Is Motivational Interviewing an Effective Intervention for Improving the Behaviour of Targeted Primary Aged Pupils?

Charlotte Mahon

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Abstract

Motivational Interviewing (MI) is a treatment approach which over the last 25 years has received increasing evidentiary support. In recent years efforts have been made to explore the effectiveness of MI in educational settings. Research has highlighted favourable outcomes in terms of increasing academic achievement (Strait, Smith, McQuillin, Swan and Malone, 2012, Terry, Strait, McQuillin and Smith, 2014), reducing levels of obesity (Flattum, Friend, Neumark-Sztainer and Story (2009) and improving teacher-student interactions (Wells, Jones and Jones, 2015) in secondary and higher education settings. However, a literature search revealed that only one published study, (Atkinson and Cryer, 2015) adopting a case study methodology, has investigated the use of MI with Primary aged pupils.

The aim of the current study was therefore to investigate whether a 4/5 week MI intervention could improve the disruptive classroom behaviour of six primary aged pupils. A Single Case Experimental Design (SCED) was implemented adopting an AB design. Repeated observation measures were taken to assess the efficacy of the MI intervention. This data was triangulated with a pre and post measure of class teacher's perception of pupil's behaviour, assessed using Goodman's (1997) Strength and Difficulties Questionnaire (SDQ).

The results of the study show improvements in three of the participants' disruptive classroom behaviour, highlighted by the repeated observation measure. In the remaining three cases there were no clear changes in any of the targeted behaviours that could be reliably attributed to MI. In addition the single case data is supported by a reduction in the Total Difficulties Score for all pupils on the SDQ (Goodman, 1997). Limitations of the study are highlighted and implications of the findings in relation to Educational Psychology practice are discussed.

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Chapter 1: Introduction

1.1 Introduction to Current Research

In recent years the promotion of pupil psychological wellbeing, mental health and behaviour in school settings has become increasingly high profile (Frederickson and Cline, 2009). The topic of behaviour in schools is a well debated and frequent focus in the media, with teachers reporting varying degrees of severity in responding to disruptive behaviour. A survey of 2,575 teachers in the UK conducted by Neill (2001) aimed to explore teachers' experiences of both discipline and behaviour. The survey found that 69% of respondents experienced disruptive behaviour from pupils frequently, and 47% of respondents reported persistent disruptive behaviour at least weekly.

Throughout the duration of the Doctorate in Applied Educational Psychology course, and previous employment, the researcher has had the opportunity to work with a wide range of children and young people and has developed an interest in many areas. A keen interest of the researcher's however, is the way in which practitioners use techniques, such as Motivational Interviewing (MI), to allow children and young people to explore and understand situations that are particularly pertinent to them in a therapeutic manner. The researcher was first introduced to MI during her second year of the Doctorate course and has had the opportunity to practice the technique with fellow trainees during seminar sessions and apply the techniques to individual casework whilst out on placement. Whilst becoming more familiar with the processes associated with MI and tentatively examining the research evidence it became apparent that the use of MI with younger, primary aged pupils, was significantly under researched, at that time being limited to one unpublished Doctorate thesis qualitative study (Cryer, 2012).

During years two and three of the Doctorate course the author was placed within a local authority that had an interest and deep ethos around understanding behaviour and working with school staff to establish the different functions of an individual's behaviour. The researcher became interested in this area of work and started to research interventions designed to help individual children and young people to understand and change their behaviour.

Recent government reports have focused on tackling low level disruption in UK classrooms with evidence suggesting that teachers, parents and carers are concerned about the frequent loss of learning time through low level but persistent disruptive behaviours (Ofsted, 2014). The researcher experienced a similar tale whilst working in her patch of schools with school staff complaining about the negative impact low level disruptive behaviour was having on their classroom environments. This evidence inspired the researcher to examine whether MI could be used effectively to improve low level disruptive classroom behaviour.

1.2 Summary of Chapters

Chapter 2: The Literature Review provides a thorough overview of the key theoretical and research papers that are important to the current study.

Chapter 3: The Methodology section provides a detailed account of the design and implementation of the current research. Ethical considerations are highlighted and discussed.

Chapter 4: The Results section presents visual analysis for the 6 single case experiments and is accompanied by pre and post data in the form of Goodman's (1997) Strength and Difficulties Questionnaire (SDQ).

Chapter 5: The Discussion outlines and considers the key findings drawn from the six case studies. These findings are then interpreted with reference to existing theory and research. Limitations of the research are acknowledged and the consequences discussed. A Conclusion then provides a summary of the current research.

Chapter 2: Literature Review

2.1 Introduction to Literature Review

This chapter aims to review literature relevant to the current study. After highlighting the researcher's literature search procedure, the review will provide a brief overview of educational psychology and therapeutic interventions, before raising the topic of disruptive behaviour in schools and interventions that are available to change pupil behaviour. The chapter will then discuss theories of motivation before introducing Motivational Interviewing (MI). Research evidence is then presented examining the efficacy of MI with adults, children and young people in clinical settings. Attention is then turned to how MI has been applied to education settings and adapted for use with younger children. The literature review will close with conclusions and an introduction to the research questions and hypotheses.

2.2 Literature Search

To find journals appropriate for the literature review the researcher used the search engines ERIC and PsychINFO. Using the search term 'motivational interviewing and education' on 3.11.2015 with 101 papers identified on ERIC and 507 on PsychINFO. Of the 101 papers identified on the ERIC database, 45 papers had the words 'motivational interviewing' in the title. Of the 507 papers identified through PsychINFO only 28 papers had the words 'motivational interviewing' in the title. To ensure that a thorough search of the literature was conducted, a second search was conducted on the PsychINFO database using the search term 'motivational interviewing', this search produced 811 results.

All articles were scrutinised using the inclusion and exclusion criteria below.

Inclusion Criteria	Exclusion Criteria
• Must have the words 'motivational interviewing' in the title • Must be a study or research involving children or young people or provide an explanation of MI • Must be written in English in a peer reviewed journal	• Articles that do not include the inclusion criteria

Table 1: Highlighting the researcher's inclusion and exclusion criteria

The tables below show the search terms used and the number of results produced.

Database	ERIC
Search term	'Motivational interviewing and education'
Number of papers identified	101
Number of papers with 'motivational interviewing' in the title	45
Number of papers meeting inclusion criteria	19

Table 2: Highlighting the papers identified through the ERIC database

The 26 papers excluded from the ERIC search did not involve children or young people or provide an explanation of MI.

Database	psychINFO
Search term	'Motivational interviewing and education'
Number of papers identified	507
Number of papers with 'motivational interviewing' in the title	28
Number of papers meeting inclusion criteria	3

Table 3: Highlighting the papers identified through the psychINFO database using the search term 'motivational interviewing and education'

The 25 papers excluded from the psychINFO search did not involve children or young people or provide an explanation of MI.

Database	psychINFO
Search term	'Motivational interviewing'
Number of papers identified	811
Number of papers with 'motivational interviewing' in the title	70
Number of papers meeting inclusion criteria	11

Table 4: Highlighting the papers identified through the psychINFO database using the search term 'motivational interviewing'

The 59 papers excluded from the psychINFO search did not involve children or young people or provide an explanation of MI.

After removing duplicates the researcher identified 29 articles that matched the inclusion criteria and 5 books. The researcher has also referred to articles that were identified through the references of articles from the initial literature search.

In presenting the literature in this review the author used a funnelling approach to highlight the breadth of research that currently exists in the field of MI. The review will start by highlighting literature examining the use of MI in clinical settings with adults before moving to review literature relating to the use of MI with adolescents, again within the clinical field. The author will then present literature which has evaluated the use of MI within education, primarily with secondary aged pupils before finishing with a synthesis of research that has evaluated the use of MI with primary aged pupils.

2.3 Educational Psychology and Therapeutic Interventions

Rollnick and Miller (1995) described Motivational Interviewing (MI) as a therapeutic intervention. The first section of this literature review will therefore briefly discuss EP's use of therapeutic interventions within education. A therapeutic intervention can be defined as an intentional interaction which is expected to contribute to a positive outcome for an individual (Renwick and Spalding, 2002).

Atkinson, Bragg, Squires, Wasilewski and Muscutt (2011) highlight that the role of the EP as therapeutic provider has recently attracted attention both in the UK (MacKay, 2007) and internationally (Yeo and Choi, 2011). A possible reason for this is the prevalence of mental health disorders in children and young people, which, according to the World Health Organisation (2003) is estimated to be around 20 per cent. Work carried out by Stallard, Udwin, Goddard and Hibbert (2007) highlighted that the specialist CAMHS workforce trained to deliver therapeutic interventions to children and young people currently lack the capacity to deliver such services. As a result of this Stallard et al (2007) have suggested that EPs, as applied psychologists with knowledge of both child and adolescent development, as well as educational psychology, are well placed to deliver therapeutic interventions in schools.

Efforts have been made to examine the extent to which EPs use therapeutic interventions in their practice. For example, Atkinson et al (2011) surveyed 455 EPs in four hundred and fifty five local authorities (LAs) in England, Northern Ireland, Scotland and Wales. Encouragingly, ninety two percent of respondents indicated that they used therapeutic interventions as part of their current practice, and 82.9% specifically in direct work with children and young people. Participant's indicated that MI was the fourth most popular therapeutic intervention behind solution focused brief therapy; cognitive behavioural therapy and personal construct psychology. Respondents were also asked to identify facilitators and barriers to EPs engaging in therapeutic practice. Access to training was highlighted as the most important facilitating factor followed by individual EPs personal interest in therapeutic interventions. Barriers included the limitations of EPS time allocation models, service capacity and other priorities identified by stakeholders.

It therefore appears that EPs are well placed to deliver therapeutic interventions to children and young people experiencing difficulties in school. It is important to acknowledge however, that EPs often have a workload which does not allow for therapeutic work. For example, Baxter and Frederickson (2005) highlight that EPs have an important statutory responsibility, which in the current climate often takes priority in the caseloads of EPs, meaning the implementation of weekly therapeutic interventions is often not feasible. Atkinson et al (2011) suggest that to promote the use of therapeutic interventions by EPs, and highlight the positive impact they can have on the emotional health and well- being of children and young people, further systematic research into the effectiveness of therapeutic interventions would be useful to highlight the contribution that EPs can make to this area. The current research therefore aims to contribute to this evidence base.

2.3.1 The Therapeutic Relationship

Lambert and Barley (2001) argue that a key component in the provision of therapy is the nature of the therapeutic relationship. They suggest that common factors such as empathy, warmth and the therapeutic relationship often correlate more highly with client outcome than the therapeutic intervention itself. Lambert and Barley (2002) found that common 'therapeutic' process factors account for 30% of the variance in adult treatment outcomes, twice the amount of variance accounted for by the specific

therapeutic technique used. In addition, further empirical evidence has suggested that one common process factor, the 'therapeutic alliance', defined broadly as the collaborative bond between therapist and patient (Krupnick et al, 1996), is among the most robust predictors of treatment outcomes for both adults and significantly for the current research, youth clients (Horvath, 2006 Shirk and Karver, 2003).

Research investigating relationship variables with adults has been conducted by the Task Force on Empirically Supported Therapy Relationships to determine which relationship variables are evidence-based (Norcross, 2002). The Task Force constructed and evaluated a list of empirically supported, manualised psychological interventions for adults based on Randomised Controlled Trials. The Task Force then aimed to identify elements of effective therapy relationships. This was accomplished by reviewing the extensive body of empirical research and judging whether elements were 'demonstrably effective', 'promising and probably effective' or had 'insufficient research to judge'. The Task Force concluded that effective therapeutic relationship variables in adult treatment were collaboration, the therapeutic alliance, cohesion in group psychotherapy and therapist empathy. However, the Task Force did not investigate research from the youth treatment field, highlighting a limitation of the evidence. Researchers (e.g. Shirk and Karver, 2003) argue that therapeutic relationship variables may be more critical in youth and family therapy, as child and adolescent clients typically enter treatment unaware of their problems, in conflict with adults, and/or resistant to change. Karver, Handelsman, Fields and Bickman (2005) suggest that developing strong therapeutic relationships with young clients "may facilitate engagement and lessen resistance to treatment by providing a stable, accepting and supportive context within which therapy may take place" (p. 51).

2.4 Disruptive Behaviour in Schools

Problem behaviour in the classroom reduces children's ability to concentrate and absorb information; it unsettles children and can cause immense stress for teachers. However, defining disruptive and poor behaviour in schools is not a straightforward task and researchers (e.g. Cameron, 1998 and Watkins and Wagner, 2000) suggest that there are many alternative definitions. Generally, the types of classroom misbehaviour cited in the literature range from low-level misbehaviour to much rarer

assaults on both pupils and staff. It is important to highlight that there is mixed evidence on the extent of difficult behaviour reported by teachers. For example, a survey of 4,536 teachers showed that generally pupils are regarded as behaving well, with around 70% reporting good behaviour (Wilson et al, 2007). However, an earlier survey carried out by Neill (2001) found that 69% of members of the National Union of Teachers (NUT) reported experiencing disruptive behaviour on a weekly or more frequent basis.

