk about what we're supposed to be talking about more."
	Extending ideas	1	"When we first did our ideas they were one or two words and now they've grown into two sentences…I think when we're giving ideas we don't just leave it at that, we were building on them and making them bigger and better ideas."
Teachers Q2	Resolving conflict	2	"I noticed them having a vote about something. Often X would get his own way and just bulldozed his opinion through the others. Now they seem to be more interested in reaching a consensus." "They've spoken to me about what happens when you disagree with someone else and I think they've become more aware that it's ok to say I don't agree, to be a bit more constructive than to sit there and not say anything because they're very polite."
	Confidence	2	"X is now participating more…previously he was much more hesitant." "X didn't like this at first as they were all able to stand up to him and make sure they all got a say."
	Turn taking	2	"Generally the turn taking was an improvement too. One of them said 'what do you think?' they were actually asking each other whereas before it was just a rabble trying to get all their opinions out."

Transfer of Skills from VIG Intervention			
	Theme	F	Illustrative Quote
Pupils Q3	Confidence	3	"It's confidence. See like when we saw ourselves on camera, I think it gave us more confidence and our confidence grew. Even in things not like work. I mean last week at netball I wanted to play GA and I'm normally WA. I could tell them why I wanted to change and then it was decided I could get a chance of being GA but before I know I wouldn't normally ask in case it was embarrassing."
	Friendships	2	"I think like when we were in P5 and going on any trips with each other…we wouldn't save seats for each other. But we went on a trip this week and we sat together on the bus as X had saved us all a seat…so like we're best friends now."
	Skills	2	"We remember things that have happened and we remember tips and things on how we should improve and we bring that into other lessons so we don't just use it in health." "We know we're supposed to take turns and listen to each other so we can do that in all the groups we work in."

	Learning	2	"It's made me better in class. I saw what I was like on camera and thought 'how can I get better?' I was talking too much and fidgeting too much and I suppose that was maybe holding me back as I wasn't doing as much work as I could."
Teachers Q3	Confidence	3	"X has become more confident in the class overall and now participates in a class discussion. In all the time I've taught him I'd never seen him raise his hand to volunteer an answer even when he was working in a group. After you started working with him he put his hand up in a whole class discussion and it was as if the floodgates opened!"
	Meta cognition	1	"I think it's almost higher order thinking if you like. They've been thinking more about the purpose of group work whereas everyone else is still learning how to work in a group but they're a bit beyond that."
	Role models	1	"You can see them leading more in the different groups they work in and they're really good role models."
	Clearer expectations	1	"When…they were being videoed they knew what was expected of them and they rose to the challenge most of the time [now] at other times they are clearer on what they should be doing you can sometimes hear them in their other groups say 'we're supposed to be taking turns.'"
	Learning	1	"X seems a bit more enthusiastic about learning and a bit brighter about his reading…he opted to go reader one of the days…he wouldn't have done that previously."

3.25 Discussion

Teachers in this sample appear to have positive views of group work generally; they were trained in cooperative learning, were aware of the benefits, regularly implemented the methodology across the curriculum and showed awareness of the importance of composition of groupings and teacher role. They were able to identify a range of pupil skills required for effective group work and believed pupils need to be explicitly taught the skills and given opportunities to practice them. These findings contradict previous research suggesting teachers often have a poor understanding of group work methodology and are ill equipped to deliver effective group work lessons (e.g. Galton, 2009). However, it should be

noted that no assessment, beyond self-evaluation, of teacher competency in delivering group work was undertaken as part of this thesis.

Pupils' experience of group work in many ways mirrors their teacher's reports. Pupils describe a reasonable frequency of use of group work; they were aware of the potential learning benefits and describe their teachers taking on a range of appropriate roles during group work lessons. They were also able to identify a range of required skills but did not reach consensus about how they may acquire the skills.

Despite positive views of group work, teachers and pupils however reported challenges in group work lessons including conflict within groups, issues with turn taking with pupils either opting out or dominating, and pupils having the confidence to disagree with their peers in an assertive manner. These reports are consistent with previous group work research (Galton et al. 1999; Gillies, 2003; Johnson & Johnson, 1992) and support the rationale that, even in classes where teachers have been well trained and pupils regularly participate in this type of lesson, pupils can require further support in order to engage most effectively.

Pupils and teachers both report that VIG had a positive impact on pupil group work skills. In particular teachers reported that the intervention addressed many of the potential challenges that arose during group work delivery and resulted in more effective pupil participation.

3.3 VIDEO OBSERVATION

3.31 Design

Due to the small numbers of pupils receiving the VIG intervention, a key component of this study was a multiple baseline across participants AB design (Todman & Dugard, 1999). Multiple baseline designs are experimental designs appropriate for use in studies with small numbers of participants. The first condition 'A' is referred to as the baseline and the second condition 'B' refers to the intervention phase (Robson, 2002). The design requires collecting measurements of

participants on a series of data points during phase A and phase B. An AB across participants design stipulates that the intervention is applied at different times to different participants. Furthermore experimental rigour can be increased where it is possible to randomise the intervention starting point, as was the case in this study (Todman & Dugard, 1999; Dugard et al., 2011).

3.32 Procedure

Observation of video collected from all sessions was carried out using a process described fully in Appendix 8. Video observation coding schedule 1 was completed at every data collection point for each group.

Coding of the videos was conducted by an RDO who had not observed any of the video feedbacks and had limited information on the study to ensure bias was minimised. A 10% sample of video was also coded by the author. The author trained the RDO in the use of both coding sheets and video observation using videos from an earlier study. For 'interactants' and 'activity level' elements an inter-rater reliability of 100% was achieved from the outset; however 'dialogue codes' required practice to achieve an acceptable inter-rater reliability. Similarly to Walmsley (2010b), there was difficulty in determining when to split an utterance which affected frequencies recorded and also in a smaller number of instances, how to categorise an utterance into dialogue type. This was despite the schedule being simplified from seven key dialogue types from Walmsley (2010b), to four. In identifying dialogue type some level of interpretation could often be required, for example interpreting impact of tone of voice on meaning. However after training and practice the inter-rater reliability achieved between the author and RDO improved to a range between 87-100% for each dialogue measure. It is widely held that an inter-rater score of over 90% is acceptable to all researchers with over 80% acceptable in most situations (Lombard, Snyder-Duch, & Braken, 2002).

3.33 Analysis

Often physical inspection of graphs of data points which delineates phase A and B to look for clear differences in the pattern of data is a common method of analysing multiple baseline data (Robson, 2002). Achieving a stable baseline and

observing a visibly different response to treatment can be difficult to obtain and this method is considered weak and open to threats of validity (Robson, 2002).

In this study, two alternative methods of analysis were utilised with the coded video data. Firstly, from the range of possible non-overlapping metrics to interpret multiple baseline graph data, percentage of data points exceeding the median point (PEM) in the baseline phase was selected for analysis (Scruggs & Casto, 1987; Ma, 2006; Wendt, 2009). A PEM score of <50% reflects an unreliable intervention, 50-70% equates to a questionable intervention, 70-90% a fairly effective intervention and >90% a highly effective intervention. Alternative methods were considered included using percentage of non-overlapping data (PND) and the percentage of all non-overlapping data (PAND). PND scores are often used as they are generally easy to score and interpret. However, PND relies on use of the single highest score in the baseline phase and therefore can be sensitive to ceiling effects. PAND methodology, where all data points are used, is a more reliable method; however this could not be employed in this study as a PAND analysis requires a minimum of 20 data points. PEM was therefore considered to be the most appropriate as it is a more sensitive measure than PND and can be used with the number of data points available in this study.

The second method of analysis used is a lesser known method of significance testing developed by Todman and Dugard (1999, 2011) and can only be used if the starting point of an intervention is randomised across participants, which is not always possible. In this study the intervention point was specifically randomised to allow this more robust method of significance testing, essentially a bootstrapped exact probability test to be used along with the PEM.

Todman and Dugard's procedure asks researchers to identify the total number of data collection points, the number of participants (groups in this study), the minimum number of baseline points and minimum number of intervention points to be specified in advance. In this study, a minimum of 3 baseline and 3 intervention sessions were required, therefore each of the three groups had 5 possible intervals

when the intervention could begin. The first group has 5 possible start points, which can be combined with any of the 5 start points for the second group and any 5 possible start points for the third group, making 5*5*5 or 125 different possible combinations. This is the minimum number of groups and starting points which would allow the possibility of a significant result with a one tailed test at the level $p<.01$.

The test statistic is the sum over the number of groups of the difference between baseline and intervention means. This was calculated using Microsoft Excel macros made available by Todman and Dugard through their various publications. They also provide similar macros for Minitab and SPSS. A significant result would indicate a significant difference in scores between the baseline and intervention phases across the three groups but cannot determine which one or more groups were affected. However, when used in conjunction with PEM it is likely to provide some indication of where the effect is likely to have occurred.

3.34 Results

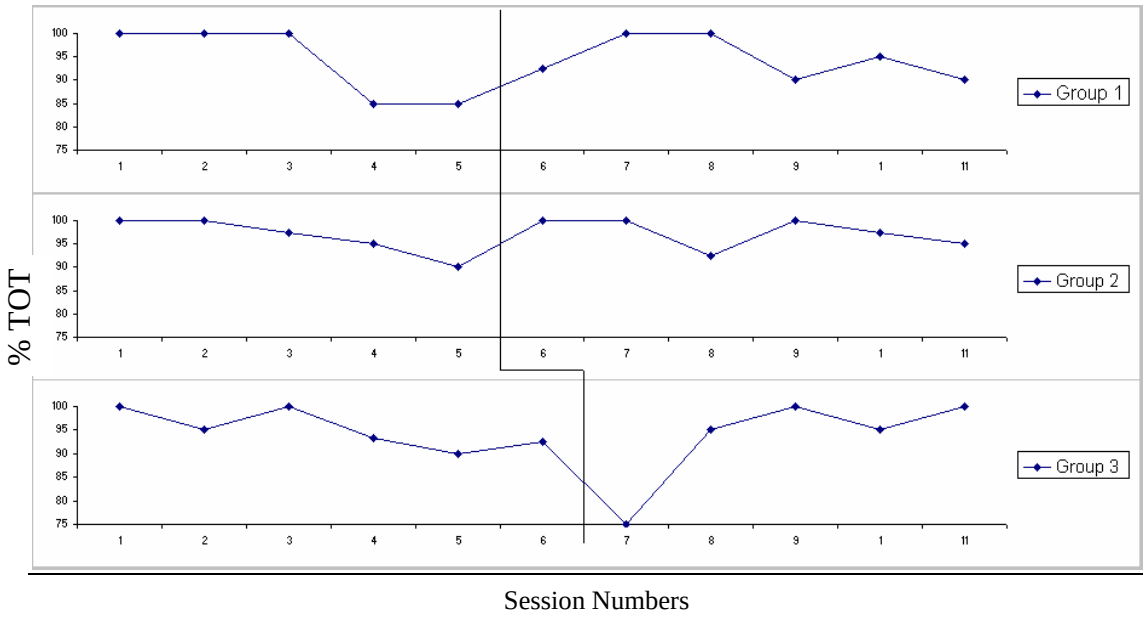
On one filming session for one group the sound equipment failed and therefore only the non-verbal behaviours could be observed and coded for this session. This represents a data loss of 3%. The coding of video data is presented in multiple baseline graphs corresponding to the sections of the observation schedule. The PEM scores are then reported followed by one-tailed significance testing. The scores analysed and reported are the group means.

Percentage time on-task (TOT) for each group ranged from a low of 85% for group 1, 92.5% for group 2 and 75% for group 3 to a maximum of 100% for all 3 groups which was scored in 42% of all data collection points (Graph 1). The baseline phase mean TOT scores were 94% for group 1, 80.3% for group 2 and 95.1% for group 3 with intervention means of 94.6%, 97.5% and 93% respectively. It was not possible to calculate a PEM for group 1 due to ceiling effects, as the median score was 100%. However the PEM for group 2 was 50% and 80% for

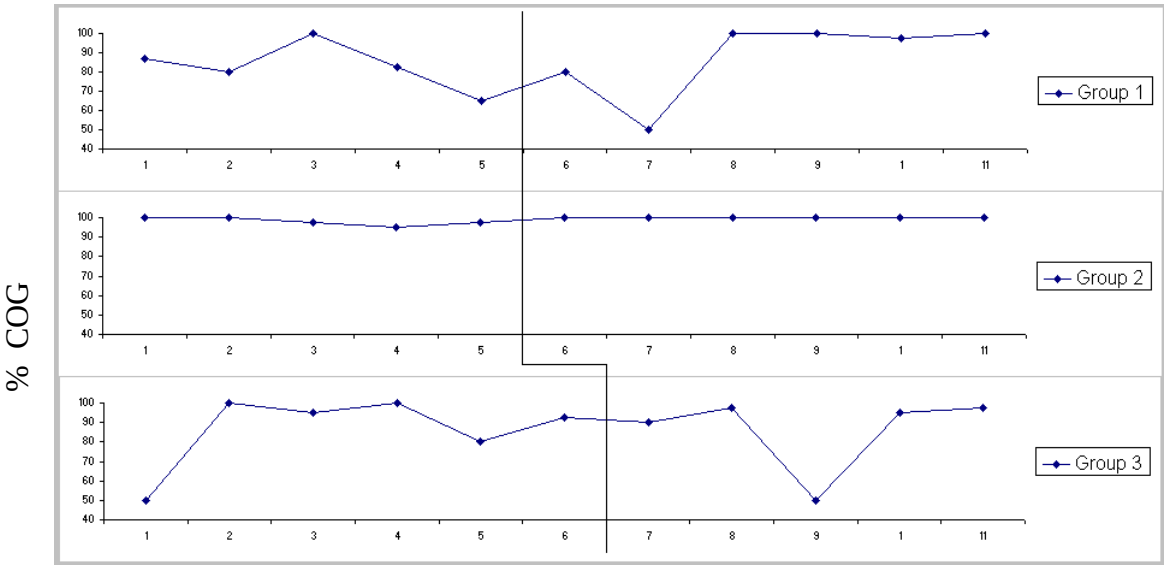
group 3. The randomisation test revealed no significant difference across groups between intervention phases (p= 0.18).

The percentage of time children engaged with others in their group (COG), compared to working on their own, engaging with a teacher or other pupils within the class was taken from the 'interactants' section of coding schedule 1. Results are presented in Graph 2. Percentage time COG for each group ranged from a low of 50% for groups 1 and 3 and 95% for group 2 to a maximum of 100% for all 3 groups which was scored in 42% of all data collection points (Graph 2). The baseline mean scores were 82.9% for group 1, 98% for group 2 and 86.3% for group 3 with the intervention means of 87.9%, 100% and 86% respectively. PEM for group 1 was 67%, 100% for group 2 and 60% for group 3. The randomisation test revealed no significant difference across groups between intervention phases (p= 0.47).

Graph 1- Time on-task

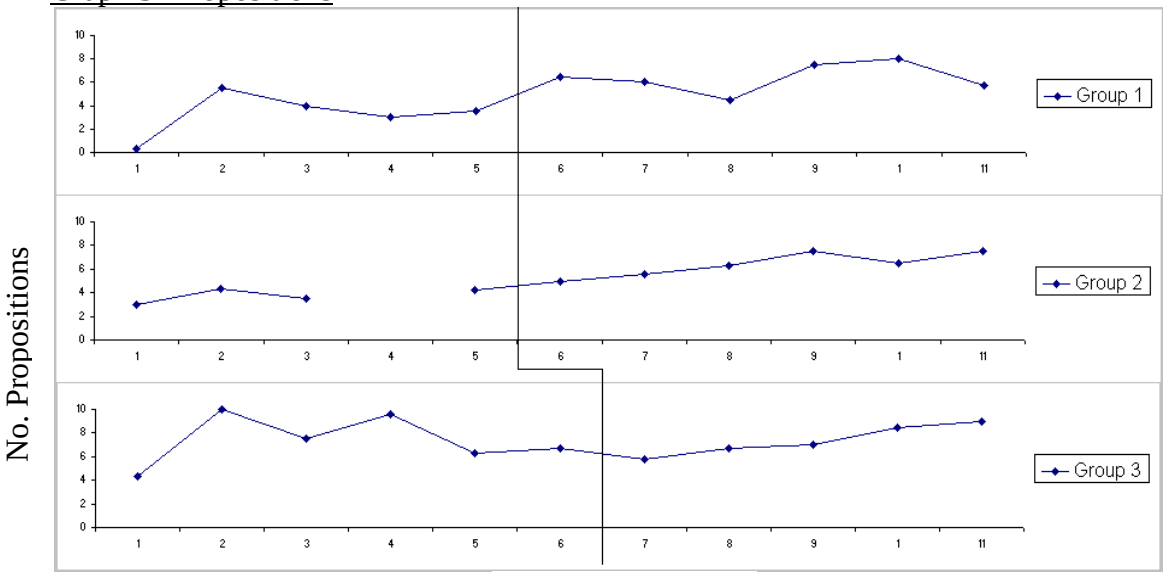


Graph 2- % Time engaging with pupils within their group



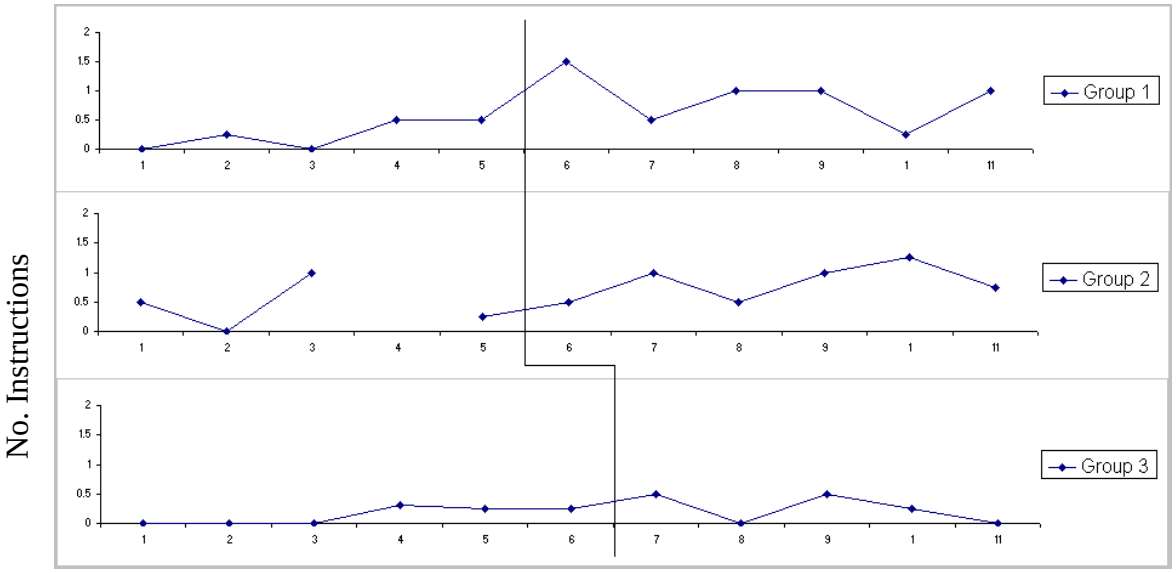
The average number of 'propositions' for each group ranged from 0.3 to 7.5 for group 1, 3 to 7.5 for group 2 and 4.3 to 10 for group 3 (Graph 3). The baseline phase mean score was for 3.26 for group 1, 3.76 for group 2 and 7.4 for group 3 with the intervention means 6.38, 6.39 and 7.4 respectively. PEM scores were 100% for group 1 and 2 and 60% for group 3. The significance test showed no difference across groups between intervention phases (p= 0.13).