Interestingly for the context of the current research, much of the literature suggests that it is low-level and frequent disruption that is the most common form of pupil misbehaviour. For example, Watkins and Wagner (2000) describe low-level disruption as one of the most frequently occurring troublesome behaviours and suggest that 'talking out of turn' is mentioned by teachers as a behaviour that is particularly difficult to deal with. In addition, surveys carried out by the Association of Teachers and Lecturers (ATL) in 2010 and 2011 reported that among both sexes, low level disruption such as talking and not paying attention was the most problematic behaviour experienced by staff in schools and colleges. In addition, the 2010 survey highlighted that nearly 90% of staff reported to have dealt with frequent low level disruptive behaviours. Finally, Wheldall and Merrett, (1998) completed a study which aimed to investigate the classroom behaviours that primary school teachers find the most troublesome. A questionnaire enquiring into classroom behaviour problems was distributed to a 25% random sample of all infant and junior schools in a West Midlands Local Educational Authority (LEA) and 198 teachers responded. 51 % of teachers who responded believed that they were spending more time than they should on problems of 'order and control'. The most troublesome classroom behaviours identified were 'talking out of turn' followed by 'hindering other children'.

More recently, Sir Michael Wilshaw, chief inspector of Ofsted, launched a campaign against disruptive behaviour in the classroom with the publication of the report 'Below the Radar: Low level disruption in the country's classrooms' (Ofsted, 2014). The report describes findings from a survey which highlights that teachers, parents and carers are concerned about the frequent loss of learning time through low level but persistent disruptive behaviours. The report draws on evidence from nearly 3,000 Ofsted inspections between January and July 2014 and summarises the findings from

two surveys commissioned by Ofsted to gather the views of parents and teachers. The report led to the identification of 10 leading types of school based disruption highlighted in the table below.

Main types of disruption identified by teachers	**Percentage of teachers reporting this**	**Percentage of parents reporting this**
Talking and chatting	69	46
Disturbing other children	38	39
Calling out	35	14
Not getting on with work	31	17
Fidgeting or fiddling with equipment	23	10
Not having the right equipment	19	-
Purposely making noise to gain attention	19	17
Answering back or questioning instructions	14	11
Using mobile phones	11	-
Swinging on chairs	11	-

Table 5: Showing leading types of school based low level disruption - teachers and parent's viewpoints (adapted from Ofsted, 2014)

Of relevance to the current study, Ofsted (2014) report that there were important differences between the opinions of primary and secondary teachers surveyed. Common problems identified by primary teachers were calling out, disturbing other children and fidgeting with equipment.

2.4.1 The Impact of Disruptive Behaviour in Schools

According to a survey of National Association of Schoolmasters Union of Women Teachers (NASUWT, 2009) low level disruption was leading to the loss of an average of thirty minutes teacher time per teacher per day. Garner (2010) suggests that there are a number of negative effects associated with low level disruptive behaviour these include:

- Preventing children's participation in educational activities
- Isolating children from their peers
- Affecting other pupil's learning
- Placing excessive demands upon teachers, staff and resources.

It is important to highlight the potential bias that may be present in some of the sources highlighted above (e.g. the NUT, ATL and Ofsted). It is possible that teachers and unions may try to represent/attribute the issue of difficult behaviour away from themselves to others. In addition, it could be argued that Ofsted may represent the problem as one of schools for their own agenda and purposes. Caution should therefore be taken when examining data from these sources.

2.4.2. Interventions to Change Pupils Behaviour in Schools

Evans, Harden and Thomas (2003) conducted a systematic review which aimed to explore the effective approaches used in mainstream schools to challenge and change disruptive behaviour. The authors reviewed 28 studies which indicated that a number of strategies, based on a range of theoretical frameworks, had a positive impact on pupil behaviour. The approaches reviewed in the study included behavioural strategies, Cognitive Behavioural Therapy (CBT), systemic models and psychotherapeutic approaches. A number of positive effects were associated with behavioural strategies and systemic models. Studies exploring the effectiveness of CBT all reported positive effects, although follow up data was not collected in the reviewed studies to ascertain the longer term impact on behaviour. Interestingly, no studies on psychotherapeutic interventions were included in the review (due to a lack of methodological quality) highlighting a gap in the literature.

Interventions associated with improving disruptive classroom behaviour have been explored within the field of educational psychology. Broussard and Northrup (1997) investigated the use of functional analysis to examine the conditions that led to

improvement in disruptive behaviour. Pupils exhibiting such behaviours were rewarded for appropriate behaviour by being allowed to earn time with a peer of their choice. The researchers found that using peers to reinforce appropriate behaviour reduced the occurrence of disruptive behaviour.

The behavioural perspective assumes that young people learn to behave in a particular way because such behaviour has been reinforced in the past. Alberto and Troutman (1999) suggest that within a school setting, if a child perceives that a particular behaviour is rewarding then they are likely to repeat it. Eventually this behaviour can become over learned and automatic. Interventions adopting a behavioural approach involve changing the environmental conditions. In understanding a young person's emotional and behavioural difficulties the behavioural approach encourages the identification and clarification of the specific behaviours that have been identified as undesirable, so that features in the environment that support the undesirable behaviour can be used to help the pupil unlearn it.

2.5 Motivation

According to Kleinginna and Kleinginna (1981) motivation can be defined as an internal state or condition that aims to activate a particular behaviour and give it direction. The literature highlights that there are several theories of motivation. Some of the main theories of motivation that are particularly relevant to education are the self-efficacy, achievement goal, and self-determination theories. Each of these will be briefly described below.

According to Bandura (1997) self-efficacy refers to someone's belief in his or her capacity to execute specific behaviours that are necessary in order to achieve. Bandura (1997) believed that a person's self-belief in their capabilities can influence their choice of activities, persistence and resilience to adversity. Studies that have investigated self-efficacy within the field of educational psychology have found that students with high self-efficacy engage more effectively in learning tasks, resulting in better academic performance and are also more likely to invest effort (Lau and Roeser, 2002, Lau, Liem and Nie, 2008).

Maehr and Zusho (2009) suggest that achievement goal theory specifies the kind of goals that direct achievement related behaviours. The theory aims to investigate the reasons why students engage in academic work. Covington (2000) argues that school achievement is influenced by the quality of a person's cognitive self-regulation processes. This refers to an individual being actively engaged in their own learning and monitoring their progress toward completion of assignments.

Self-determination theory (Deci and Ryan, 2000) adopts a multidimensional approach to motivation. It aims to identify the general conditions that support or undermine motivation. According to Deci and Ryan (2000) the theory claims that individuals have a natural tendency towards personal development and change. Vansteen and Sheldon, (2006) agree with this viewpoint and argue that every individual has a strong inner resource which can be utilised to realise change.

According to McNamara (2009) in the UK's educational climate everyone is encouraged to "promote active pupil learning, empower pupils, engage in cooperative learning and develop non coercive pupil management skills" (p.5). It is apparent that the achievement of such aims depends primarily on a commitment and motivation from pupil's to share both the goals and aspirations of their teachers. A systematic review conducted by Powell (2004) explored the different types of learning behaviour in schools. The review found that motivation was a key variable that helps learners to begin a learning task and also significantly, to be able to stay on task. Interestingly, in addition, the review also suggested that a pupil's disaffection with school can be explained by motivation, engagement and participation.

Covington (1992) highlights that motivation is an important concept due to its central role in facilitating pupil endeavour. Covington (1992) has identified three sources of motivation which are:

1. Emotion (feelings can arise and inhibit action)
2. Cognition (thoughts trigger, sustain and inhibit action)
3. Physiology (heightened levels of adrenalin can produce fight or flight responses)

McNamara (2009) further suggests that there are internal motivational factors which contrast with the external motivational factors which, within education, primarily

consist of rewards and sanctions that are often found in teachers' whole class and individual pupil management strategies.

Within education Boekaerts (1994) argues that motivation can be described in three different ways; the superordinate level (refers to the student's general inclination towards learning), the middle level (refers to the student's inclination and attitude towards different areas of learning) and the momentary level (refers to the student's commitment to specific tasks). McNamara (2009) suggests that when students show no desire to learn at either the superordinate and middle level, and minimal inclination at the momentary level, then they can be described as "disaffected, disillusioned, alienated, passive and reluctant learners"(p.7). McNamara (2009) argues that when such pupils display behaviours which interfere with the learning and teaching processes in the classroom they are often referred to as 'disruptive' by school staff.

In some cases, it could be perceived that such pupils do not share a commitment to the goals of their teachers and schools. There is also an underlying assumption that the pupils concerned are not motivated to change and therefore their situation may be seen as "permanent and unchangeable". Fortunately however there are a number of pupil management techniques which have been developed to effect change in pupil behaviour. One such technique is Motivational Interviewing.

2.6 Introduction to Motivational Interviewing

Motivational Interviewing (MI) is a treatment approach which over the past 25 years has received increasing evidentiary support. The technique combines characteristics of client-centered therapy with cognitive behavioural strategies that are designed to elicit behaviour change. Rollnick and Miller (2002) described MI as "a client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence" (P.25). Frey et al (2011) suggest that MI is founded on the belief that how an individual interacts with another has a significant effect upon their intrinsic motivation that can lead to better behavioural outcomes. Unlike other therapeutic interventions MI does not assume that a client is at a stage where they are ready to change their behaviour.

The term ‘Motivational Interviewing’ was first coined by Miller in 1983. He wrote a paper entitled ‘Motivational Interviewing with problem drinkers’. Coming from a counselling background, Miller was interested in investigating the necessary components needed in order for an individual to change their behaviour. MI was developed as a way to help people work through ambivalence and commit to change (Miller, 1983). The process combines both a supportive and empathic counselling style (Rogers, 1959) with a direct method to encourage change through resolving ambivalence. The MI approach is based upon principles of experimental social psychology and addresses processes such as attribution, cognitive dissonance and self efficacy. The model of MI places heavy emphasis on individual responsibility and internal attribution of change (Miller, 1983). The facilitator aims to achieve cognitive dissonance by skilfully encouraging the client to contrast their problem behaviour with its negative consequences.

2.6.1 Principles of MI

The spirit of MI can be described in terms of three overarching aims pertaining to its therapeutic position and four practical principles pertaining to what the practitioner will actually be doing in the sessions. The overarching aims are autonomy, collaboration and evocation, each of these is detailed below.

Autonomy

Frey et al (2011) comment that autonomy is the most persistent theme in MI practice. This is where practitioners clearly support the client’s choices, while also ensuring that the client is ultimately in charge of the change process. Any responsibility for change is left with the client regardless of the views of the professionals. McNamara (2009) suggests that any arguments for change should be ultimately presented by the client and not the counsellor.

Collaboration

Researchers (e.g. Frey et al, 2011) highlight that collaboration becomes apparent in MI sessions when the discussion is led by the client’s ideas and when the client takes a lead role in the conversation. Moyers, Martin, Manuel, Miller and Ernst (2007) state that “clinicians high in collaboration appear to be dancing with their clients during an interview – one moment leading, the next following – in seamless motion”

(p.6)Frey et al (2011) argue that this can only work successfully when the behaviour change matches with the clients perception of their ideal self.

Evocation

This refers to the assumption that MI is not about imparting information but rather "...finding things within the person and drawing them out" (McNamara, 2009, p.19). During this process the practitioner begins to elicit possible concerns from the client regarding their behaviour. The practitioner does this by being inquisitive in nature (e.g. asking the client to explore their behaviours and associated consequences).

In addition to the three underlying constructs of MI described above, researchers have suggested that commitment to a MI approach must be accompanied by a clear sense of operating principles. Miller and Rollnick (2002) suggest that four counselling principles infuse the techniques and strategies used; these are express empathy, develop discrepancy, roll with resistance and support self efficacy.

Box 1: The principles of MI

- **Express empathy**
  It is important that the practitioner seeks to understand their client's feelings in a non-judgemental manner.
- **Develop discrepancy**
  An aim of MI is to help the client to develop a discrepancy between how things currently are and how they would like things to be in the future.
- **Rolling with resistance**
  Miller and Rollnick (2002) posit that a client's resistance can be positively reframed to create a momentum for change.
- **Supporting self-efficacy**
  Miller and Rollnick (1991) suggest that a client can be encouraged by the success of others or by their own previous achievements.

The model came to fruition through the publication of an influential article entitled "Transtheoretical Therapy: Towards a more integrative model of change". Prochaska and DiClemente (1982) conducted a comparative analysis of 18 leading systems of therapy which led them to the conclusion that there were five central processes of

change. This conclusion led to the development of the stages of change model. Researchers refer to this as the Transtheoretical model (TTM). The model is presented in figure 1.