Graph 3- Propositions



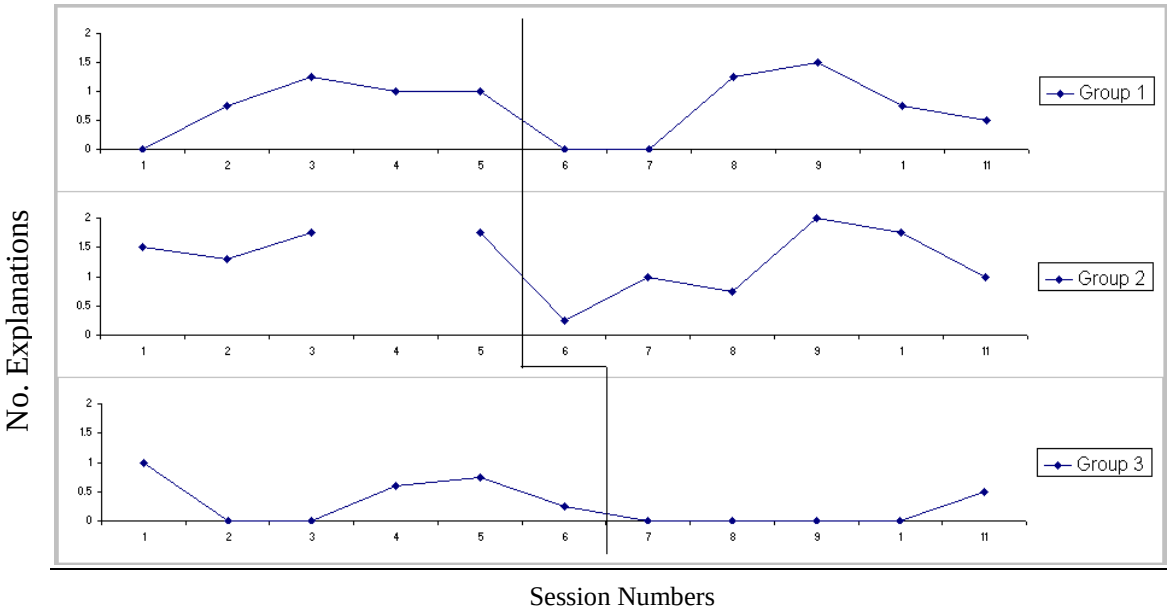
The average number of 'instructions' for each group ranged from a low of 0 for each group, to a high of 1.5 for group 1, 1.25 for group 2 and 0.5 for group 3 (Graph 4). The baseline mean scores were 0.25 for group 1, 0.44 for group 2 and 0.13 for group 3 with the intervention means of 0.88, 0.83 and 0.25 respectively. PEM scores were 83% for group 1, 66% for group 2 and 40% for group 3. There was no significant difference across groups between intervention phases (p= 0.26).

Graph 4. Number of Instructions



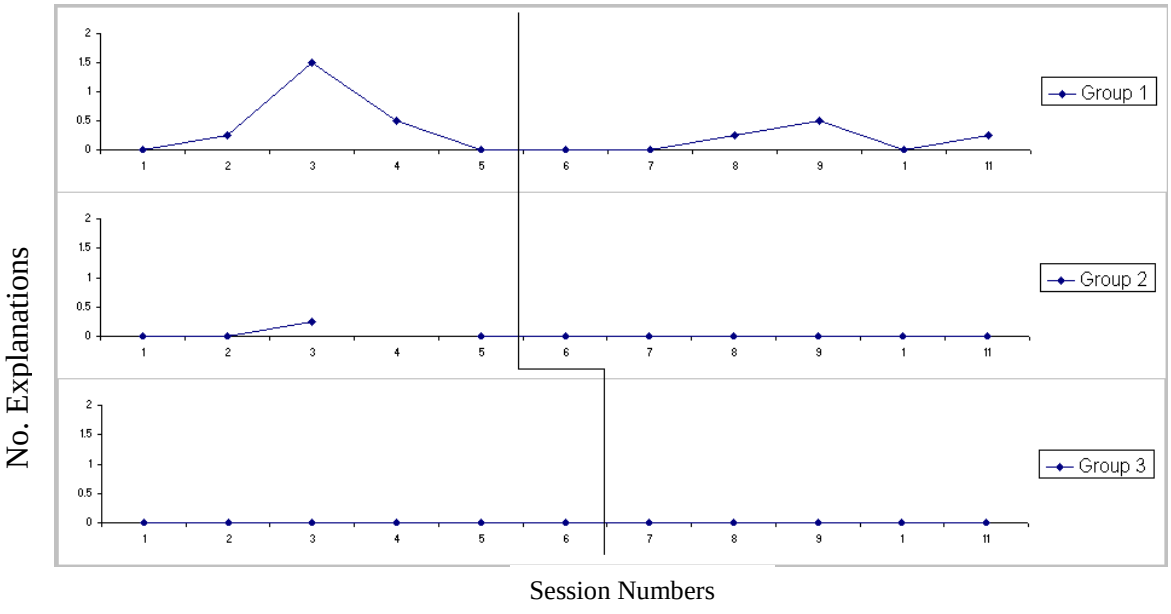
Floor effects were evident when analysing the number of 'explanations' with groups 1 and 3, scoring lows of 0. The lowest score for group 2 was 0.25 (Graph 5). The highest scores recorded were 1.5 for group 1, 1.75 for group 2 and 1 for group 3. The baseline phase mean scores were 0.8 for group 1, 1.64 for group and 0.43 for group 3 with the intervention means 0.66, 1.13 and 0.1 respectively. PEM scores were 33% for group 1 and 2 and 20% for group 3. There was no significant difference across groups between intervention phases (p= 0.90).

Graph 5. Number of Explanations



Finally the average number of 'disagreements' for each group was calculated. All groups recorded scores of 0 which was the case in 78% of data collection points. The highest scores recorded for each group were of 1.5 for group 1, 0.25 for group 2 with group 3 scoring 0 on every data point (Graph 6). The baseline mean scores were 0.45 for group 1 and 0.06 for group 2 with the intervention means of 0.16 and 0 respectively. PEM scores were 0% for every group. There was no significant difference across groups between intervention phases (p= 0.52).

Graph 6. Number of Disagreements



3.35 Discussion

Based on PEM calculations there were some post intervention improvements but these were not consistent across groups. VIG was shown to be effective in increasing time on-task behaviour for pupils from one of the three groups but was questionable for the other two. It was highly effective in increasing time pupils were engaged with other group members in one of the three groups, but again questionable for the other two. In terms of increasing use of particular dialogue types, again the results were variable. The most positive impact appeared to be in increasing the number of propositions used and VIG was demonstrated to be highly effective in two groups in this measure but was of questionable effectiveness for the third group. VIG was fairly effective in increasing the number of instructions used by one group but was of questionable and unreliable effectiveness for the other two groups respectively. It had no impact on the number of explanations or disagreements used in any of the groups. Furthermore it should be noted that even where changes were found in individual groups, as demonstrated by PEM calculations, none of these changes proved to be significant.

CHAPTER 4 STUDY 2

4.1 EDUCATIONAL PSYCHOLOGIST EVALUATION

4.11 Design

A flexible qualitative design (Robson, 2002) was employed for this section. EPs completed observational ratings of pre and post videos of the pupils participating in the VIG intervention. EPs were blind to the condition. A grounded theory approach was then used to generate codes based on the reasons EPs provided for identifying, in their expert opinion, elements of successful group work participation.

4.12 Procedure

For each class group two videos, one pre and one post-intervention were randomly selected by drawing numbers from a hat. A total of six videos were therefore selected. For each group, the four psychologists were shown the randomly selected pre and post video, one after the other, and asked to rate 'Which video do you think showed the children participating most effectively in a group work lesson?' They were then asked 'What did you observe that led you to make this conclusion?' This exercise was then repeated for the other two groups. The author tossed a coin to decide whether the 'pre' or 'post' video would be played first.

The EPs were not given any criteria on what to base their judgement but encouraged to use their professional expertise. They recorded their responses to this activity on a template (Appendix 10). The EPs were asked not to discuss their ratings until after the activity was complete. At the end of the activity the author had a de-briefing session where the EPs discussed their responses and clarified, when required, their justification for their decisions. A brief note of this discussion was taken by the author.

4.13 Results

A total of 3 predictions were made by the each of the 4 EPs. In 11 out of 12 of these predications, EPs correctly identified the post-intervention video as the most

effective which is significantly greater than chance, (one-tailed sign test p=0.003). A one-tailed test was used as the direction of the EPs predications was anticipated.

It should be noted that at the end of the activity, all EPs reported they found this task challenging. They indicated the differences between the pairs of films they saw was 'subtle' and did not express great confidence in their judgements. However the EPs noted the following observations that led them to make their decisions when predicting the post-intervention film:

Increase or presence of following behaviours	Number of comments
-Focussed on-task behaviour	4
-All group members contributing to the task	4
-Even pattern of turn taking	4
-All members giving their ideas	3
-Supporting and building on others ideas	3
-Encouraging others, e.g. by prompting ideas	3
-High levels of eye contact	3
-Smiling and other examples of positive body language	2
-Joking and laughing while being on-task, conveys sense of fun and friendship	2
-Clear roles	1
-Scribe summarising discussion	1

Reduction of absence of following behaviours	Number of comments
-Off task discussion and activity	4
-Group members opting out	4
-Fidgeting	4
-Greater reliance on teacher, calling her to group	2
-Group members working on own	2
-Combative or argumentative tone of voice	2
-Frustration expressed	1

4.14 Discussion

In terms of hierarchy of evidence, expert evidence, which is highly associated with medical research, has been an extremely criticised level of research (Evans, 2003). EPs were used as 'experts' in this study, however not in the manner in which experts are traditionally employed. Furthermore this was only one part of a wider study and results therefore can be triangulated.

The EPs identified a sample of post-intervention videos, compared to pre-intervention videos, as the examples in which children were participating most effectively in group work lessons. This was at a level significantly greater than chance. Furthermore the EPs were able to generate criteria on which they based their decision making. Interestingly although the EPs completed this exercise and generated criteria individually there was strong agreement between EPs on the codes they generated.

4.2 VIDEO OBSERVATION 2

4.21 Design and Analysis

The design and analysis for this study follows that of study 1 (Chapter 3.3) and uses the same data with a new observation schedule. It is however a standalone study building on the results from the first part of study 2 (Chapter 4.1).

4.22 Procedure

Observation of video data collected from every session was carried out to complete coding schedule 2 (Appendix 8). The procedure for coding was identical to that in Study 1 (Chapter 3.3). While extensive training and practice was required to achieve an acceptable level of inter-rater reliability for coding schedule 1, this issue was not encountered to the same extent for this schedule. For 'being attentive' 100% inter-rater reliability was achieved from the outset and 'yes body' achieved an inter-rater score of 96%. 'Yes verbal' was initially below 80% and required a short period of practice on dummy videos which brought the inter-rater reliability score for this measure to a very acceptable 92%.

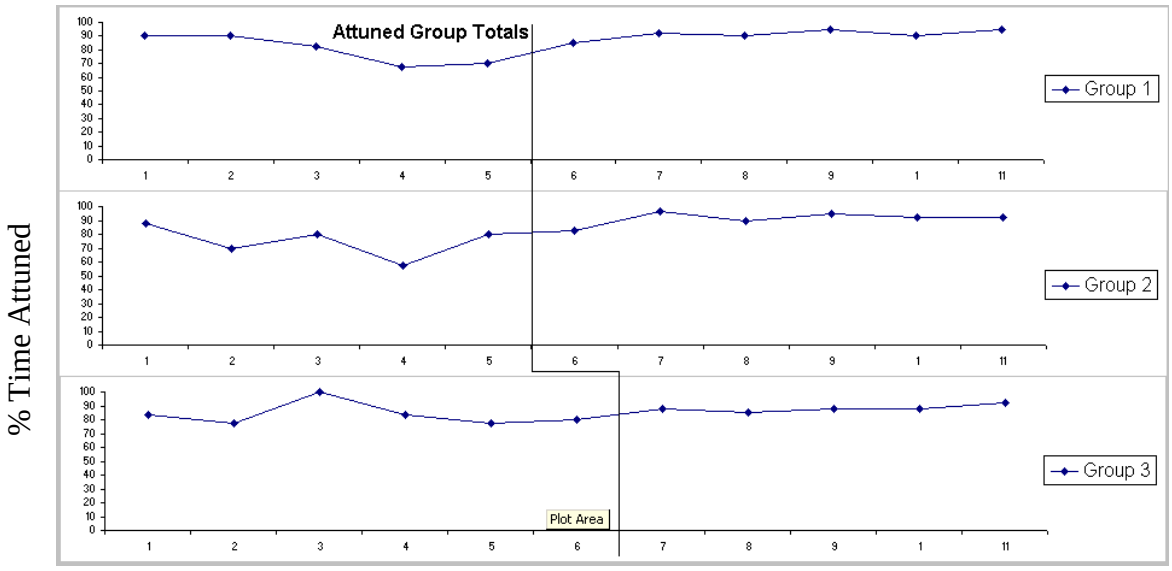
4.23 Results

As the same data was used, as with Study 1 it should be noted that on one filming session the sound equipment failed completely, representing a 3% data loss, and therefore the 'yes verbal' measure could not be coded for this session.

The coded data is presented in multiple baseline graphs corresponding to the relevant sections of coding schedule 2. The PEM scores are then reported followed by one tailed significance testing. The scores analysed and reported are the mean scores for the group.

Percentage of time 'being attentive' or 'attuned' to peers in their group ranged from lows of 70% for group 1, 57.5% for group 2 and 77.5% for group 3 (Graph 7) to highs of 95%, 96.6% and 100% for group 1, 2 and 3 respectively. The baseline mean scores were 80% for group 1, 75% for group 2 and 83.7% for group 3 with the intervention means of 91.3%, 91.5% and 88% respectively. The PEM scores were 100% for all groups. The randomisation test revealed there was a significant difference across groups between intervention phases (p= 0.05).

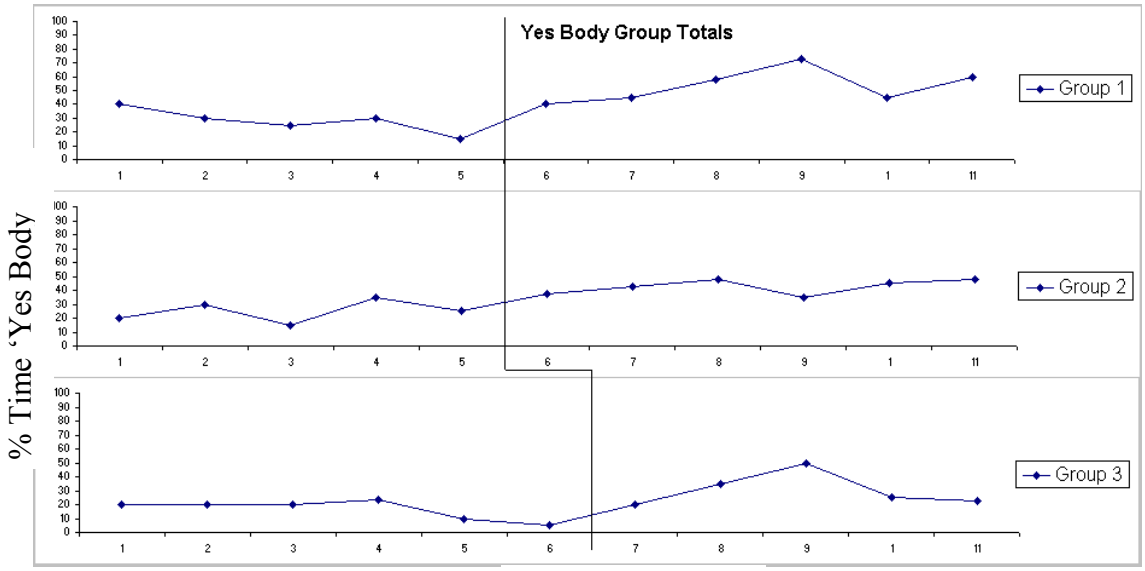
Graph 7. Percentage of Time Being Attentive



Percentage of time showing 'yes body' behaviours ranged from lows of 15% for groups 1 and 2 to 5% for group 3 (Graph 8). Group 1 scored a high of 72.5%

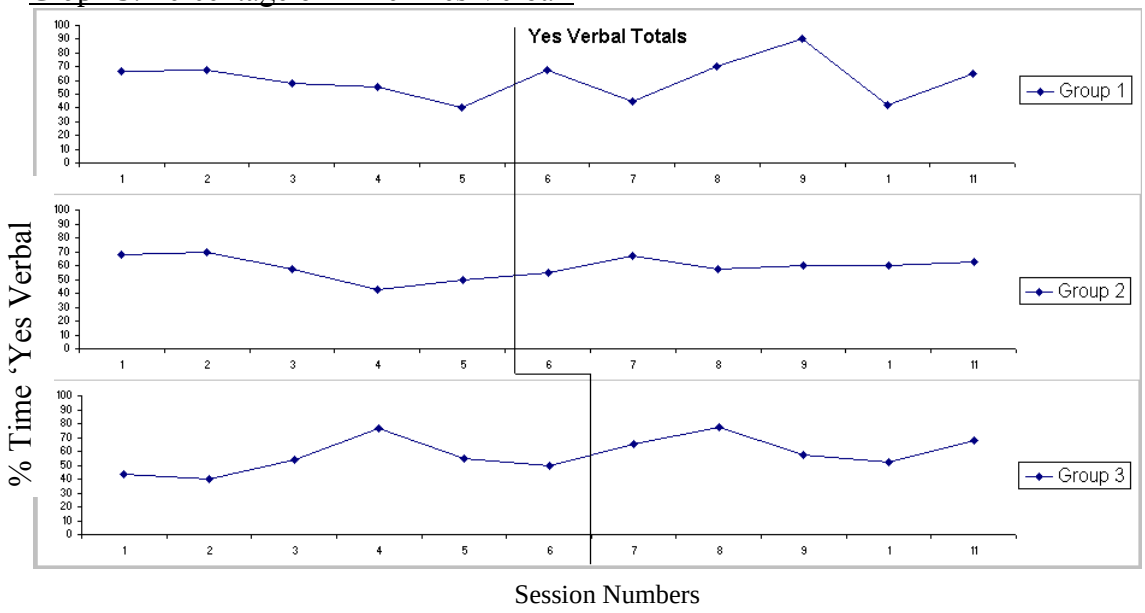
with group 2 and 3 scoring highs of 47.5% and 70% respectively. The baseline mean scores were 28% for group 1, 25% for group 2 and 24.7% for group 3 with the intervention means of 53.3%, 42.6% and 30.5% respectively. The PEM scores were again 100% for all groups however there was no significant difference across groups between intervention phases (p= 0.15).

Graph 8. Percentage of Time 'Yes Body'



Percentage of time showing 'yes verbal' behaviours ranged from lows of 40% for groups 1 and 3 to 42.5% for group 2 (Graph 9). Group 1 and 3 scored a high of 90% with group 2 scoring a high of 80%. The baseline mean scores were 57.3% for group 1, 59.5% for group 2 and 59.2 % for group 3 with the intervention means of 62.5%, 61.3% and 64% respectively. The PEM scores were 66% for groups 1 and 2 and 80% for group 3. There was no significant difference across groups between intervention phases (p= 0.15).

Graph 9. Percentage of Time 'Yes Verbal'



4.24 Discussion

Based on PEM calculations VIG was shown to be highly effective for all three groups in increasing percentage of time pupils were being attentive or attuned to peers. The difference pre and post-intervention for this measure reached a significant level. Specific behaviours being viewed in this category were looking at peers, returning eye contact, turning to respond to them and following their movement of gaze. VIG was also shown to be highly effective for increasing 'yes body' behaviours for all three groups, although this difference did not reach significant levels. 'Yes body' included responding to peers by nodding, smiling, using friendly facial expressions, tone of voice and posture. The area of highest ambiguity was the final element of observation 'yes verbal'. It was only found to be effective for two groups and was of questionable effectiveness for the third group. These behaviours were related to pupils' attuned verbal responses, for example labelling what a peer was doing, naming a thought, feeling or behaviour, saying yes and asking questions. Therefore although there was still some variability between groups, overall the results of this section indicate a stronger presence of behavioural differences in the pupils pre and post intervention.

4.3 VIDEO TRANSCRIPTS

4.31 Design

A case study design was employed in order to closely analyse a pre-post sample of video transcriptions. A socio-cultural discourse analysis methodology was utilised

4.32 Procedure

The samples of video that were used for EP evaluation in Study 2 (section 4.1) were initially transcribed for direct speech only by a senior clerical worker. This was fully checked for accuracy by the main author and changes made accordingly. Following guidance by Mercer (2005), the main author then added standard punctuation to represent the grammatical structures as she interpreted them, when they impacted on the function of direct speech. Finally any non-verbal or other features of the interactions judged as relevant by the author were added. Relevancy was defined as adding to or changing the communicative intent or meaning. Each complete utterance or turn by a pupil was analysed as one unit, regardless of length. Comments which were not clear, either due to volume, pupils not speaking clearly or talking over each other were not analysed.

4.33 Analysis

The transcription analysis was carried out using 'sociocultural discourse analysis' methodology (Mercer, 2010). This was considered over other methodologies for 'talk analysis' such as computer based text analysis, ethnographic analysis, conversation analysis and sociolinguistic discourse analysis.

While all classroom talk methodologies could be argued to have their limitations, sociocultural discourse analysis focuses on the content and function of language which was of primary interest in this study. Furthermore it is compatible with methods of data collection and experimental features consistent with this research design. Sociocultural discourse analysis allows for qualitative analysis of data, combined with quantitative analysis for frequency of particular words or types of talk.