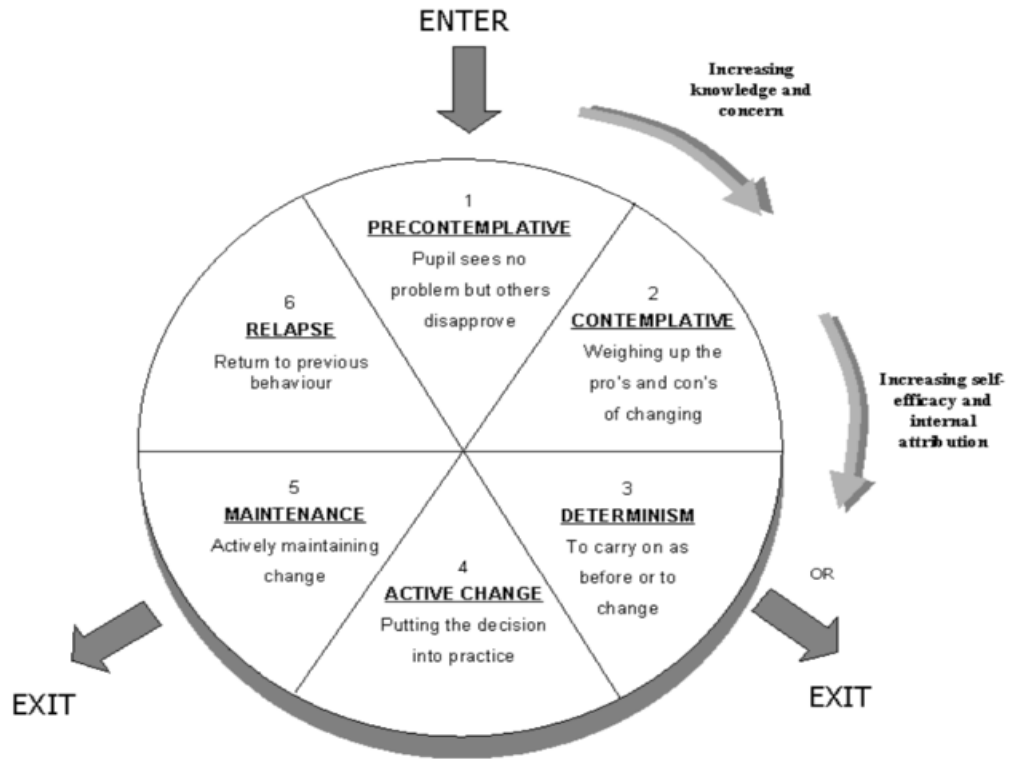

Figure 1: The Model of the Stages of Change

The TTM has been described as consisting of 5 or 6 stages (depending on whether or not the 'decision to change' is viewed as a distinct change). The researcher will now briefly describe each of these stages.

Stage 1: Precontemplative

Miller and Rollnick (1991) argue that at this stage the client does not acknowledge that a problem exists. This might be because the client may not be conscious or

aware that a problem exists or may simply not be at the stage where they are willing to admit that the situation is problematic. Miller and Rollnick (1991) argue that there are four reasons why a client may be in the Precontemplative stage. The four categories are:

- Reluctant precontemplators
- Resigned contemplators
- Rationalising contemplators
- Rebellious contemplators

McNamara (2009) has investigated these four categories further and describes how young people may present in each category. The reluctant precontemplators are those who do not want to consider change, they lack explicit awareness about the impact that their behaviour is having. In such cases McNamara (2009) highlights that it is important that the practitioner increases awareness and knowledge about the facts of the problem. Resigned contemplators are described by McNamara (2009) as "...people who appear to have given up on the possibility of change and who are resigned to the status quo" (p.13). McNamara (2009) suggests that an appropriate counselling strategy here is to "promote self-efficacy and internal attribution." (p.13). The next category, the rationalising precontemplators are those people who are capable of identifying reasons why the problem is not a problem. In this case McNamara (2009) highlights that the practitioner skills of empathy and reflection are important. Finally, the rebellious precontemplators are according to McNamara (2009) those people who are hostile and highly resistant to change.

Stage 2: Contemplative

At this stage Miller and Rollnick (1991) believe that the client is willing to consider the problem and also the possibility that change may be both desirable and beneficial.

Stage 3: Determinism

At the determinism stage Miller and Rollnick (1991) argue that the client is at a stage where they want to take action to cease engaging in problematic behaviour and/or engage in positive behaviour. McNamara suggests that at this stage the client

"appears ready for and committed to action" (p.15). Miller and Rollnick (1991) however point out that this stage does not mean that any behaviour change will be sustained.

Stage 4: Action

Miller and Rollnick (1991) state at this stage the plan is collaboratively developed which leads onto the action. Here a client begins to consider ways in which they might achieve the change that they desire.

Stage 5: Maintenance

At this stage according to Miller and Rollnick (1991) the client is implementing and following the plan and also will be displaying their change behaviour. McNamara (2009) explains that this stage acts as a "test" of the success of the intervention programme as in most cases the client does this without the direct support of the practitioner.

Stage 6: Relapse

McNamara (2009) argues that the inclusion of a 'relapse' stage adds validity to the model as it "reflects the reality that even when change is achieved and sustained there always exists the possibility that relapse may occur" (p.17). Miller and Rollnick (1991) suggest that this stage allows the client to see that 'relapse' is part of the change process which arguably normalises it.

The relationship between MI and the TTM is complex. McNamara (2009) suggests that "the TTM is not part of MI but essential to it" (p.12). He argues that MI strategies have the aim of facilitating a client to change a behaviour in which they have no inclination to change and that a therapist can 'calibrate' where a client is in terms of readiness to change with reference to the TTM.

Rollnick and Miller (2009) published a paper entitled "Ten things that Motivational Interviewing is not". The number one assertion is that "MI is not based on the Transtheoretical Model" (p.131). Miller and Rollnick (2009) acknowledge that this confusion is understandable because both approaches "grew up together in the early

1980's" (p.130). Miller and Rollnick (2009) are keen to emphasise however that MI was never based on the TTM, reporting that they "...are in essence, kissing cousins who never married" (p.130). Miller and Rollnick (2009) suggest that the TTM is intended to provide a detailed and comprehensive model highlighting both how and why changes occur. They argue that MI on the other hand is a "specific clinical method to enhance personal motivation for change" (p.130).

2.6.3The Goals of MI

MI is a goal oriented approach, according to McNamara (2009) there are five specific goals of MI which are:

- To increase knowledge
- To increase concern
- To promote self efficacy
- To promote internal attribution
- To promote self esteem

The goals of MI are to promote knowledge and increase concern about the problem situation. It is argued by researchers (e.g. McNamara,2009, Rollnick and Miller, 1991) that if these two goals are achieved then the client is at the point where they are ready to move from the Precontemplative stage towards the contemplative stage. The goals of increasing self efficacy and promoting internal attribution aim to promote the clients feelings and develop an understanding of "the causes" of the problem. The final goal to promote self-esteem is important as, according to McNamara (2009, 2014), a client with high self esteem will more readily accept negative feedback and the likelihood of denial, rejection and projection is reduced.

2.6.4 MI Techniques

McNamara (2009) suggests that the techniques of MI can be considered to be "an amalgam of humanistic, Rogerian and behavioural counselling"(p.21).

Approach	Description
Humanistic	This component is the unconditional positive regard for the client.
Rogerian	This component takes the form of non-directive counselling.
Behavioural	Occurs when the nondirective approach becomes a more guided approach.

Table 6: Highlighting MI techniques and how they are linked to different approaches adapted from McNamara (2009)

Recently, McNamara (2009) described four main advanced MI techniques:

- Positive restructuring: where the practitioner provides feedback by positively interpreting negative information given by the client. McNamara (2009) suggests that the aim of this is to promote feelings of self efficacy.
- Special reflections: in the simplest form, this is where the practitioner repeats, rewords or paraphrases the client's statements. McNamara (2009) argues that the aim of this is to "elicit self-motivational statements" (p.27). McNamara suggests that special reflections are extensions of simple reflections (e.g. reflections of feelings, reflections of conflict, overshooting (exaggerating a client's statement) and undershooting (the opposite of overshooting).
- Provoking: here the practitioner reflects to the client that he/she has no problems. The aim of this technique is to elicit from the client that he/she actually does have problems.
- Columbo technique: where the practitioner feigns incompetence so as not to be seen as a threat by the client.

2.6.5 Menu of Strategies

A menu of strategies (table 3) was developed by Rollnick, Heather and Bell (1991) with the purpose of giving practitioners a structure to follow when using MI. Rollnick et al (1991) suggested that introducing a structure to MI sessions would increase the likelihood of it succeeding to promote behaviour change. They also

indicated that the menu would allow the therapist to remain client-centred and ensure that they were following the clients lead appropriately.

Strategy	**Description**
Opening strategy: lifestyle stresses and substance use	General discussion about the current situation and how the substance abuse fits into this.
Opening strategy: health and substance use	The therapist asks where and how the substance abuse might affect their health.
A typical day session	The client and therapist go through a typical day in the client's life without focusing on the problems.
The good things and the less good things	Exploring the feelings of the client without inflicting therapist views on the client.
Providing information	Providing the client with information sensitively and at the appropriate time.
The future and the present	Focuses on the difference between the client's current situation and how they might like their future to look.

Table 7: The Menu of Strategies (adapted from Rollnick et al, 1991)

In recent years the menu of strategies has been adapted for use within education with children and young people. This will be highlighted and discussed later in the chapter.

2.7 Efficacy of MI with Adults in Clinical Settings

As previously highlighted, MI was first developed for use with adults in order to change their behaviour in relation to their consumption of alcohol. Over the years research evidence has been presented highlighting positive results in the treatment of behaviours associated with alcohol (Gilder, Luna, Calac, Moore, Monti and Ehlers,

2011), substance use (Jensen, Cushing, Aylward, Craig, Sorell and Steele (2011) and mental health difficulties (Frey, Cloud, Lee, Small, Seeley, Feil, Walker and Golly, 2011).

By the year 2000 the evidence base examining the effectiveness of MI was expanding thanks to a number of systematic and meta analytic reviews. For example, in 2005 Hettema, Stelle and Miller conducted a meta analysis of 72 clinical studies within a number of behavioural domains including smoking, alcohol, drug abuse and diet and exercise. 74% of the included studies reported that the MI intervention had been standardised by either a manual or specific training. The researchers reported a between-group effect size of 0.77, which decreased to 0.30 at follow-ups one year later. Interestingly the effect sizes of MI were larger with ethic minority populations and when the practice of MI was not guided by a manual. Hettema et al (2005) suggested that the use of a manual appeared to create a barrier to the client/practitioner relationship and called for the use of less formal MI sessions. Hettema et al (2005) acknowledge that a limitation to this analysis is that it did not identify factors that influence the effectiveness of MI and that it would be beneficial if future research investigated the specific factors that mediate the moderate effects of MI.

Simarly, Rubak, Sandback, Lauritzen and Christensen (2005) conducted a systematic review and meta analysis of 72 randomised controlled trials (RCTs) using MI as the intervention. Rubak et al (2005) found that MI had a significant and clinically relevant effect in three out of four studies and the researchers concluded that MI in a scientific setting outperforms traditional advice giving when treating a range of both behavioural problems and diseases. The researchers emphasised the need for further large scale studies to be conducted to prove that MI can be effectively implemented into daily clinical practice.

The effectiveness and applicability of MI has also been investigated by Lundahl and Burke (2009) who conducted a meta analysis. They found that MI was between 10 and 20% more effective in comparison to no treatment, and significantly, is generally equal to other well known treatments, e.g. for problems ranging from substance abuse to engaging in risky behaviours. Lundahl and Burke (2009) also reported that when MI is delivered with problem feedback it is more likely to generate better

outcomes in comparison to simply using MI alone and that relying on group-delivered MI appears to be less effective than one-on-one MI.

Systematic reviews and meta-analyses have also been carried out to investigate the efficacy of MI specifically in medical care settings. One example of such a review was conducted by Lundahl, Moleni, Burke, Butters, Tollefson, Butler and Rollnick (2013). The researchers reviewed 48 RCTs, recruiting a total of 9,618 participants. Lundahl et al (2013) found that overall MI showed beneficial effects with 63% of main outcome comparisons in these studies showing statistically significant advantages for MI. The study found that MI produced a statistically significant and positive impact on a range of outcome measures including cholesterol level, blood pressure and body weight. Interestingly, MI did not show a statistically significant effect on a number of behaviours including safe sex behaviours, eating disorder behaviours and marijuana abstinence. The researchers concluded that MI can be profitably delivered by a range of professionals in medical care settings. This study contributes useful information to the MI evidence base, it is however important to acknowledge a number of limitations. Firstly, Lundahl et al (2013) suggest that implementing tight inclusion criteria could arguably have resulted in a number of relevant studies not being identified. Secondly, the authors did not include unpublished works in the review which may have biased the reviews. Finally, the authors acknowledge that due to a lack of detail in a number of the reviewed studies, it was often difficult to determine the type of intervention to which MI was compared, which is problematic when attempting to draw firm conclusions relating to the efficacy of MI.

Finally, VanBuskirk and Wetherell (2014) presented a meta- analysis which synthesized the findings from 12 RCTs of MI for health behaviour outcomes within primary care populations. The researchers reported that across all 12 studies, 9 demonstrated that MI was more effective than control conditions. These results spanned a range of behavioural outcomes such as substance use, smoking cessation and weight. Significantly, MI was found to be effective in as little as one 15-20 minute session, when it was delivered over the phone and when it is ‘boosted’ by intermittent phone calls after in person meetings. The researchers acknowledge that this meta analysis has limitations primarily due to the fact that there were only a

small number of RCTs that were suitable for review which they suggest may have led to 'underpowered study results' (p. 10).