Mercer (2005) suggests the focus of qualitative analysis should be on the function and social context of talk. Using Mercer's (2005) framework, frequencies of three specific types of talk, that is disputational, cumulative and exploratory talk, were coded. Examples of transcripts of talk are presented with annotations, followed by the authors' analysis of the individual transcripts, to provide a richer understanding of the different types of talk in the context of the specific groups in this study.

4.44 Results

Despite the upgraded microphone technology compared to a previous study (Walmsley, 2010b), as filming took place in the naturalistic classroom environment, background noise did impact the clarity of the dialogue being transcribed. Table 12. presents the percentages of units of speech for the three different types of talk as analysed from the sample transcriptions for each group.

Table 12. Percentages of types of talk

		Disputational Talk	Cumulative Talk	Exploratory Talk
Class 1	Pre-intervention	58%	42%	0 %
	Post-intervention	20%	80%	0 %
Class 2	Pre-intervention	0%	100%	0%
	Post-intervention	0%	82%	18%
Class 3	Pre-intervention	37%	63%	0 %
	Post-intervention	17%	83%	0 %

The pre-intervention tape of group 1 predominately featured disputational talk. An example of the transcript to illustrate this type of dialogue, in which all four pupils were involved, is shown below in Table 13. The lesson focussed on Health and Well Being strands 2-30a and 2-32a which are second level outcomes with a nutrition focus in the Food and Health experience.

Table 13. Example of Disputational Dialogue

Pupil	Dialogue	Comments
C	Right, let's start from the top. Who was James Lind?	Pupil clarifies question set by class teacher.
A	James Lind was the person who found the cure for scurvy, he was Scottish.	
K	No he was from Norway.	Calmly disagrees.
S	So you get Dutch people from Denmark.	Relevance of comment to current discussion not clear.
A	You don't get Dutch people from Denmark.	Tone of voice quite patronising & accompanied by smirk.
S	You do sometimes.	Responds in neutral voice.
A	No you don't!	Raises voice in response.
S	Aye you do!	Raised voice in reply.
K	They're from Holland the Dutch.	
A	Yes, it's Holland and Norway, no not Norway I'm mean the Netherlands.	Appears flustered.
K	That's what Holland is.	Patronising tone of voice and rolls his eyes at A.
A	I know. But he said the Dutch are from Denmark.	Beginning to look sulky.
S	There are people from Denmark.	
A	I know but they're not Dutch.	
S	I know that.	Snaps at A.
A	Well then.	
S	Oh just stop talking about that!	Clearly exasperated.

In this example, although all pupils are on-task and contributing to the discussion, there is no evidence of cooperative engagement. The verbal contributions are very short and turn taking between the pupils is rapid with no indication of individual critical reflection before contributions are made. The tone, volume and content of utterances appear to signify animosity and frustration among group members. The overall exchange is unproductive and a clear illustration of disputational dialogue.

The post-intervention tape of group 3 predominately featured cumulative talk. An example of the transcript to illustrate this type of dialogue, in which all four pupils were part of the discussion, is shown below in Table 14. The lesson focussed on Health and Well Being strand 2-38a, 2-40a, 2-41a which are second level outcomes in the Substance Misuse experience.

Table 14. Example of Cumulative Dialogue

Pupil	Dialogue	Comments
RE	A group of children are drinking alcohol and offer some to a friend – what are the risks, what should the friend do?	Reads from worksheet.
J	If you take it you might get steaming.	Pupils begin to brainstorm ideas. Lots of suggestions generated. Each suggestion seemingly accepted without evaluation by the group.
R	You can make yourself really sick and need to go to hospital.	
RE	If you take it, they might tell you to take it again.	
C	But then you might like get put in jail.	
R	My mum would ground me.	
J	You better run then. If they tell you to take it or they're going to batter you.	
R	We need to write this down. Get steaming, be sick, run away or get battered.	
J	Yeah start writing it down we've not got long	

	left.	
C	What if you just tell them you don't want to take it?	An alternative point of view tentatively offered.
J	Then run, you're gonna get killed aren't you?	Repetition of earlier idea made.
C	Yeah they might batter you.	Comment accepted without challenge.

Table 14 again evidences that all pupils were on-task and contributing to the discussion. Indeed all pupils contribute individual ideas to the discussion and there appears to be a pattern of even turns among the group with no member dominating. While contributions are positive and the discussion appears a comfortable experience for group members it lacks any criticality. Pupils do not attempt to justify or explain their suggestions. There is one example by C in the third from last contribution where he appears to offer a possible alternative position however when another pupil repeats an earlier point C readily concedes and offers no further challenge. This positive but uncritical exchange is a good example of cumulative talk.

The post-intervention tape of group 2 featured the only example of exploratory talk seen in this sample of videos. An example of the transcript to illustrate this is shown below in Table 15. The lesson focussed on Health and Well Being strand 2-20a which is a second level outcome within the Planning for Choices and Changes experience.

Table 15. Example of Exploratory Dialogue

Pupil	Dialogue	Comments
A	Why should he improve his writing?	Reads from prompt card.
J	Get a better job?	Tentatively suggests.
D	Yeah but it doesn't really matter if you've got bad handwriting you can still get a good job.	Disagrees calmly.
J	Yeah, remember Miss X said about job	Justifies initial suggestion.

	applications with your handwriting, if your handwriting is sloppy sometimes people won't choose you.	
D	But is that not like if you're doing something like being a writer or something?	Explores further and states as a question inviting further discussion.
A	But writers can type on a computer so even for that I don't know handwriting matters so much.	
J to K	What do you think? Do you think you would be able to get a job if you worked hard on your writing? Improving your writing doesn't just mean improving your handwriting.	J attempts to bring K into discussion. Considers question from different angle. K shrugs and makes no verbal response.
A	Yeah because it's not just about your handwriting it's about how you write too.	Supports J's new line of thinking.
D	That would be in spelling because you have to be good at spelling, if you don't have the good spelling they're not going to give you a job.	Allow earlier disagreement to pass and supports this new line of questioning.
K	Maybe it could be a man who's writing cooking books if someone need 'flour' to do a cake someone may read the normal 'flower.'	First contribution to the discussion so far.
J	So people won't be able to understand it	J expands K's contribution.
D	Improve my spelling he could get a better job – he could still get a job but…	Linking to earlier discussion.
J	But it might not be the best job	
D	I know so spelling wouldn't stop you getting a job but good spelling could help you get a better job.	Reaches a more balanced perspective than earlier suggested.

In this sample again pupils are on task and all make contributions to the discussion. A clear difference from the other two dialogue samples is the length of utterances and therefore less rapid pace of turn taking allowing pupils time to reflect before making contributions. This still remains a positive discussion for the group members and tone of voice is stated to remain calm, even when pupils are being challenged. Statements are put forward tentatively allowing peers room for joint consideration before providing support or challenge. Pupils offer justifications for their contributions and challenges with their reasoning being more visual compared to the previous examples. Individual members and the group as a collective achieve a more balanced perspective as a consequence of the discussion. It is suggested therefore that this exchange could be classified as an example of exploratory talk.

4.45 Discussion

Given the limited impact the intervention appeared to have on pupil dialogue in the video observations, this method allowed more detailed exploration of what types of dialogue pupils were using that the other measures did not provide. This was in relation to three key categories of classroom talk; disputational, cumulative and exploratory. Disputational talk features in groups with high levels of conflict (see Chapter 1.34).

Two of the groups showed a change post-intervention in reducing high levels of disputational talk and moving towards a greater level of cumulative talk. However there was no evidence of exploratory talk in their dialogue. The final group started with exclusively cumulative talk pre-intervention and post-intervention while their dialogue remained predominantly cumulative, they had shifted to around a fifth of all talk being exploratory. Overall this analysis supports the results from video observation of both schedules that pupils overall rarely used high quality dialogue in their group discussions. Furthermore, while VIG appeared to have an impact in reducing negative types of verbal contributions as all groups showed a positive change in patterns of talk, it did not appear to make a strong impact on improving levels of high quality dialogue across all groups.

CHAPTER 5 DISCUSSION

5.1 KEY FINDINGS

5.12 What are the teacher and pupils' views on the impact of VIG?

Teachers reported that as a direct consequence of the VIG intervention, pupils developed increased skills in all key areas they had previously identified as challenging. That is they suggested pupils were better equipped to resolve conflict appropriately, there was more even turn taking within groups and pupils appeared more confident. Perhaps most encouraging were teachers' reports that the intervention appeared to have extended benefits outside group work lessons. This included increase in pupil confidence in all school contexts, evidence of meta-cognitive thinking about learning, pupils acting as role models within the classroom and generally being more engaged with their learning. The questionnaire measure coupled with teacher interview data therefore indicates a strong positive teacher evaluation of the impact of the VIG intervention. This includes pupils' participation in group work lessons, their group work skills and impact on wider learning and well-being.

Pupils identified a compelling range of benefits which they attributed to the VIG intervention. There was unanimous agreement that VIG developed their confidence and they also recognised this development in their peers. Collectively the groups reflected that they improved turn taking, in that all members were able to contribute without anyone being overly dominant or opting out. Other benefits reported included providing increased support to peers, improved team working, consolidating friendships, higher levels of on-task behaviour and developing their ideas. Similarly to their teachers, pupils believed some benefits extended beyond their participation in group work lessons into other areas of school life. This was particularly true for pupil confidence but also friendships, interaction skills and other areas of learning. Results therefore indicate a strong positive evaluation of the impact of the VIG intervention by the pupils, who were the main participants of the study.

In comparison to other studies which have used VIG in a school context (Hayes et. al, 2011; Mussett, 2014), there was no negative opinion about the use of video expressed during any feedback from participants. On the contrary pupils appeared eager to be filmed and were also enthusiastic about participating in shared reviews. There were few self-conscious remarks about how they looked or sounded on film although the author reflected some pupils presented as nervous in the first shared review. A unique difference in this application of VIG was that pupils received the shared review in small groups. They were therefore not alone with the guider on an individual basis and nor was the video shared with classmates out with their group. This may have assisted the pupils to feel more confident in the process. Teachers involved also appeared equally at ease in the researcher's presence. The teacher briefing meeting and classroom visits before the project may have helped begin to build relationships and also allowed the participants to seek reassurance about any aspects of the project they were unsure about. The intervention therefore appears to have a high level of client satisfaction and acceptability, both for pupils directly receiving VIG and also for their class teachers supporting them.

5.13 Does VIG lead to improvements in measures of pupils' participation in group work lessons?

Study one (section 3.3) indicated some post-intervention improvements. However these were not consistent across all groups and no significant differences were identified between baseline and post intervention conditions using Dugard et al. bootstrapped exact probability test (2011). Issues relating to this will be discussed further in section 5.2, Study Limitations.

The findings from video observations in study one therefore could not support a confident assertion that VIG leads to improvements in objective measures of pupils' participation in group work lessons. However as this analysis was discordant with the participant views, the focus of study two was to further explore the data using other methods of analysis in order to investigate whether it was possible to find objective measures to triangulate with participant views.

At a level significantly greater than chance, an independent group of four psychologists identified a sample of post-intervention videos, compared to pre-intervention videos, as the examples in which children were participating most effectively in group work lessons. While the differences pre and post-intervention were described as subtle, psychologists were able to identify a range of behavioural differences that allowed them to reach their conclusion that post-intervention children were participating more effectively in group work lessons. The study involving psychologists as 'experts' therefore lends support to the view that participating in VIG leads to improvements in pupils' participation in group work lessons.

From the second series of video observations there was still variability between groups stated in the results; however this element of the study allows more confident conclusions to be reached, compared to study one. PEM calculations showed positive intervention effects across all groups for two measures, being attuned and yes body and with two groups in the final measure, yes verbal. It is recognised however that the differences only reached a significant level for the attuned measure. While caution needs to be taken interpreting the meaning of one significant result within a range of non-significant findings, the findings from video observations in study two provides some support that VIG leads to improvements in objective measures of pupils' participation in group work lessons.

A close transcription analysis of pupil dialogue showed that post intervention pupils verbal contributions across all three groups were more positive. That is there was a reduction in disputational talk and an increase in cumulative talk. This reflects improvements in relationships across all three groups. However, as only one group experienced an increase in exploratory talk, overall we can conclude the intervention is likely to have little immediate impact on pupils' learning. Reasons for this will be explored further in Chapter 5.2, Study Limitations.

5.14 Is it possible to identify an optimal number of VIG sessions for promoting change?

It had been anticipated that consistency of topic across classes would allow stable baselines and intervention periods to be established which could be demonstrated visually in multiple baseline graphs from video observation data. As has previously been highlighted, there was considerable variation both within and between groups across the time span of this research. Therefore using existing measures, even when an intervention effect was found, it was not possible to identify an optimal number of VIG sessions from this data. Feedback from pupils and teachers indicated that intervention length, which was more than the usual three to four number of shared reviews often recommended in VIG work, was acceptable to them. Pupils were able to identify new targets each session and appeared to make progress towards these and had perhaps therefore not exhausted the level of change possible.

5.15 *Summary*

The small-N experimental design used in this research provided the opportunity to conduct an in-depth exploration, triangulating evidence from a range of data types that much of the existing VIG research fails to achieve. This study has added to the growing research into the positive impact of VIG as an effective method in facilitating positive change in schools. This is the first study to report any observable behavioural change in a school based VIG intervention where the pupils are the direct clients. While the changes observable on video are modest, they are supported by the independent evaluation provided by the group of EPs who rated a sample of videos. Of most interest however is the overwhelmingly positive evaluation from the teacher and pupil participants who reported a strong impact of VIG alongside high levels of client satisfaction and acceptability of the intervention.

5.2 STUDY LIMITATIONS

The time period for distributing consent forms for this study was greatly impacted by severe weather conditions resulting in a number of school closures over a period of several weeks. At this time even when schools did open, pupil attendance rates were greatly reduced. The return rate of consent forms was therefore much poorer than anticipated given the healthy return of seventy-five percent in an earlier

study (Walmsley, 2010b). This had a possible impact on how representative the pupil participants were of their classes, for example an all-male group from class two.

While the recording equipment purchased for this study was superior than in an earlier study (Walmsley, 2010b), including wireless microphone technology, background noise still proved a challenge and impacted on the ability to clearly analyse the dialogue at times. However the wireless technology appeared to have a positive impact in reducing intrusiveness of filming in a natural class environment. Pupils clearly forgot they were being recorded on many occasions and behaved naturally, therefore increasing ecological validity of the study.

A surprising finding was that levels of on-task behaviour in study one, (chapter 3.3) still approached ceiling levels similar to that reported by Walmsley (2010b), albeit that in only one group did this impact on the ability to carry out the planned analysis. The improved use of technology, resulting in less intrusive observer presence described previously, in addition to clearer guidance to class teachers to employ only usual classroom management practice, was expected to address issues of ceiling levels. However pupils in this study had a lot of experience with cooperative learning group work over their six years in school, due to the training their teachers attended. It could be that this partially explains the unusually high levels of on-task behaviour as they were familiar with the type of lesson and were clear about teacher expectations. Furthermore class grouping needs to be considered an influential factor. As all classes were composite, class sizes are capped at twenty-five, compared to the possible maximum of thirty-three in single stage classes. While research on the benefits of smaller class sizes can be contradictory, smaller class sizes may generally increase pupil engagement, as pupils benefit from more frequent interactions with a teacher (Blatchford, Bassett & Brown, 2011).

There was ambiguity in the results of the MCI-SF scale of ‘difficulty’. This was not unique to this study. Sink and Spencer (2005) identified the scale of ‘difficulty’ most problematic, both statistically and conceptually. They recommend

adapting the MCI-SF to an 18 item, 4 scale version omitting the difficulty scale; however this is not commercially available. This measure was not designed for repeated use over the time scale in which this project occurred. It is noted that a measure that was able to be repeated would have allowed interesting comparison of classroom climate pre and post-intervention. It is argued however that the MCI-SF was still an appropriate measure to use and that four of the scales provided interesting information on the classroom climate pre-intervention.

A disappointing finding was floor effects of dialogue types, similarly reported by Walmsley (2010b). Walmsley (2010b) attributed low frequency of high level dialogue to the low level of challenge offered in some of the lessons, where pupils were not provided with appropriate opportunities to reason, negotiate and support their peers' learning. A high level of challenge in lessons is clearly demonstrated to be related to high quality pupil interactions and dialogue (Baines et al., 2007; Brown & Kennedy, 2011; Christie et al. 2009; Johnson & Johnson, 2000; Mussett, 2014; Rojas-Drummond & Mercer, 2003). In this study the author had requested maths or science to be the focus curricular area, similarly to the SPRinG and ScotSPRinG studies. Unfortunately while this was not a practical option, it was anticipated that Health and Well Being topics, delivered in high quality group work lessons, would still provide opportunity for high level dialogue. A possible reason for floor effects therefore may be the structure of the lessons delivered. While the author had requested a group task with a minimum of ten minutes continuous activity, this was not delivered in all lessons. Indeed some sessions involved two or three shorter tasks, interspersed with whole class activity, to make up the ten minutes. These shorter tasks may not have provided ample opportunity for the depth of discussion sought by the author.

The level of challenge and complexity of tasks at times was also questionable. This was highlighted by the author and to a lesser extent teacher self-evaluation in two key questions in the S-TOP rating scale: 'The group work task warranted the use of exploratory talk/discussion (suggestions, explanations, conjecture, etc.)' and 'The task was open ended or contained a level of ambiguity

that encouraged group work.' While the teachers and author completed lesson evaluations at three time intervals these were intended as reflection tools and not an assessment of the lesson. Data collected was therefore not robust enough, nor was there permission from the teachers involved, to analyse further in order to compare the effects of lesson quality on pupil performance.

Another possibility for the limited impact of the intervention on pupil dialogue may be that the number of VIG sessions did not allow enough time to address general group interactions, in addition to dialogue types. The VIG sessions focussed primarily on the principles of attuned interaction and guidance, similarly to a traditional VIG intervention, with an initial focus on the base layers before moving up through the hierarchy of behaviours. Types of dialogue were highlighted to pupils in relation to 'guiding' and 'deepening the discussion' from the third shared review onwards. During these latter shared review sessions any identified clips of the pupils engaging in the sought types of dialogue were viewed and discussed. However, some groups did not use the measured dialogues at all in some sessions; therefore there were no related clips available to show the pupils. It is possible therefore, that pupils were not provided with adequate opportunity to consolidate more complex 'yes verbal' behaviours and key dialogue types to a high level, across all groups. In cases where the behaviours would be considered new skills to the pupils, it is suggested that in the future direct teaching input with success criteria clearly communicated from the outset would be beneficial. This would include outlining what dialogue types the teacher wanted to observe and may have generated a better baseline from which VIG would be better placed to support a further skill development.

As can be seen from the multiple baseline graphs (Chapter 3.3 & 4.3) there was variability in observations for a number of behaviours, in both baseline and intervention phases, across all groups. It could be argued that this was due to a similar challenge reported by other researchers (Kaye et al., 2010; Loughran, 2010; MacDonald, 2014; Mussett, 2014); namely the consistency of activity being filmed across sessions. Despite all lessons having the same curricular area, lessons naturally

varied from week to week as teachers moved through topics and there was also considerable variation as previously discussed in the complexity of lesson. A curricular area like maths or science may have provided a greater consistency of topic although to avoid repetition over the number of weeks the study took place, the application of the topic would still have to change.

5.3 IMPLICATIONS FOR FUTURE RESEARCH

Future studies need to consider the balance between benefits of filming in natural classroom surroundings as unobtrusively as possible and the quality of sound required for any detailed analysis of dialogue; certainly without the availability of professional grade recording equipment. For video observation the current quality of data was overall of an acceptable quality however for finely grained transcription analysis, higher clarity of video data would be beneficial.

It is recognised that this study did not attempt any analysis of the process of dialogue between guider and pupils during the shared review sessions. As the author was a fully qualified guider it was not an AVIGuk requirement to film every shared review session, however for a future research study this would be another interesting area to explore. Analysis of shared review may help generate a deeper understanding of how this intervention may work and also begin to answer the question of what the optimal number of shared reviews may be. Analysis of shared review between a range of adult guiders and child clients could also help fine tune the methodology for delivering the intervention in this novel way.

Gillies and Boyle (2010), Baines et al. (2009), Mercer (2010) and others have highlighted the importance of teacher dialogue in supporting pupils' learning. Another area which merits further attention therefore would be the possibility of using VIG to support teachers looking at their own skills in relation to facilitating group work. In this study pupils were the primary participants with teachers involved only to support the implementation of the study. Previous research has indicated the value of robust training for teaching staff delivering group work lessons

and clearly the quality of interaction between teachers and their pupils is of key importance in promoting effective classroom dialogue. VIG is yet untested in this area of professional development but would appear to have potential benefits as a teacher training tool for facilitating effective group work.