The research and reviews discussed above indicate that there is a positive evidence base for the use of MI with individuals struggling with a range of difficulties within the medical field. Encouragingly, the evidence also appears to suggest that the use of MI techniques is more effective when compared with more traditional (e.g. the expert giving advice) methods used in clinical settings. Significantly however, the evidence does not indicate that the use of MI in clinical settings is more useful than other interventions every time it is implemented. This suggests that the implementation of a MI intervention should be considered alongside a client's needs and individual circumstances.

It is important to acknowledge that the methodology used to investigate MI has been frequently criticised over the last 25 years. Britt, Blampied and Hudson (2006) for example, suggest that many studies reporting on the outcomes of MI do not provide adequate information on what the intervention involved, or how it may have been modified for different populations, which makes it difficult to draw accurate conclusions and valid comparisons. In addition, this also leads to problems with replication, reliability and validity. For these reasons Britt et al (2006) suggest that it is important that future research state specifically what modifications and methodology are used.

Knight, McGowan, Dickens and Bundy (2006) conducted a systematic review of MI as a therapeutic intervention and argued that although MI was largely deemed to be a successful approach, descriptions of methodology applied were vague. They found weaknesses in a number of methodological areas including sample size, inadequate validation of questionnaires and disparate multiple outcomes. Knight et al (2006) argue that fidelity to intervention is an important concept that at the moment is difficult to ascertain due to the fact that few studies appear to measure or even refer to it. They concluded that if MI is to be utilised to a variety of areas, then more methodological detail and reliability is required.

The use of MI as a therapeutic technique has also been criticised. Miller and Rollnick (1994) acknowledge that MI may be perceived as being manipulative due to the fact that in most cases, when the client and practitioner first work together , the

client is often not ready for change. In reply to this however, Miller (1994) argues that the outcomes of MI are always compassionate and encourages it to be judged in this way. In addition, the evidence for MI also emphasises the importance of practitioner empathy and an equitable partnership between the practitioner and the client, it can therefore be assumed that the practitioner would deal with any negative outcomes professionally and appropriately. Finally, Britt et al. (2006) suggest that the goal of MI is to develop the client's understanding of their feelings and behaviours to increase their self-awareness. It can therefore be argued that with this increased self-awareness a client cannot be manipulated in a particular direction.

2.8 MI with Children and Young Adults

As this literature review has already highlighted evidence for the effectiveness of MI to modify the health related behaviours in adults is generally positive. In comparison however, researchers (e.g. Jensen et al 2011) have suggested that evidence in respect of adolescents is still emerging. Tober (1991) and Lawendowski (1998) have argued that the MI technique is particularly attractive to young people because it is client led and does not impose specific outcomes.

Jensen and Cushing (2011) completed a meta-analysis which aimed to summarise information and present findings from studies of MI interventions which were focused on reducing substance use in teenagers and young adults. The researchers searched for studies that recruited participants who were aged 21 or less and compared outcomes from interventions described as MI against those from control conditions. Jensen and Cushing (2011) identified a total of 21 studies, most of which described changes in cannabis and alcohol use, with 5 studies looking at smoking cessation. The majority of the studies utilised a single MI session. It was found that MI led to a small but statistically significant (effect size 0.17) reduction in substance use. Interestingly, when smoking was the sole target, an effect size of 0.31 was observed, twice as large as the impact on other forms of substance use. This effect size waned to 0.13 at a follow up 6 months later.

It appears that the results of this meta-analysis are consistent with those found among adults and are encouraging because most of the interventions consisted of a single MI session. It is important to emphasise however that only five out of the 21

studies assessed whether the interventions conformed to the principles of MI, making it difficult to generalise the findings. Nevertheless, the results of this meta-analysis do suggest that MI promotes positive change in youth substance use.

McCambridge and Streng (2004) aimed to test whether a single MI session, targeting alcohol, tobacco and drug use, would lead successfully to a reduction in the use of these drugs among young people. The study, a randomised trial, allocated 200 participants (age range 16-20 years) to either a MI (n=105) or a non-intervention control condition (n=99). The MI intervention was adapted from the work of Miller and Rollnick (1991) and a menu of topics for discussion was developed. Initial discussions focused on the drugs currently being used by the young person before the interviewer directed the focus to areas of risk, problems or concerns. In the control condition, participant's completed baseline and follow up assessments only. Measurements in McCambridge and Streng's (2004) study consisted of changes in self reported cigarette, alcohol, cannabis and other drug use. These measurements were taken at recruitment and at a follow up interview 3 months later.

It was found that in comparison to the control group, those in the MI condition reduced their use of cigarettes, alcohol and cannabis, mainly through moderation of drug use. Perhaps not surprisingly, for both alcohol and cannabis the effect was greater among heavier users and among heavier smokers. This study appears to provide evidence in support for using MI as a treatment for reducing drug related consumption in young people. The findings indicate that MI appears to benefit young people in a similar way to adults, in terms of individual drug use. The study does however have a number of limitations which are important to acknowledge. Firstly, the author's decision to adopt a non-intervention education as the control condition significantly limits the inferences that may be drawn. McCambridge and Streng (2004) point out that it is possible that another intervention may have produced similar benefits to MI. In addition, this research relied primarily on a self report measure which arguably reduces the validity and reliability of its findings. Finally, although the author's collected follow up data three months after the initial MI session, data on longer term outcomes may have helped to further establish the robustness of the MI intervention effects.

Audrain-McGovern, Stevens, Murray, Kismen, Zuckoff and Pletcher (2011) investigated whether MI results in behaviour change among adolescent smokers. The study recruited 355 participants who were randomly allocated to either a MI condition or a Structured Brief Advice (SBA) condition. Participants received either 5 sessions of MI (lasting 30-45 minutes) or 5 sessions of SBA (lasting 15 minutes for a period of 12 weeks). It is worth highlighting that in the SBA condition the counsellor defined the goal of the sessions to be smoking cessation. It was found that adolescents who received MI were 60% less likely than adolescents who received SBA to try and quit smoking, measured at a 12 and 24 week follow up. A key limitation to the study is that the differences found in the efficacy of MI versus SBA arguably could be due to the different goals of the two approaches. For example, MI is focused on behaviour change that is patient centred (i.e. not necessarily identified as quitting smoking). In comparison however, in the SBA condition, as previously highlighted, the counsellor defined the goal of the session as smoking cessation which may have impacted upon the results.

Research (e.g. Bean et al, 2014, Wong and Cheng, 2011, Walpole, Dettmer, Morrongiello, McCrindle and Hamilton, 2013) has reported that MI can be used effectively in the treatment of obesity in children and young people. In Sweden, Soderlund, Nordquist, Angbratt and Nilsen (2008) conducted a study which aimed to investigate the use of MI techniques with overweight children aged between five and seven. The MI techniques were implemented by nurses during counselling sessions which included the children and their parents. This research is particularly noteworthy because it aimed to outline the barriers and the facilitators to the success of the techniques. The researchers found that the barriers included the nurses' lack of recognition that being overweight constituted a health problem to the children and parents who the nurses believed were unmotivated to deal with their child's weight problem. Facilitators to success included nurses' recognition of the advantages of MI, cooperative parents and working with obese children rather than those who were overweight. Soderlund et al's (2008) research is a rare example of the techniques of MI being adapted for use with young children. However, the nurses directed their questions towards the parents and not the children themselves meaning that very little information regarding the use of MI with young children is gained from this research.

A further study aiming to use MI to tackle childhood obesity was carried out in Italy by Davoli et al (2013). This research aimed to evaluate the effect of a family paediatrician led MI intervention on overweight children aged between 4 and 7 years. Parents were asked to participate in the study if they recognised that their child was overweight. The researchers randomly allocated children to either a MI or usual care condition (where children and their families received an information leaflet warning of the health risks associated with obesity). The MI group received 5 MI sessions. The outcome measured was the variation in the participant's BMI at the end of the study. 187 children were randomised to the MI group and 185 to the usual care condition. It was found that although the children's BMI increased in both conditions, the increase was less in the MI children (0.49 in comparison to 0.79). Interestingly, Davoli et al (2015) reported that MI had no effect in boys or in children whose mother had a low educational level, clearly this finding has implications for further studies including parents and boys in MI research. This study is noteworthy because it is one of only a few studies which has aimed to evaluate the efficacy of MI as a treatment for childhood obesity in a primary care setting. However, long term follow up is needed to verify the duration of these results over an extended period of time. In addition, it would be beneficial to investigate why the MI intervention was not effective for boys and for children whose mothers have less education.

Efforts have been made to investigate whether MI can be used in the treatment of adolescents experiencing symptoms of depression. Brody (2009) adopted a case study design and described the case of 17 year old Anna. Anna was described as being "ambivalent regarding what life change to pursue" (p.1168). She was motivated to change, but was confused about which changes to make. Prior to the MI intervention, Anna scored 31 on the Beck Anxiety Inventory (Beck and Steer, 1993) and the Beck Depression Inventory (Beck, Steer and Brown, 1996), indicating severe depression and moderate anxiety according to the norms for these scales. Anna received 10 MI sessions which focused on the expression of empathy, developing and validating discrepancies, exploring and clarifying resistance to change and supporting Anna's self-efficacy to allow her to become more assertive. At the end of the treatment Anna's affect was described as being more cheerful and less anxious, Anna also reported fewer symptoms of depression and anxiety. Supporting these

observations, Anna's scores on the Beck Anxiety Inventory and the Beck Depression Inventory had decreased by 20 and 24 points, placing her in the non-clinical range. This research highlights how MI can be used effectively to treat adolescents experiencing symptoms of depression. However, the case study design means these findings cannot be easily generalised and that there is a need for more controlled research on MI for depression before it can be recommended as an "empirically supported" (Brody, 2009, p. 1178) treatment.

2.9 Evidence Relating to the Use of MI within Education

Frey et al (2011) suggest that there are a number of ways in which MI could be used within educational settings, ranging from its use as a large scale intervention method to more informal applications such as during conversations with parents, teachers and pupils. When engaging in conversations with students, parents and teachers, Frey et al (2011) suggest that professionals refer to Miller and Rollnick's (2002) 3 underlying constructs; evocation, collaboration and autonomy and the principles of MI: express empathy, develop discrepancy, roll with resistance and support self-efficacy (Frey et al., 2011). They posit that when mental health professionals approach students, parents and teachers about change they have the potential to elicit personal reasons for change while avoiding the 'expert role' of educating or attempting to "sell a change process" (p.7).

In recent years efforts have been made to examine the efficacy of MI for improving students' academic achievement. One such study was conducted in the United States by Strait, Smith, McQuillin, Swan and Malone (2012) who randomly assigned 103 participants (aged 11-13) to either a MI (n=50) or a waitlist control condition (n=53). Participants allocated to the MI condition received a single MI session approximately half way through the schools semester. Strait et al (2012) found that these students were significantly more likely than the control group to report increases in positive academic behaviour and significant improvement in maths grades, but not across any other subjects. A limitation to this study is that significant effects were only found on maths grades raising the possibility that the effects were due to chance rather than as a result of the MI session.

In a follow up study, Terry, Strait, McQuillin and Smith (2014) examined dosage effects of MI by randomly assigning 42 students (aged 11-13) to either one or two sessions of MI. The researchers predicted that two MI sessions would produce significantly higher school grades, academic motivation, self-efficacy and school engagement in comparison to one session. Students assigned to the single MI group received one MI session lasting approximately 45 minutes. The students were also asked to complete an optional goal sheet which was returned to them (if completed) a week after the intervention had finished. In comparison, students in the two session MI group participated in a MI session identical to a single session MI group. Significantly however, they also received a performance feedback goal worksheet every two weeks between their first and second session. This worksheet was designed to elicit change talk and included a line graph demonstrating the progress students had made towards a personal goal identified during session one.

The findings from this study suggest that two MI sessions can have a "larger and broader impact on academic grades in comparison to a single session" (Terry et al , 2014, p.11). Terry et al (2014) reported that participants who received two sessions of MI demonstrated significantly higher grades in maths, science and history. Furthermore, it was found that two doses of MI increased affective engagement significantly more than a single dose. Interestingly no significant effects were found regarding self-efficacy and behaviour engagement.

The findings from this study are interesting and have implications for the practice of MI in educational settings. It is however important to acknowledge the limitations to the study. It is difficult to ascertain whether the reported improvements in student's academic achievements in maths, science and history occurred due to the additional MI session or the inclusion of regular performance feedback. Further research would be useful to examine whether similar effects are demonstrated when students receive an additional dose of MI with no performance feedback. The study also did not utilise a control group of either a 'treatment as usual' group or an alternative academic intervention unrelated to MI which limits the comparisons which can be drawn.

MI has also been applied within education when working with young people described as obese. Flattum, Friend, Neumark-Sztainer and Story (2009) investigated

using MI as part of a school based obesity prevention programme for adolescent girls. Throughout an 18 week pilot study, 41 girls, aged 16-18, took part in a physical education class that focused on increasing physical activity, healthy eating and social support. Individual MI sessions with 20 of the girls were also conducted to develop goals and actions relating to eating and physical activity. It was found that MI offers a "promising approach as a component for a school based obesity prevention programme" (Flattum et al, 2009, p.91). The researchers concluded that MI was feasible to implement in a school setting and was perceived to be acceptable to the adolescents. Despite these positive findings it is important to acknowledge that the small sample size means it is difficult to generalise the results to the wider adolescent population. In addition, the study relied on process evaluation data (focusing on the development and implementation of the MI programme) which limits the ability to draw firm conclusions from its findings.

MI has been applied successfully within higher education (Iarussi, 2013, Hohman, Pierce and Barnett, 2015). A recent discussion paper written by Wells, Jones and Jones (2015) argues that MI can be used to foster better and more positive student-teacher interactions in higher education. They suggest that MI can be used in this way because it promotes a "non-judgemental, constructive and collaborative dialogue between teacher and student" (p.177). Wells et al (2015) argue that in formal learning settings there will always be instances of resistance to learning from students. Such resistance can result in either open conflict or withdrawal on the part of students and teachers. Wells et al (2015) present Prochaska and DiClementes (1982) Stages of Change model (figure 1) and suggest how teachers could use it in order to encourage effective approaches to learning, see table below.

Stage of model	Actions of teacher as suggested by Wells et al (2015)
Pre-contemplative	Teacher should aim to engage the student in discussion about their goals. Teacher should engage the student as an adult to increase their self-efficacy. Teacher should aim to help the student to discover their own reasons for doing the course/programme.
Contemplative	The aim here is to help the student to think about how they would like to change. The teacher's role is to help the student to consider possible resources and available options. Teacher should encourage the student to think for themselves, e.g. by asking what has worked for them in the past. Teacher can expand their awareness by asking what strategies their peers use to learn.
Preparation	The aim here is to support the student to develop a plan in order to help them study effective. The teacher should share their concerns if they feel that the steps identified in the student's plan are not sufficient in order to be successful. It is important that the teacher shares their concerns but also for the teacher to retain choice and control.
Action	Here the student acts upon their plan. The teacher's role is to support the student's move towards action and help them to overcome any obstacles.

Relapse	If the student relapses the teacher's role to help the student treat the relapse as a learning experience. The teacher should use exploratory questions to develop the discrepancy between what they expected and what happened to increase awareness and enhance motivation.

Table 8: Summarising Wells et al (2015) findings of how the Stage of Change model could be implemented into teacher's practice

This paper is worth highlighting as it provides an overview of the value of enabling students to learn more effectively, particularly those who are resistant. There are however limitations to the approach. It is feasible that teachers would find it challenging to implement a system which was developed for use working one to one or in small groups in comparison to large classrooms. Also the authors acknowledge that the suggestion of implementing therapeutic interventions within the classroom can evoke anxiety amongst teachers who do not want to be seen as 'therapists'. Finally, this paper is an opinion piece and further research is required to show whether the benefits that Wells et al (2015) predict occur when the approach is applied in practice. Despite these limitations the authors suggest that the approach responds to reluctant learners needs in a way that is both positive and collaborative which promotes effective working relationships between teachers and students.

It has been suggested that MI techniques can be successfully implemented alongside solution focused techniques in schools (Atkinson and Amesu, 2007). A solution focused approach examines an individual's ability to make changes to his or her life through accessing their own strengths and skills (Lewis and Osborne, 2004). Atkinson and Amesu (2007) suggest that solution focused approaches have gained momentum, particularly in relation to behaviour management in schools. The approach is a useful and flexible model to tackle behavioural difficulties. Furthermore, a report commissioned by the DfES (2005) describes how the solution focused model "....encourages teachers, and others involved in developing effective approaches to behavioural issues, to adopt a positive stance in which energy is

directed towards finding satisfactory ways forward rather than focusing on what is going wrong" (p.5). Atkinson and Amesu (2007) have explored a number of solution focused strategies that can be used effectively within each stage of the Model of the Stage of Change (Prochaska and DiClemente, 1982) and concluded that the two approaches can be used alongside one another when working with children and young people in schools. The author's aimed to create an approach which is based on the principles of both MI and solution focused thinking. Key to this is that the responsibility for change is left with the young person and that the facilitator works in a way that is both non-judgemental and demonstrates empathy with the young person. It is apparent that the incorporation of these two approaches warrants further investigation to establish the extent to which they can be successfully implemented and improve outcomes for children and young people.

There is a growing body of evidence (e.g. Frey et al, 2013) suggesting that the use of MI in education can give us a better understanding of the mechanisms through which coaches, mentors or consultants influence the change in behaviour and improve the implementation of effective practices. For example, Blom-Hoffman and Rose (2007) have suggested benefits of using MI in school based consultation. They argue that MI may be useful as a pre-consultation activity in order to establish an individual's initial interest in change whilst also addressing any barriers that may exist to implementing change. Blom-Hoffman and Rose (2007) posit that MI can be used to engage teachers in a change process and provides an opportunity to engage in collaborative problem solving. This paper highlights some interesting points regarding the use of MI as a successful consultation tool; it does not however take a critical stance which highlights the need for further research in this area.

2.10 Education and the Menu of Strategies

Efforts have to made to investigate whether the 'Menu of Strategies' can be successfully adapted for use in educational settings. Atkinson and Woods (2003) used a case study example to investigate whether MI could be applied as an effective intervention tool for a secondary school pupil experiencing disaffection. The researchers presented the case of 'Anna' a year 10 pupil described by school staff as having sporadic attendance, a poor record of handing in homework and a general apathy towards school. Anna was offered five one hour MI sessions on a weekly

basis. During the final session a joint meeting was held with a key member of staff in the school. The researchers developed and administered an evaluation form with the aim of assessing the views of the teacher who had made the initial referral. This evaluation focused on the perceived outcomes of the intervention for the student and the usefulness of MI as an EP school based intervention.

It was found that the MI techniques successfully elicited change indicating that there is evidence that MI can be used successfully by EPs in school settings. Atkinson and Woods (2003) acknowledge that further research is needed to examine the effectiveness of the intervention among a wider population of students experiencing disaffection over a longer period of time. They also suggest that it would be useful to examine how MI techniques might be adapted for working with younger pupils. Although the results from this study provide some useful and thought provoking insight into the use of MI within education, the researchers used only one pupil and relied purely on qualitative methods meaning the findings are difficult to generalise to the wider population.

Kittles and Atkinson (2009) explored how MI can be used as an assessment and consultation tool to identify the needs of disaffected young people. A case study methodology was implemented with 3 pupils from two different schools aged 13-15. The researchers used a 'young-person-friendly' version of the menu of strategies (table 9). The process of MI was evaluated by the young person immediately after the first session though a semi structured interview. This has limitations as it is feasible that the participant's may not have wanted to express negativity towards the researcher. Despite this limitation, the research suggested that, in these three case examples, using MI as both an assessment and consultation tool was useful for school staff because it provided a range of information about the young people which could be used to develop appropriate individual interventions. In addition, Kittles and Atkinson (2009) concluded that all three of the young people who participated in the research felt that MI challenged their thinking and encouraged them to consider their future. However, the case study methodology adopted in this study means that the findings should be viewed as preliminary. Indeed, Kittles and Atkinson (2009) acknowledge that the research should be considered as a "starting point for broader investigation into the use of MI in educational settings" (p. 253).

Opening discussion	The young person should be given the opportunity to talk about the current situation in a 'safe' way. This discussion may relate specifically to the behaviour that is causing concern.
A typical day/lesson	The young person is asked to describe a typical day when the problem behaviour did not occur. They should be asked to talk about the day right from the time they woke up. Another useful strategy is to ask the young person to think about all his or her different lessons and to identify times when the problem does or does not exist.
The good things and the less good things	The young person is given the opportunity to talk about the good things and the less good things about a particular behaviour.
Providing information	The adult should ask permission of the young person before offering information, avoid giving direct advice. It can be helpful to describe what other young people in the same situation have done.
The future and the present	Most useful with young people who have expressed some concern about the behaviour in question. It allows exploration of circumstances and can trigger a desire for change.

Exploring concerns	The facilitator should listen to what the young person is saying and intervene to 'nudge' the discussions forward in order to elicit concerns about behavioural change.

Table 9: Menu of Strategies: School Adaptation. Reproduced from Kittles and Atkinson (2009)

Finally, a recent study conducted by Snape and Atkinson (2015) was the first to explore whether school staff could effectively deliver a MI intervention to disaffected pupils. Previous research, for example Atkinson and Amesu (2007), led to the recommendation that MI techniques may be more successful when used by school staff who have a pre-existing relationship with the young person. Snape and Atkinson (2015) implemented an exploratory mixed methods design which aimed to investigate the extent to which an MI intervention, delivered by school staff, improves pupils' school-based motivation and also to what extent school staff found the intervention to be practical and useful. The study examined the impact of a 5 week MI intervention on 5 pupils attending a mainstream secondary school in the UK. The intervention was evaluated using pre and post-test motivational measures and a post intervention staff focus group which had the purpose of eliciting staff views about the intervention. The intervention itself involved delivering structured materials developed by Atkinson (2005) (described in detail on page 29 of this review).

It was found that the positive qualitative feedback gained in the staff focus group was not supported by data from the pupil motivation measure. The qualitative feedback indicated that school staff had gained a better understanding of the pupils' interests, that the pupils had enjoyed the sessions and that useful information had been gathered regarding ways to effectively support the pupils in school. In contrast, the quantitative data highlighted only modest improvements in motivation for 3 out of the 5 pupils. Snape and Atkinson (2015) suggest that these small improvements were most likely attributable to other factors, such as having the opportunity to spend time with an adult. These mixed findings are interesting and it is worth acknowledging that there are a number of limitations to this research which might

explain why significant improvements were not demonstrated on the motivational measure. Snape and Atkinson (2015) acknowledge that firstly, the staff who delivered the sessions were given minimal training on MI and the associated principles. Secondly, the staff did not have backgrounds in either psychology or counselling highlighting that they had minimal experience in delivering therapeutic interventions. Finally, staff did not have access to any supervision throughout the intervention period and so had no opportunity to ask questions or improve their practice. This suggests that further research with an increased focus on training and support during the intervention, to ascertain whether school staff can successfully implement a MI intervention with disaffected pupils would be beneficial.

2.11 The use of MI with Younger Children

Frey et al (2011) observe that MI has mainly been used with adults, adolescents and pre-adolescents rather than young children, adding "...the study of MI with young children is only just beginning. It may be plausible that MI could be utilised with young children with some effectiveness" (p.2). McNamara (2009) highlights that "a significant question that is asked regarding the use of MI is can it be used effectively when working with young children?" (p. 209). McNamara suggests that the effectiveness of using MI with this age group is dependent on "the therapists' skills with regard to translating and interpreting the semantic content of MI theory and practice into child friendly language..." (p.209). He explains that it is important that this language is understandable and meaningful to children to ensure that they are able to respond effectively and appropriately.

The use of MI with younger children is an under researched area. At the time of writing only one published paper has investigated its use with primary aged pupils. This paper, by Atkinson and Cyer (2015), details the use of a short MI intervention with a primary aged (10 year old) pupil identified by school staff as being disengaged. The researchers adopted a case-based approach using pupil and teacher interviews, alongside observational field notes to assess the usefulness of the intervention. Collected data was analysed using thematic analysis. The MI intervention consisted of a specially designed pack of materials developed specifically for use with primary aged pupils by Atkinson (2013). This pack of materials, entitled Facilitating Change 2 (Atkinson, 2014) will be described in more

detail later in the chapter and further detail regarding the content of the intervention will be presented in Chapter 3. The targeted pupil received 4 weekly MI sessions delivered by one of the researchers. Atkinson and Cryer (2015) reported that their research offers "tentative indications that MI techniques may be useful in supporting primary aged pupils" (p.67) as the intervention had a significant impact on learning motivation and classroom behaviour of the target pupil. The researchers further highlight the importance of combining the use of a pack of MI materials specifically aimed at young people with a flexible approach, adapting the activities to enable positive outcomes for the pupil. This research was the first of its kind to explore the use of MI with a primary aged pupil and so its findings are noteworthy and interesting, there are however a number of limitations to the study. The authors acknowledge that this research provides "only a small window into the use of MI with younger children" (p.68). Clearly there is a need to look at the efficacy of MI with this age range on a larger scale in order to be able to draw more conclusive and robust results. Atkinson and Cryer (2015) suggested a number of ways to extend and replicate their study including collecting both qualitative and quantitative data, exploring the use of MI when it is delivered by teachers and the use of MI with other vulnerable groups.

2.12 Facilitating Change 2: An Intervention

Facilitating Change 2 is the second of two resources developed by Atkinson (2005, 2014). The resources are based on the menu of strategies to help young people understand their behaviour and provide professionals working with young people the opportunity to support behavioural change. It contains information about MI and over 20 activities categorised under 7 separate strategies appropriate for young people at different stages of readiness for change. Atkinson (2013) suggests that Facilitating Change 2 'provides a set of activities which can be selected in any order to meet the needs of the young person'. The pack has been trialled extensively with young people across the secondary age range (11-16 years) and less extensively with children at the top of the primary age range (9-11 years). Atkinson (2013) highlights that pupils who take part in the sessions are likely to require a level of verbal competence expected of children in at least Key Stage two.