While dialogue measures related to pupil learning was a key focus in this study, there was no direct analysis of cognitive development in pupils across the project. Given the limited impact on dialogue in this sample it would perhaps be unlikely that such changes would have been found. However if a central research aim is to improve pupils' learning through improving pupil dialogue, it perhaps follows that the impact on learning should be directly assessed. Additionally while the multiple baseline design in effect used the intervention pupils as a control group, by assessing their behaviour across conditions, it may also be beneficial to make better use of the other pupils in the class. In this study their views were only gathered pre-intervention, however they have the potential to act as a natural comparison group although they were not filmed during this current study.

Implementation factors are an important issue to consider in relation to the delivery of cooperative learning lessons and VIG interventions in terms of potential impact on research findings. Fidelity to intervention can clearly have considerable effects on the outcomes achieved. It has been highlighted that no assessment measures were sought in terms of cooperative learning lesson fidelity, consequently as well as variation across lessons there may have also been variation in lesson quality which future research studies should address. In relation to VIG, the author acted in a dual role in delivering the intervention as well as researcher. The author is a fully trained VIG guider and sought intervision with an experienced supervisor during the delivery and therefore can be reasonably confident of high levels of fidelity to the intervention model. However, while this dual role is common in VIG research it is suggested that independent researchers would enhance the evidence base of the intervention and reduce any bias introduced by enthusiastic VIG research practitioners. This study benefitted from an RDO coding the main video data to reduce potential bias.

5.4 IMPLICATIONS FOR EDUCATIONAL PSYCHOLOGISTS

This section aims to consider the key findings from this thesis in relation to the potential impact on EP practice. One such implication is ability of EPs to play a stronger role in understanding and promoting the evidence base, not only for interventions supporting health and well-being but also for teaching and learning. Cicchetti et al. suggest that "it is critical that professionals, government officials, social policy advocates, and mental health insurers recognise the necessity of investing in the delivery of theoretically informed, evidence-based interventions" (2006, p. 646). As research, consultation and intervention are core functions for psychological services in Scotland (Scottish Executive, 2002), the profession are arguably well placed to support local and national strategic decision makers review the quality and robustness of the evidence base for a range of interventions as well as using these skills to inform decisions within individual EP's practice.

It therefore follows that EPs have a role to play in promoting the evidence base and known implementation factors underpinning a range of teaching and learning methodologies, including group work, to help raise pupil attainment. Indeed a recent HMIe report, written after the first inspection of all 32 local authority psychological services in Scotland, recognised that while services are making effective contributions to Health and Well-Being strands of the CfE, they need to extend their impact more strongly in other areas of learning (HMIe, 2011). Specifically, psychologists should be "contributing their knowledge of child development and learning theory to support schools and centres to improve learning and teaching" (HMIe, 2011, p.5). The work in this thesis is a strong example of such a contribution.

Key learning from the literature review demonstrates that pupils can benefit socially and cognitively from regularly having the opportunity to participate in high quality group work lessons. However in order do so, both pupils and teachers require a high level of structured support, particularly as group work practices within the UK are reportedly underused and poorly understood by teachers who struggle to implement them effectively. Data from teacher participants in this research, working in a context in which they are afforded extensive support to develop group work

practices, would refute these assertions; however they did recognise that pupils could benefit from intervention to further develop their group work skills. Specifically in order to sustain engagement and positive relationships with peers during group work lessons and being able to engage in high quality dialogue known to promote learning. Pupils who participated in this study also displayed a high level of awareness of group work as a learning methodology but echoed the challenges reported by teachers that they experienced in group work settings.

The use of VIG in this study to support teaching and learning is a novel deviation from its traditional implementation which is to support difficult adult-child relationships. The results from this study should give EPs the confidence to deliver VIG as an intervention with the potential to support skills development within group work practice in schools.

The high level of client satisfaction and acceptability in using VIG with groups of children with classrooms is also encouraging for EPs. Working as a peripatetic service, the ability to quickly build trusting relationships and gain informed consent for direct involvement is crucial. Time taken to brief participants on a face-to-face basis and offer reassurance where required appears to have added to client's confidence in the approach. Furthermore, EPs are arguably uniquely placed to be able to deliver such an intervention within a class context, which is likely to fall out with the remit of a typical classroom teacher due to the specialist training and time required.

The use of VIG with child clients is a new potential area for growth in VIG interventions. Consideration however needs to be given to the developmental readiness of children to participate in such an intervention. Unlike other video based interventions which involve primarily viewing video footage, for example video modelling, the discussion with a guider is a core component in VIG. Clients therefore require a certain level of language and cognitive skill to be able to participate in this dialogue and engage in the process of reflection. Pupil participant evaluation in this study, including children with ASN, indicates that pupils were able

to engage effectively in the process. They offered insightful comments into their skills, development needs and the perceived benefits of the VIG intervention. EPs have a strong background training in child development and are likely to have extensive experience of child observations are perhaps therefore are well placed to judge whether a child would be able to meaningfully engage with the intervention. There is however a need to extend the evidence base and widen knowledge around what would be a lower age or developmental limit for VIG clients. This links to a further implication for EPs in relation to their potential to contribute to the evidence base for VIG, particularly in school contexts.

Given the large number of EPs trained in VIG, it is reasonable to suggest it is an intervention widely used by EPs across the UK. Practice forums suggest this is in terms of individual case work as well as larger systemic projects. However the evidence base of the use of VIG in schools, particularly with child clients is very much in its infancy. EPs therefore have a responsibility not to make claims that cannot be substantiated when using VIG in applications in which the evidence base is absent or still developing. However given service requirements to deliver both intervention and research functions, EPs are in a unique position in which they may be able to pilot the use of VIG in novel contexts whilst simultaneously conducting rigorous programme evaluations and contributing to the evidence base. This would include widening the primary use of VIG in schools from mainly supporting pupils with additional support needs as part of an individual case work approach, to include a mainstream focus of improving teaching and learning experiences which will benefit all pupils. Indeed developing, implementing and evaluating intervention programmes, as well as critically analysing the research base of interventions that are already being delivered in schools are key tasks where Educational Psychologists can support local education authorities (HMIe, 2011). The findings highlight the value of psychological services and individual EPs carrying out small scale research, evaluating outcomes and exploring processes in order to add to our knowledge of the interventions we deliver.

The use of small-n experimental design in this project and the range of possible analysis that can be carried out by randomising the starting point of an intervention is a simple, yet effective methodology that is not currently widely used in EP practice. Given the nature of a range of EP tasks that can often involve complex work, time intensive work with a limited number of clients this methodology may be worth consideration in a range of research projects.

5.5 CONCLUSIONS

The literature review demonstrated that while VIG has been utilised for a varied range of purposes across contexts, the evidence base would benefit from further development. This is particularly the case with VIG applied in school contexts. This thesis explored an innovative application of VIG with groups of child clients in order to attempt to improve their participation in authentic group work settings. It addresses the challenge set by HMIe (2011) for EPs to demonstrate a focus beyond health and well-being and to apply psychological skills, knowledge and expertise to make a greater contribution to improve teaching and learning experiences.

This thesis makes a valuable contribution to the evidence base for VIG with children as clients. Participant evaluation demonstrated high levels of client satisfaction and acceptability of the intervention. Pupils and their teachers attributed a range of benefits directly to VIG including improved conflict resolution and peer relationships, increased group participation, engagement with learning and pupil confidence.

In addition to positive client evaluation, this study is unique in reporting observable pupil behaviour change in a VIG intervention, over a short time period. Changes observed relate to attuned responses and the reduction of conflict between group members. The behaviour changes were noted in video observations, evaluation by a group of ‘expert’ EPs and analysis of changes in pupil dialogue.

This thesis has key implications for EPs in offering a new application of VIG. It lays the foundation for future researchers to explore the limits of VIG with child clients and to further investigate the change process during shared reviews to further refine the delivery of the intervention.

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APPENDICES

Appendix 1- Principles of Attuned Interactions and Guidance

Principles of attuned interactions and guidance

Being attentive	- Looking interested with friendly posture - Giving time and space for other - Turning towards - Wondering about what they are doing, thinking or feeling - Enjoying watching the other
Encouraging initiatives	- Waiting - Listening actively - Showing emotional warmth through intonation - Naming positively what you see, think or feel - Using friendly and/or playful intonation as appropriate - Saying what you are doing - Looking for initiatives
Receiving initiatives	- Showing you have heard, noticed the other's initiative - Receiving with body language - Being friendly and/or playful as appropriate - Returning eye-contact, smiling, nodding in response - Receiving what the other is saying or doing with words - Repeating/using the other's words or phrases
Developing attuned interactions	- Receiving and then responding - Checking the other is understanding you - Waiting attentively for your turn. - Having fun - Giving a second (and further) turn on same topic - Giving and taking short turns - Contributing to interaction / activity equally - Co-operating - helping each other
Guiding	- Scaffolding - Extending, building on the other's response - Judging the amount of support required and adjusting - Giving information when needed - Providing help when needed - Offering choices that the other can understand - Making suggestions that the other can follow
Deepening discussion	- Supporting goal-setting - Sharing viewpoints - Collaborative discussion and problem-solving - Naming difference of opinion - Investigating the intentions behind words - Naming contradictions/conflicts (real or potential) - Reaching new shared understandings - Managing conflict (back to being attentive and receiving initiatives with the aim of restoring attuned interactions)

Appendix 2- Study Information and Consent Form

Can Video Interaction Guidance Support Children's Participation in Group Work Lessons?

Psychological Service **Department of Psychology**

(X Council logo)

Introduction
I am an educational psychologist and have been working in local schools in X Council for over 4 years. This year I am carrying out a doctoral research project at Strathclyde University, supervised by Professor Jim Boyle.

What is the purpose of this investigation?
I am investigating whether an intervention called 'video interactive guidance' (VIG) can help children become better at taking part in group work. VIG involves being filmed and then watching and talking about the film of you working.

Do you have to take part?
No! Taking part is voluntary and your child will only take part if you and your child agree. You will not be asked to give a reason if you don't want your child to take part. Even if you agree to take part at this point you can change your mind at any point during the project.

What will your child do in the project?
Every child taking part will be asked to complete 2 short questionnaires which will take about 20 minutes. The questionnaires will ask their views on their class and working with others.