The different stages in the intervention and activities included are described in detail in the methodology section. Further detail can be found in appendix 1.

The research evidence presented in this literature review suggests that MI can be effectively used as a school based intervention (Kittles and Atkinson, 2009, Atkinson and Woods, 2003, Cryer and Atkinson, 2015). As illustrated, the evidence base regarding the use of the approach with primary age pupils is limited to only one published study (Cryer and Atkinson, 2015). This research adopted a purely qualitative design and described a single case study which, despite the lack of generalisability, produced rich information and findings. It is apparent that further research is needed in this area to add to the existing limited evidence base regarding whether MI can be used effectively with primary aged pupils.

2.13 Research Questions and Hypotheses

The current study aims to investigate whether a 4/5 week MI intervention can improve the disruptive classroom behaviour of targeted primary aged pupils. This aim led to the development of two research questions which are presented below.

Research Question	Research Hypotheses
Does a 4/5 week Motivational Interviewing intervention reduce targeted pupils 'disruptive' classroom behaviour?	The Motivational Interviewing intervention will reduce targeted pupils disruptive classroom behaviour.
Does staff perception of pupil behaviour, as measured by Goodman's (1997) Strength and Difficulties Questionnaire, change as a result of a 4/5 week MI intervention?	The Motivational Interviewing intervention will reduce staff reports of pupils' disruptive classroom behaviour.

Table 10: Research Questions and Hypotheses

Chapter 3: Methodology

3.1 Introduction to Chapter

This chapter provides an overview of the current study's methodology. In addition, the researcher aims to provide a rationale for key methodological decisions that were made throughout the research period.

3.2 Real World Research/Evidence Based Practice

Stoiber and Waas (2002) suggest that at the heart of evidence based practice is the question of what works and for whom. Such an approach leads to the investigation of cause and effect, e.g. intervention effects. Stoiber and Waas (2002) argue that finding out which interventions work in schools may be some of the most essential work of Educational Psychologists.

3.3 Theoretical Paradigms and Philosophical Assumptions

3.3.1 Ontology

Ontology focuses on the nature of the social phenomena being studied (Cohen, Manion and Morrison, 2009.)According to Lincoln and Guba (2000) an ontological question asks 'what is the nature of reality?' Depending on the perspective taken, this question is answered in different ways. A positivist/post-positivist perspective argues that there is only one reality which it is possible to know. However, the post-positivist stance recognises that a researcher can only understand this reality imperfectly due to the complexities involved in real world research (Mertens, 2015). Taking this into account, Mertens (2015) argues that a design which is able to limit extraneous variables and alternative explanations increases the probability of successfully measuring the one existing reality.

3.3.2 Epistemology

According to Lincoln and Guba (2000) an epistemological question asks 'what is the nature of knowledge and the relationship between the knower and the would-be-known?' Cohen et al (2009) suggest that epistemological assumptions are concerned with the nature and forms of knowledge, how such knowledge can be acquired and finally how it can be communicated to others. Cohen et al (2009) further posit that

the standpoint a research adopts affects the way in which they attempt to acquire the knowledge that they seek. Arguably of most relevance to the notion of evidence based practice are the positivist and post-positivist paradigm, these will now be discussed below.

3.3.3 Positivism and Post-positivism

Researchers have argued that positivism and post-positivism are related to opposing ends of the epistemological spectrum. Cohen et al (2011), for example, suggest that positivism uses deductive and quantitative methods to provide objective evidence to either support or disprove hypotheses. According to Robson (2002) positivists essentially look for the existence of a relationship and it is the researcher's job to discover what that relationship is. The positivist paradigm has received criticism due to its rejection of both abstract and hypothetical knowledge and its focus on scientific rigour, which some researchers (e.g. Robson, 2011) argue can be difficult to apply to real world research and complex human behaviour.

Post-positivists accept that the theories, hypotheses, knowledge and values of the researcher can influence what is being observed (Riechardt and Rallis, 1994). Post-positivists still believe that a reality exists, but consider that this reality can only be known imperfectly due to the researcher's limitations. Adopting a post-positivist approach typically yields quantitative data in an attempt to establish validity and reliability.

3.3.4 Constructivism

Researchers working within the constructivist paradigm adopt an opposite standpoint and argue that there are multiple social constructions of the world. Constructivist researchers consider that the task of the researcher is "to understand the multiple social constructions of meaning and knowledge" (Robson, 2011, p.27) and tend to use more qualitative research methods such as interviews which enables them to gather different participants' perspectives.

3.3.5 Epistemology of the Current Study

The aim of the current research is to attempt to establish a cause and effect relationship when evaluating the effectiveness of a MI intervention for children displaying frequent, disruptive classroom behaviour in a real world context. In order to attempt establish this relationship, an epistemological standpoint that views knowledge as being objective, tangible and measurable through the use of a rigorous scientific method (Cohen, Manion and Morrison, 2009) was adopted. The researcher

was also aware however, that completing real world research means that tight experimental control is often impractical and difficult to implement; leading to the adoption of a post-positivist epistemology.

3.4 Methodological Considerations and Designs

3.4.1 Fixed and flexible designs

The epistemological standpoint a researcher adopts determines the methodological considerations. Robson (2011) describes two types of research designs; fixed and flexible. Robson (2011) suggests that the post-positivist stance adopted in this study is closely aligned with a fixed experimental design. Fixed designs are theory driven and typically involve the collection of quantitative data (Robson, 2011), this allows for a clear link between theory and research to be established. Robson (2011) argues that the advantage of fixed designs "lies in their ability to transcend individual differences and identify patterns and processes which can be linked to social structures and group or organisational features" (p.98). Fixed designs have however been criticised due to the fact that they focus on establishing causal relationships between variables, arguably this means that the complexities and subtleties of human behaviour are not sufficiently captured (Robson, 2011).

In contrast to this, within flexible designs, the theory, data collection and research methods are not determined before the research begins. Instead, details 'evolve' as the research progresses. Case studies, grounded theory studies and ethnographic studies are examples of flexible design research strategies (Robson, 2011).

3.4.2 Evaluation Research

Robson (2011) describes evaluation research as research that aims "to assess the effects and effectiveness of something, typically some innovation, intervention, policy or service" (p.202). In evaluation research fixed or flexible approaches can be used, with either qualitative or quantitative methods. Robson (2011) suggests that there is an increasing expectation that 'real world enquirers' will be able to carry out evaluation research. Robson (2011) has distinguished between outcome evaluation and process evaluation. He posits that outcome evaluation focuses of establishing the consequences and outcomes of an intervention whereas process evaluation is concerned with the processes that occur within it. Outcome evaluations are likely to require a fixed design (Robson, 2011) so that the impact of an intervention can be established. Process evaluations on the other hand are likely to require a flexible

design so that questions can be answered about what is occurring within an intervention (Robson, 2011).

3.4.4. Application to the Current Study

The current research is concerned with evaluating the impact of a MI intervention for improving the disruptive classroom behaviour of targeted primary aged pupils. As such, it can be categorised as outcome evaluation research. A fixed design strategy was therefore taken which required the researcher to identify the outcome variables and suitable methods prior to commencing data collection. The researcher was interested in establishing the impact that the MI intervention would have on individual participants and concluded that pre- and post-measures would be too blunt to capture this individual progress. This led the researcher to suggest that a single-case experiment design (SCED) would be appropriate. Horner et al (2005) argue that SCEDs can be used to investigate the effectiveness of interventions.

3.4.4 Study Design

The current study employed a single case experimental design. Six cases were involved.

3.4.5 Rationale behind this Study Design

The current research adopted a single-case experimental design methodology, rather than a group design, for a number of reasons. Firstly, using a group design leading to data based on group means could, according to Horner et al (2005) result in an evaluation of an intervention that is insensitive, with minimal value for application at the individual level. In comparison, a SCED is able to focus purely on the response of an individual. Horner et al (2005) highlight that single subject research allows for detailed analysis and identification of individuals who do not respond to an intervention, or who respond in a negative way, (Horner et al, 2005), a feat not possible in group designs.

Secondly, single subject research approaches were identified by the researcher as being well suited to this project during the planning phase as small participant numbers were anticipated due to the nature of the intervention and the chosen inclusion criteria e.g. that participants' would need to display frequent and observable low level disruptive classroom behaviour.

Finally, the researcher was interested in establishing how the MI intervention impacted upon the participant's behaviour over time, implementing a pre and post

study design would not have adequately captured this information. A single-case experimental design provides this continuous measurement, capturing change over time.

3.5 Single Case Experimental Designs (SCEDs)

Horner, Carr, Halle, McGee, Odom and Wolery (2005) argue that single subject research is a "rigorous, scientific methodology used to define basic principles of behaviour and establish evidence-based practice" (p. 165). Horner et al (2005) also suggest that single subject research provides a level of experimental rigour beyond that found in traditional case studies. Single case experimental designs typically involve the continuous assessment of some aspect of human behaviour over a period of time and within separate phases of a study. Kratochwill, Hitchcock, Horner, Levin, Odom and Rindskopf (2010) suggest that typically single case experimental designs (SCEDs) are used to investigate the effect on an independent variable (IV) over and above that of the effect of the typical context. McCormick (1995) describes a number of key features in a SCED design, these include:

- The personalised evaluation of data
- Standard measurement procedures
- Establishment of a baseline
- The manipulation of variables
- Repeated measurement throughout an intervention
- Assessment of maintenance
- Analysis of visual data displayed in graphs

3.5.1. SCED Variations

There are a number of different variations which should be considered when conducting a SCED. The simplest form of a SCED is an A-B design where a repeated measure is taken across a baseline (A) and intervention phase (B). Adopting this approach has limitations as it is difficult for the researcher to conclude that changes to the dependent variable have occurred as a result of the introduction of an intervention (IV). For example, it is possible that something else, unrelated to the intervention, could result in differences in performance at baseline and during the intervention. This compromises the internal validity of the A-B design as it makes it

difficult to draw inferences regarding cause-effect or causal relationships (Barlow et al, 2009).

To strengthen an A-B design it is possible to add a further baseline to the study. This is known as an A-B-A design and can be extended further by re-introducing the intervention phase (i.e. A-B-A-B design). According to Barlow et al (2009) this design aims to increase the reliability and validity of the conclusions drawn about a causal relationship between variables. However an A-B-A-B design raises some ethical issues regarding the removal of an intervention which may be having a positive impact on an individual.

Finally, a multiple baseline design uses multiple baselines across subjects or behaviours. According to Kazdin (2003) the advantages of this design centre around strengthening the causal relationship between variables without the possible ethical considerations associated with an ABA/ABAB design.

3.6 Current Research Design and Rationale

The current study employed an A-B SCED. As recommended by McCormick (1995), data was collected during a baseline phase (A) and an intervention phase (B). Rizvi and Nock (2008) suggest that the baseline phase enables researchers to predict how the focus behaviour or behaviours would continue in the absence of the intervention. The intervention phase allowed any changes that occurred following the introduction of the intervention to be observed. Barlow, Hersen and Nock (2009) argue that 'with some major reservations, changes observed between the phases can be attributed to the effects of treatment' (p.137).

Barlow et al (2009) suggest that the AB design may be improved by including a follow up phase and multiple target measures. In addition they add that the introduction of booster sessions in the follow up phase may strengthen the causal relationship to be established. Due to time and practical constraints the researcher was unable to implement a follow up phase in the current study.

The AB design has been criticised by a number of researchers (e.g. Barlow et al, 2009, Kazdin, 2003, Kratochwill et al, 2010) and other SCED options were explored but ultimately considered unsuitable. The researcher gave consideration to a multiple baseline design, however this would have involved withholding the MI intervention

from some of the participants for a number of weeks and this was considered by the researcher to be unethical. Barlow et al (2009) stress that major reservations must be considered when a return to baseline is not possible. Caution is therefore needed when interpreting findings generated by this design.

3.6.1 Baseline Phase

Kratochwill et al (2010) suggest that when implementing a SCED the baseline phase should include at least three data points, with a recommendation of five, in order to provide an opportunity to demonstrate an effect after the implementation of the intervention.

3.6.2 Independent and Dependent Variables

The independent variable in this study was the MI intervention, a 4/5 week intervention implemented by the researcher during phase B of the study.

The dependent variable was participant classroom behaviour measured weekly, or twice weekly (depending on staff availability) using a structured observation schedule which used a coding schedule for pre-identified specific behaviours (refer to appendix 4 for an example observation schedule).

These repeated measures were triangulated with Goodman's (1997) Strength and Difficulties Questionnaire which was completed by each of the participants' class teachers as a pre and post measure.

3.6.3 Participants

3.6.3.1. Focus Pupil Inclusion Criteria

The target population of the study was pupils who met the following inclusion criteria:

1. Pupil is in year 5 or year 6
2. Pupil displays frequent and observable low level disruptive classroom behaviour. For example, behaviours that disturbs the learning of other children in the class.
3. Pupil does not have a diagnosis of Autistic Spectrum Disorder
4. Identified by their teacher as not having a significant learning delay
5. Identified by their teacher as being responsive to working 1:1 with an adult

Rationale for Inclusion Criteria One

Pupils in year 5 and 6 were targeted as Atkinson (2013) highlights that the Facilitating Change 2 intervention materials, used in the present study, had been trialled with children at the top end of the primary age range (9-11 years) and are appropriate for children in this age group. It was also felt that children below this age range might not have the verbal and cognitive skills needed to access elements of the intervention.