1 group in the class will then be drawn at random to take part in some further work. This will be done by putting all children's names into a draw and then choosing 4 children to form a group. These children will be filmed working with their group for 10 minutes, once a week for 11 weeks, during a normal class lesson. The group of children will then meet with me on 4 separate occasions to watch short video clips of them working and discuss what was going well. This will take part in school and the time will be different each week. At the end of the project the group will be asked their views on this work.

Why has my child been invited to take part?

Your child is in a school where many of the lessons involve children working in pairs or in groups. This project aims to investigate how we can make this type of learning as helpful as possible.

Is there anything I should be worried about?
If your child is selected for the video work it is worth knowing that while most children really enjoy this type of work occasionally some children can be a bit nervous when first watching video of themselves. I will take care to reassure your child but if they decide they wish to stop they can do so at any point.

What happens to the information in the project?
The questionnaires will be anonymised. This means that anything your child says in the questionnaire will not be linked to them. All videos will be analysed to see if there are any changes in how the children work together over the course of this project. Again no information from this will be linked to your child. The videos may at a later date be used for staff training if we think this might help staff who work with children in schools. The videos and questionnaires will be kept in a secure location and will be destroyed after 5 years.

The University of Strathclyde is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998.

Thank you for reading this information – please ask any questions if you are unsure about what is written here.

What happens next?
If you are happy for your child to be involved please discuss this with your child. If they are also happy to take part then you are both asked to sign the consent form attached.

When the project is complete you will receive a newsletter summary of the results to tell you how the project went. If you want any further information I will arrange to meet with parents to discuss this further.

This investigation was granted ethical approval by the Psychology Department ethics committee at the University of Strathclyde.

If you have any questions/concerns, during or after the project, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Dr Rasmussen
Psychology Department Ethics Committee, University of Strathclyde, Graham Hills Building, 50 George Street, Glasgow, G1 1QE
Telephone: 0141 548 2575

Email: s.a.rasmussen@strath.ac.uk

Researcher Contact Details:
Laura Walmsley, (work address and telephone number).

Chief Investigator Details:
Professor James Boyle, University of Strathclyde, 16 Richmond Street, Glasgow, Email: j.boyle@strath.ac.uk Telephone: 0141 548 2584

Consent Form

Can Video Interaction Guidance Support Children's Participation in Group Work Lessons?

Psychological Service **Department of Psychology**

(X Council Logo)

I confirm that I have read and understood the information sheet for the above project and the researcher has answered any queries to my satisfaction.
I understand that my child's participation is voluntary and that I am free to withdraw my child from the project at any time, without having to give a reason and without any consequences.
I understand that I can withdraw my child's data from the study at any time.
I understand that any information recorded in the project will remain confidential and no information that identifies my child will be made publicly available. The exception being if video is used for staff training purposes.
I consent to my child being a participant in the project.
I have discussed this with my child and they have also given their consent.
I consent to my child being video recorded as part of the project.

(Print Parent's Name)	I hereby agree that my child can take part in the above project
Signature of Parent/guardian:	Date
(Print Child's Name)	I hereby agree that I am willing to take part in the above project
Signature of child:	Date

Appendix 3- Teacher Information Sheet

What is needed from class teachers/school?

- 1 willing and interested P6 teacher per school!
- 1 hour briefing with class teacher (1 from each of 3 schools)- twilight session (3.15-4.15) with all 3 teachers preferably but if more convenient at individual appointment in class teacher's school
- Distribute information sheet and permission slips to whole class and encourage slips to be returned
- Provide EP access to class for 30 minutes to meet pupils and complete the class questionnaires (for those pupils with permission to take part)
- At class visit class teacher and EP to draw names of 4 pupils to form new group for next term (from pool of pupils with permission to take part). Other class groups arranged by teacher as normal
- Class teacher to complete a co-operative learning questionnaire on the group taking part in the video work pre and post-intervention. Approximately 5 minutes per questionnaire, therefore 40 minutes in total
- Class teacher to complete 3 STOP group work lesson self-evaluation questionnaires over the course of the term. Approximately 10 minutes per questionnaire, therefore 30 minutes in total
- Class teacher to deliver co-op learning/group work lesson weekly. Area of curricular focus to be agreed by all 3 teachers taking part, suggestions are maths problem solving or science. During lesson EP or research assistant will film the selected group for a total of 10 minutes.
- Provide a room/quiet space for EP to meet with group of pupils a minimum of 4 times in term between film 3-11 for up to 45 minutes to have a feedback session
- Meet with EP on individual basis to be interviewed about experiences of the project in summer term (max 1 hour)
- Allow access to pupils for focus group in summer team (max 1 hour)

Week Begin-ning	Filming-	Feedback Session	STOP lesson self-evaluation- Teacher	Co-op learning pupil evaluation- Teacher	Pupil questionnaires- whole class	Permission slips to whole class
6th Dec						*
13th- 22th Dec				Teacher completes on 4 pupils	* EP to visit class for 30 mins	
10th Jan	1		1st self-evaluation			
17th Jan	2					
24th Jan	3					
31st Jan	4	4-8 feedback sessions from start point randomly chosen between film 3 and film 11				
7th Feb	5		2nd self-evaluation			
14th Feb	School holiday no tasks this week					
21st Feb	6					
28th Feb	7					
7th March	8		3rd self-evaluation			
14th March	9					
21th March	10					
28th March	11			Teacher completes on 4 pupils		
18th-25th April	Discussion with group of pupils who were filmed (60 minutes). Individual discussion with class teacher (60 minutes)					

Appendix 4- Teacher Interview Schedule

Section 1- Group Work

1) Why do you use group work lessons? What benefits do you see for children participating in group work?
(Academic, non-academic, develop roles)

2) What opportunities do children in your class have to participate in group work?
(Frequency, type of group work, curricular area)

3) What do you consider when setting up groups for group work lessons?
(Behaviour, ability, friendship)

4) How do you decide which activities you are going to approach with group work as opposed to whole class, individual or other types of lesson?

5) What do you see as your role while children are engaged in a group work task?
(Monitoring, directing, modelling, teaching)

6) What if any formal training have you had in teaching/delivering group work?

Section 2- Views on pupils skills

1) What skills do you think children need to take part in group work lessons?

2) How do you think children develop these skills?

3) What challenges do you think children might face when taking part in group work lessons?

4) Overall how skilled do you think the children in your class are at group work?

Section 3- Perceived impact of project

1) What do you think are the strengths of the 4 targeted pupils in group work?

2) Did you perceive any changes in the 4 targeted pupils' skills throughout the project? If yes can you say in what way?

3) Did any of these changes impact into other areas of their learning? If yes can you say in what way?

4) In terms of future development, do you think the work I was doing with the children is something that teachers would be able to do if they were given the relevant training?

Appendix 5- Pupil Focus Group Questions

Section 1- Group Work

1) Why do you think teachers do group work lessons instead of having everyone working on their own or having a whole class lesson?

2) What chances do pupils in your class have to take part in group work? (Frequency, type of group work, curricular area)

3) How much do you think pupils enjoy this type of lesson?

4) How do you think your teacher decides who goes into what group?

5) What's the best type of group for you to learn in? If not generated from q4. Prompt with friends, with same maths group etc.

6) What does the teacher normally do while you're working in groups?

Section 2- Views on group work skills

1) What skills do you think pupils need to take part in group work?

2) How do you think pupils learn these skills?

3) What problems do you think pupils might have when taking part in group work?

Section 3- Perceived impact of project

1) How good are the pupils in your class at group work?

2) What are the strengths of your group in group work lessons?

3) During the time I've worked with you do you think your group has got better at group work? If group answer 'yes' follow up with: Can you give me an example?

4) Did this project help you in any other way to do with your learning? Can you give me an example?

Appendix 6- Video Observation Coding Schedule 1

Group: Pupil: Lesson:

	Activity level			**Dialogue Codes**							**Interactants**			
	Aon	Aprep	Aoff	Prop	Exp	Inst		Oth	UC	None	I	T	Cog	Cdg
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
Total														

Dialogue	Prop-proposition	Child suggests an idea or course of action, or otherwise makes some form of statement that someone else could disagree with
	Exp-explanation	Child offers an explanation of a proposition
	Inst-instruction	Child tells someone to say or carry out some action
	Oth-other	Dialogue not covered by above categories
	UC- inaudible	Uncodable or inaudible
	None	Child is silent
Interactants	I	Child is working on own
	T	Child is engaged with (i.e. talking or listening to) teacher or classroom assistant etc.
	Cog	Child is engaged with another child in same group or in close proximity in an ordinary lesson

	Cdg	Child is talking with another child in a different group or further away from them in an ordinary lesson
Activity level	Aon	Engaged completely with the task. Child whom target is interacting with may be on or off task
	Aprep	Classroom preparation and getting ready to carry out task
	Aoff	Not engaged with the task

Appendix 7- Video Observation Coding Schedule 2

Group: Pupil: Lesson:

	Being Attentive	'Yes' Body	'Yes' Verbal
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Total			

Being attentive- e.g. looking at someone, returning eye contact, turning to respond, following someone's movement of gaze. E.g. of opposite behaviour; turning away, looking away

Yes Body- Responding with nod, responding with smile, friendly facial expression, friendly tone of voice, friendly posture.

Yes Verbal- Talking to someone, labelling, naming, saying yes/uh huh, saying what you feel, and asking a question

Appendix 8- Video Observations Methodology

- Repeat observations of each individual child in of each of the 3 groups (12 children in total)
- Observation window approach of 40s per entry (12s tuning in, 16s observing, 12s code)
- Each child observed for 10 entries in total or 400seconds
- Each video in 10 minutes slots- ignore first 3 minutes to allow child to settle into lessons and then start coding
- New sheet for each pupil in each of 10 films (120 total)

What to record- Coding 1

For each entry need to record

- 1 or more dialogue codes as appropriate
- Only 1 interactants code. If more than one type of interaction record which ever type of interaction lasted longest in that time frame
- Only 1 activity code. Again if more than one type of interaction record which ever type of activity was most prevalent in that time frame

What to record- Coding 2

For each entry need to record

- Score as 1 if behaviour observed during window and 0 if behaviour not observed for each of 3 categories

Appendix 9- Photograph from Content Analysis

Appendix 10- Educational Psychologist Group Activity

Educational Psychologist Group Activity

Name: _____

VIG trained: Yes/No (delete as appropriate)

Group:____

Which video do you think showed the children participating most effectively in a group work lesson: First/Second (delete as appropriate)

What did you observe that led you to make this conclusion?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____