Rationale for Inclusion Criteria Two

Criteria two was used as the participants' behaviour needed to be observable and frequent enough to provide sufficient opportunity for the intervention to be shown to make an impact.

Rationale for Inclusion Criteria Three and Four

Previous research has indicated that language and communication difficulties may be a barrier to accessing MI (Kittles and Atkinson, 2009). It was not considered appropriate to recruit participants who would not have the level of understanding, problem solving skills and cognitive ability needed to access the MI intervention materials.

Rationale for Inclusion Criteria Five

The MI sessions were delivered on a 1:1 basis by the researcher, building up a positive rapport during the sessions was considered to be a vital part of the MI process. It was therefore considered important for participants to be willing to work with an unfamiliar adult.

3.6.3.2 Participant Identification and Selection: Focus Pupils

Focus pupil participants were identified through initial discussions with school Special Educational Needs Co-ordinators (SENCOs) and through discussion with other EPs within the researcher's local authority. The researcher initially contacted school SENCOs via email attaching an information letter (see Appendix 2) which provided some detailed information about the MI intervention and the participants the researcher was looking to identify and recruit. The researcher initially contacted 3 schools. All three schools agreed to an initial meeting and from this indicated that they would like to participate. Six participants were identified in these 3 schools however unfortunately, after collecting further information from class teachers and

carrying out initial classroom observations it became apparent that the 6 children did not meet the researchers inclusion criteria (of displaying frequent and observable low-level disruptive classroom behaviour).

The researcher then contacted SENCOs in a further 9 schools. 6 participants were identified in 3 of the 9 schools who met the researcher's inclusion criteria and consent was gained from parents and carers. (See Appendix 7) All six participants recruited for the current study were male. Efforts were made to recruit a mixed sample and two females were identified by school staff as meeting the inclusion criteria however parental consent was not gained in either case.

Table 6 highlights key participant information. For the purpose of anonymity pseudonyms are used for all participants.

Further information on each participant will be presented in the Chapter 4.

Child	School	Gender	National curriculum year	Age (at start of baseline phase)	Literacy National curriculum level (at start of baseline phase)	Length of MI intervention (weeks)
Ben	1	Male	6	10 years, 2 months	4	5
Oscar	1	Male	6	10 years, 4 months	5	5
James	2	Male	6	10 years, 6 months	4	5
Adam	2	Male	5	9 years, 5 months	4	5
Tony	3	Male	5	9 years, 3 months	4	6
Chris	3	Male	5	9 years, 7 months	4	6

Table 11: Highlighting Participant Characteristics

3.7 Measures

3.7.1 Behaviour Observation

Horner et al (2005) state that typically the dependent variable in a SCED is an observable behaviour. Robson (2011) suggests that observations are advantageous in their directness and that they are 'the appropriate technique for getting at 'real life' in the real world' (p.310). To increase the validity and reliability of observational data Horner et al (2005) suggest that observable behaviours should be:

- Operationally defined, to allow for consistent assessment and replication
- Assessed for consistency

- Repeatedly measured

Prior to collecting data in the baseline phase, semi structured interviews were completed with each participant's class teacher in order to identify and operationally define the behaviours to be observed for each participant (see appendix 3 for semi-structured interview schedule). Class teachers identified the behaviours that they felt occurred frequently for each of the participants, in order for the researcher to develop a specific understanding of what was meant by these terms further discussion took place.

Individual observation schedules were developed for each participant that included the target behaviours to be measured, a clear procedure for the timings of the observations and intervals that were small enough to be able to capture the intended behaviours. Observations were completed either weekly or twice a week (by teaching assistants) for each of the participants. Due to pragmatic issues, primarily staff availability, it was not possible for every participant to be observed twice a week.

Table 7 provides information on the target behaviours that were initially identified by school staff for each of the participants. After the baseline phase was completed however a number of these target behaviours were not observed for some of the participants and so were not included in the final analysis. These behaviours are highlighted in bold in Table 7.

Further detail regarding the participants target behaviour is presented in Chapter 4. Each participant was observed using a time sampling framework, their behaviour was recorded every 2 minutes for 15 seconds throughout the 30 minute period. An example observation schedule can be found in Appendix 4.

Participant	Target behaviours to be measured	Frequency of observation
Oscar	• Shouting out • Distracting peers • **Making noises (singing, humming, shouting)** • **Showing off** • **Behaviour needing teacher or teaching assistant intervention (e.g. being told to start work, sit up in chair)**	Observed once a week on the same day during Literacy.
Ben	• **Shouting out** • Distracting peers • **Immature behaviour (e.g. pulling faces)** • **Refusing to complete learning tasks** • Behaviour needing teacher or teaching assistant intervention (e.g. being told to start work, being told to move out of	Observed once a week on the same day during the morning session.

	another child's space)	
James	• Shouting out • Attention Seeking Behaviour (e.g. dancing, showing off, pulling faces) • Distracting peers (tapping pencil, prodding them, rocking his chair onto them) • **Asking inappropriate questions (e.g. questions he knows the answer to)** • Rude/Ignoring instructions • **Frequently questioning (e.g. why he has to complete a particular learning task)**	Observed twice a week in morning and afternoon lessons.
Adam	• Attention seeking behaviour • **Shouting out** • Distracting peers (rocking on chair, tapping pencil etc.) • Immature behaviour • Leaving seat • **Being rude/ignoring instructions**	Observed twice a week on different days during the morning session.

	• **Frequently questioning**	
Tony	• Distracting peers • **Being distracted by others** • Fidgeting (wriggling, playing with things in his hand) • **Looking around (therefore requiring teacher intervention)**	Observed twice a week on different days during the morning session.
Chris	• Distracting peers • **Being distracted by others** • Fidgeting (e.g. playing with his pen)	Observed twice a week on different days during the morning session.

Table 12: Highlighting the target behaviours measured for each participant

3.7.2 Strengths and Difficulties Questionnaire (SDQ)

Goodman's (1997) Strengths and Difficulties Questionnaire (SDQ) is a behavioural screening questionnaire used to assess the psychological adjustment of both children and adolescents (Goodman, 2001).There are three versions of the SDQ available; one for completion by parents/carers or teachers of pupils aged three or four, one for completion by parents/carers or teachers of pupils aged 4-16 and a self-report version for 11-16 year olds. This study used the questionnaire for the teachers of pupils aged 4-16. This version contains 25 items which the adult is asked to rate as 'not true', 'somewhat true' or 'certainly true' in relation to a child's behaviour. Goodman (1997) states that the items in the questionnaire relate to psychological attributes on 5 subscales: pro-social behaviour, conduct problems, hyperactivity and emotional problems.

The SDQ was selected for use in the current study as it is a short questionnaire, easy to access and complete, user friendly and significantly has been shown to be sensitive to change (Van Roy, Veenstra and Clench-Aes, 2008). In addition internal

reliability and test-retest stability have been termed satisfactory (Van Roy et al, 2008) and the convergent validity of the SDQ has been evaluated as showing substantial correlations with other instruments (Goodman, 2001).

3.8 Stakeholder Involvement

During the planning and implementation of the current study a number of stakeholders were considered. Throughout the research process, efforts were made by the researcher to balance the needs of these key stakeholders with the design of the research study. The key stakeholders involved in the study were:

- The University of Nottingham
- The Educational Psychology Service in which the researcher was on placement
- The schools in which the research was conducted
- The parents of the pupils involved in the study
- The pupils who participated in the study

3.9 Implementation of Intervention

3.9.1 Piloting the Intervention

Prior to collecting baseline data the researcher piloted the Facilitating Change 2 (Atkinson, 2012) materials by implementing a 4 week intervention with a year 5 male pupil. The purpose of this was to provide the researcher the opportunity to become familiar with the materials, the delivery of the intervention and the young person's response.

3.9.2 Facilitating Change 2: An Intervention

Participant's received a 5 or 6 week MI intervention delivered in school by the researcher. The table below describes the different stages in the Facilitating Change 2 intervention (adapted from Atkinson, 2012) and the activities that were carried out in each of the sessions. Further detail regarding the activities completed can be found in appendix 1.

Some adaptations to the Facilitating Change 2 intervention were made which included scribing for participants when the author felt that the writing demands of the tasks presented were too high. In addition, in line with guidance provided by

Atkinson (2005, 2012) the materials were used flexibly so that the order in which some of the activities were presented was altered to meet the individual needs of the participants.

Section	Content
Part 1: Opening Discussion	These activities are aimed at developing rapport between the facilitator and the young person. The materials provided are designed to encourage the young person to explore different aspects of their life, with the facilitator. The activities in this section of the pack include: Activity 1a: Skills Profile – an opportunity for the facilitator to develop rapport through finding out about the skills they have.
Part 2: A typical day/my lessons	The aim of this section is to help the young person to talk about their behaviour in a non-threatening way. Activity 2a: My lessons – allows the opportunity to identify lessons which may be problematic for the young person.
Part 3: The good things and the less good things	This provides an opportunity for the facilitator to discuss a specific behaviour without using terms such as 'problems' and 'concerns'. It allows the facilitator to develop a picture of the young person's views and assess their **readiness for change.** Activity 3a: the good things and the less good things – this enables the young person to identify some of the pros and cons of any behaviours identified. Activity 3b: weighing things up – offers the young person the opportunity to weigh up the pros and cons identified above Activity 3c: Scaling – allows the young person to think about their motivation to change and how feasible change might be.
Part 4: Providing information	Providing information specific to the young person's needs can be undertaken. This strategy is not a discrete activity but guidelines are provided. Activity 4: providing information – a protocol for recording information to be located by the facilitator or young person.

Part 5: The future and the present	This section is aimed at developing a discrepancy, from the young person's perspective, between their current behaviour and their goals and values. Activity 5a: The future and the present – provides the young person with an opportunity to map out how their life might look, with or without behaviour change. Activity 5b: Looking to the future – offers the young person the chance to identify their preferred lifestyle at a point in the future.
Part 6: Exploring Concerns	This section offers a framework for eliciting from the young person any concerns they may have about their behaviour. Activity 6a: Exploring concerns – the young person is given an opportunity to explore their own feelings about potentially problematic behaviours as well as feelings of others. Activity 6b: Scaling concerns Activity 6c: The wheel of change – this activity allows the young person to evaluate their own readiness for change.
Part 7: Helping with decision making	Rollnick (1992) suggests that this strategy is useful only for young people for whom there is conflict about the impact of a particular behaviour and who seem close to decision making. Activity 7a: Using my skills – allows the young person to re-visit their identified skills and to develop these into competencies for supporting behavioural change. Activity 7b: setting goals – enables the young person to think about what they want to achieve Activity 7c: My strategy – helps the young person to identify a strategy for achieving their goal Activity 7d: How am I doing? – allows the young person to review their behavioural progress

Table 13: Outlining the Facilitating Change 2 Intervention Pack (adapted from Atkinson, 2012)

3.9.3 Collection of Pre-Intervention Measures

The SDQ (Goodman, 2001) was administered by the researcher and was completed by all class teachers before the implementation of the single-case experiments.

3.9.4 Baseline Phase (A)

Kratochwill et al (2010) suggest that when implementing a SCED the baseline phase should include at least three data points, with a recommendation of five, in order to provide an opportunity to demonstrate an effect after the implementation of the intervention. The baseline observation measures were completed by TA's in each of the three schools. This phase lasted between 3 and 5 weeks.

3.9.5 Intervention Phase (B)

Following the baseline phase, the MI intervention was implemented for each of the participants. The weekly sessions were delivered on a 1:1 basis by the researcher and followed the sequence recommended by Atkinson (2012) (refer to table 13). The repeated observational measures were taken by teaching assistants either once or twice a week depending on staff availability.

3.9.6 Collection of Post-Intervention Measures

At the end of the intervention phase, all class teachers were asked to complete the SDQ (Goodman, 2001).

3.9.7 Intervention Integrity

The researcher followed the advice and guidance provided by Atkinson (2012) when delivering the MI intervention (see Appendix 1). In addition, the researcher kept research logs for each of the participants highlighting the activities completed in each of the sessions and a brief summary of how the pupils responded. An example research log can be found in Appendix 5.

3.10 Analysis of Data

Within the current study, visual analysis was used to analyse the repeated measures collected.

3.10.1 Visual Analysis

Traditionally, single case researchers have relied on visual analysis to determine whether a relationship between an independent variable and an outcome variable exists, and the strength or magnitude of that relationship (Gast and Spriggs, 2010, Hersen and Barlow, 1976). Analysing single case experimental designs by visual

analysis involves presenting the data in graphic form and then visually searching for patterns of change. Kazdin (1982) defines visual analysis as the process for reaching a judgment about reliable or consistent intervention effects by visually examining graphed data. For visual analysis, collected data is presented onto a graph to enable the researcher to examine the data for a participant over the entire experimental period. Kazdin (2003) suggests that if there is a change in the pattern of the data following the introduction of the intervention, an inference about the effect of an intervention can be made. Kazdin (1984) describes three principal change factors which can indicate that change has occurred as a result of the introduction of an intervention, these are:

- Variability: the degree of fluctuation in data points
- Trend: the direction in which data points are progressing
- Level: the disparity between data points in one phase and those in another, e.g. a rise or fall in data points can indicate a change in level.

Advocates for the use of visual analysis acknowledge that the method is less sensitive than statistical methods. Parsonson and Baer (1986) argue that this reduced level of sensitivity results in more conservative judgments. They further posit that this level of conservatism acts as a filter, meaning that any effects identified must be large enough to be detected. This argument is particularly noteworthy as it suggests that any changes would have to be of sufficient strength to be visually detectable.

Another advantage of visual analysis relates to the strength of magnitude of findings in applied contexts. Morgan and Morgan (2008) suggest that practicing professionals are most interested in the extent to which an intervention is significant or important and results in change for the client. This is known as clinical or practical significance and has been recommended as a relevant method for evaluating change. Morgan and Morgan (2008) suggest that the measure of the degree of change in single-case experimental data is of practical significance, this means that the differences that result in change for the 'client' will be apparent when using visual analysis.

Finally, Parsonson and Baer (1986) argue that a strength of visual analysis methods is that it provides the opportunity to undertake 'fine-grained analysis'. This means that when using graphical data, subtle changes can be observed within phases, or between phases which can provide the researcher with detailed and useful information. Parsonson and Baer (1986) suggest that although these subtle changes

may be highlighted by conducting visual analysis of the data in graphical form, such changes "may be masked by even simple statistical treatment of ongoing data, such as averaging or collapsing" (p.166).

3.10.2 Limitations of Visual Analysis

Whilst visual analysis is widely acknowledged to be the method of choice when analysing single-case research, it is important to acknowledge limitations of the approach. Researchers (e.g. Parsonson and Baer, 1978) have argued that findings from visual analysis should be "sufficiently tangible so that no reasonable person would dispute the outcome" (p.119). Brossart, Parker, Olson and Mahadevan (2006) suggest that there is increasing evidence which has questioned the reliability of using visual judgements to identify the effects of an intervention. Moreover, De Prospero and Cohen (1979) have reported low levels of agreement between researcher's conclusions about some SCED graphs.

A further limitation of visual analysis is linked to autocorrelation. Kazdin (1976) suggests that autocorrection refers to the correlation between data points separated by different time intervals. Therefore, autocorrelation can exist when time-series data is collected.

A key characteristic of time-series data is that observations next to each other are highly related to each other; according to Kratochwill (1978) this indicates that a score collected at one data point will predict subsequent data points. Barlow et al (2009) warn that underestimating the impact of autocorrelation can increase the possibility of a type one error i.e. misinterpreting the impact of the intervention.

3.10.3 Statistical Analysis

According to Smith (2012) the use of statistical analysis for SCED data is a much debated subject within the field. Parker et al., (2009) argue that "statistics for single-case research are still in an early stage of development" (p136.) however, there are a number of researchers who argue that statistical analysis should be used alongside visual analysis data in order to address some of the limitations previously discussed. Houle (2009) has described a selection of statistical tests which have been identified for use with SCED data. A selection of these statistical analyses will now be briefly described and considered for use in the current study.

3.10.4 Conventional *t* and *F* Tests

T-tests and ANOVAs are widely used to evaluate the effectiveness of interventions in the group design literature, there are however difficulties in applying these

analyses to single case data (Kratochwill, 1974). A key characteristic of SCEDs are their small sample sizes which means that it is highly unlikely that the assumptions of parametric tests can be met (Seigel and Castellan, 1988). Barlow et al (2009) also argue that the autocorrelation of single case data violates the assumption of independence made by parametric tests. Houle (2009) suggests that such tests "should be reserved for only rare instances" (p.280). He suggests that arguably the main limitation of these analyses is their assumption that data is normally distributed and argues that there is a high probability that SCED data will violate this assumption. It is for this reason that the researcher felt that carrying out t and F tests would not be appropriate in the context of the current research.

3.10.5 Randomisation Tests

McCormick (1995) highlights that randomisation tests do not rely on any assumptions regarding the distribution of data. Randomisation tests however can also be used when one of two randomisation schemes has been utilised in the study design (Houle, 2009); an alternation randomisation scheme or a phase randomisation scheme. Researchers (e.g. Heyvaert and Onghena, 2014) acknowledge that randomisation tests strengthen the validity of SCEDs but there are weaknesses with this approach. For example, suitably complex software is required to compute such analysis and a large number of observation points are also needed in order to achieve appropriate statistical power (Houle, 2009). For these reasons randomisation tests were not considered appropriate for use within the current study.

3.10.6 Interrupted Time-Series Analysis (ITSA)

According to Crosbie (1993) this approach can be used to control for autocorrelation, before using a t-test to determine any change in a data set. A major limitation of this approach however is the requirement that there are at least 50 observation points, for this reason ITSA was not considered appropriate for use in the current study.

3.10.7 Percentage of Non-Overlapping Data (PND)

This involves calculating the percentage of intervention data which is more extreme than the single most extreme data point in the baseline phase. Despite this being a useful and simple form of analysis, Parker, Hagan-burke and Vannest (2007) point out that it only focuses on one single data point in the baseline phase, which, due to its extremity is likely to be a highly unreliable data point. For this reason this form of analysis was not considered appropriate for the current study.

3.11 Ethical Considerations

Throughout the planning and implementation stages of the current study, the researcher ensured that consideration was given to the professional and ethical standards required of educational psychologists and researchers (BPS, 2004, HCPC, 2012). In addition, approval from the University of Nottingham Ethics Committee was obtained in April 2015 (see Appendix 6). Below is an outline of key ethical considerations relevant to the current study.

3.11.1 Informed Consent

Informed consent was gained from all participants.

3.11.2 Consent from Focus Child's Parents

Letters for the focus children's parents were sent out via school staff (Appendix 6). These letters contained information about the intervention and invited parents to an information sharing session. This letter also highlighted to parents that they had the right to withdraw their child from the research at any point. 3 parents attended an information session and gave written informed consent. The remaining 3 parents stated that they were happy for their child to participate and did not wish to attend an information session. These parents signed and returned the consent form without seeking any further information from the researcher or school. Refer to Appendix 7 for the parent consent form.

3.11.3 Consent from Schools

The SENCo from each of the 3 school's signed a consent form indicating that they gave permission for the research to be conducted in their letter. Refer to Appendix 8 for the school consent form.

3.11.4 Consent from School Staff

The researcher met with class teachers in order to complete the SDQ (pre and post) and an initial semi structured interview to gain an overview of each participant's behaviour. Before collecting this data all teachers signed and returned a consent form (Appendix 9) which indicated that they were happy for their responses to be reported in the researcher's thesis and that they had the right to withdraw from the research at any point.

3.11.5 Consent from the Focus Child

Prior to the first intervention session the researcher gained written informed consent from each of the 6 children who agreed to take part. All of the focus children were

told explicitly that they had the right to withdraw from the study at any stage without having to give a reason. Refer to Appendix 10 the focus children's consent form.

3.11.6 Confidentiality

At the information session, attended by 3 parents, it was highlighted by the researcher that all data collected would be anonymous and confidential and that individual children would not be identifiable. This information was also included on the parents informed consent form to ensure that the parents who did not attend the information session were aware of this point. All observation schedules were anonymised so that the focus children were not identifiable. In keeping with EP practice information collected during the intervention was only shared with school staff when explicit consent was gained from the young person, unless the information raised triggered a safeguarding concern.

Class teachers were also made aware that their responses during the semi-structured interview and the completed SDQ would be held securely and kept confidential.

3.11.7 Debriefing

All participants were provided with face-to-face debriefing after collection of the final measures. Participants were read and given a debriefing letter (see Appendix 11) and thanked for their participation.

3.12 Validity

Robson (2011) defines validity as "the degree to which what is observed or measured is the same as what was purported to be observed or measured" (p. 101). When conducting quantitative research Robson (2011) suggests that it is important to explore both the internal and external validity of the research design.

3.12.1 Internal Validity

Internal validity relates to the question of whether results obtained can be attributed to the impact of the intervention. Possible threats to internal validity have been outlined by Cook and Campbell (1979). Table 1 presents the measures taken by the researcher in the current study to reduce the threats to internal validity.

Threat to Internal Validity	How the study design may control for these threats
History: things have changed in the participant's environment other than the intervention	The researcher requested that the participants did not begin any new interventions during the study period. Adopting an AB design means that it is not possible to entirely control for this threat, particularly if there is a major event in school which may impact on all children involved. This must therefore be considered a limitation of the study.
Maturation: growth, change or development of participant's not related to the intervention	Data was collected over a period of time and so the current study is vulnerable to the effects of maturation. This is something that the researcher was unable to control for and should be acknowledged as a limitation of the research.
Testing: changes occurring as a result of practice and experience on any tests	Using an observational measure aimed to reduce this threat. The participants were not required to complete any tests and so would not experience practice effects.
Instrumentation: changes in the way participants are measured throughout the study period	The repeated measures were all conducted by the same member of staff throughout both the baseline and intervention period. Efforts were made to ensure that the measures were taken on the same day, during the same lesson each week however due to demands placed on TA time and other timetabling commitments this was not always possible. This should therefore be acknowledged as

	a limitation to the current study.
Mortality : e.g. participant drop-out	To reduce the chances of participant drop-out, the researcher ensured continued engagement with school staff in all 3 schools throughout the experimental period.
Hawthorne Effect: e.g. participant's changing their behaviour due to their awareness of being observed	To reduce this threat Teaching Assistants completed the repeated observation measure. It was anticipated that pupils would be habituated to the presence of Teaching Assistants in the classroom and so would be less likely to change their behaviour.

Table 14: Highlighting threats and controls to Internal Validity

3.12.2 External Validity (generalisability)

According to Mertens (2015) external validity is the extent to which findings and conclusions from one study can be generalised to another. Barlow, Nock and Hersen (2009) suggest that a major limitation of the SCED is that the small sample makes the generalisability of conclusions difficult. However, the intention of this study was to consider the effectiveness of the intervention for the 6 children involved and to contribute to a relatively new evidence base. The researcher still feels that the findings of the study can make a valuable contribution to the emerging MI field of research in education but acknowledges that the findings of the current research study are likely to be tentative and that further larger scale research will be required to increase the external validity of the results.

3.13 Reliability

Reliability can be defined as "the stability or consistency with which we measure something"(p.85, Robson, 2011). In order to increase the reliability of collected data Robson (2011) suggests that a range of sources which include participant error, participant bias, observer error and observer bias need to be considered.

In order to reduce participant error in the current study, where possible data collection was undertaken on the same day and approximately the same time each week. However, the researcher acknowledges that due to other demands placed on TAs time this was not always possible. Children were not required to complete self-report measures in the current study and class teachers (completing the SDQ,

Goodman, 2001) were told that there was no right or wrong answer in an attempt to reduce participant bias.

3.13.1 Reliability of Observations

Robson (2011) suggests that a high level of inter rater agreement may increase the reliability and validity of observation data. Inter rater agreement can be defined as the extent of agreement of two (or more) observers observing the same behaviour using the same schedule (Robson, 2011). In the current study, for each of the participants, 20% of the observations undertaken by the TAs were undertaken jointly with the researcher and Cohen's Kappa (Cohen, 1960) was used to show a statistical measure of agreement between school staff and the researcher.

By completing joint observations with the TA's, the researcher intended to reduce the threats of observer drift, which according to Robson (2011) is the potential change in the way an observer uses a schedule as they become familiar with it and expectancy effects which is the influence of the observer's expectations that there would be a positive impact of the behaviour as a result of the intervention (Robson, 2011).

In an attempt to control for reactivity of the participants (i.e. their behaviour changing due to being observed) the TAs were instructed to be as unobtrusive as possible by sitting in the corner of the classroom, away from the participants, but ensuring they had a clear view of their behaviour. It was hoped that having TAs take the repeated measure would minimise observer effects as they should be familiar figures to the participants who should be habituated to their presence. To ensure all of the TAs became accustomed to the observation schedule and to reduce the potential of observer error the researcher met with each of the TAs weekly during the baseline phase and twice during the intervention phase to answer any questions and ensure that the schedules were being completed correctly and consistently.

Chapter 4: Results

4.1 Introduction to Chapter

The current research investigated the effectiveness of a MI intervention for improving the disruptive classroom behaviour of targeted primary aged pupils. The research specifically focused on examining whether any improvements were observed in the participant's classroom behaviour and on whether class teachers observed any differences in behaviour, as measured by Goodman's (2001) SDQ. Through an exploration of the literature in the area of MI, two research questions were developed alongside two research hypotheses which were:

Hypothesis 1: The Motivational Interviewing intervention will reduce targeted pupils 'disruptive' classroom behaviour.

Hypothesis 2: The Motivational Interviewing intervention will result in improvements in targeted pupils' behaviour, measured by Goodman's (2001) Strength and Difficulties Questionnaire.

4.2 Data Analysis used in the Current Study

As previously discussed in Chapter 3, in order to investigate the research hypotheses, repeated observational measures were collected for each of the 6 participants. The data from this measure was analysed through the creation of SCED graphs using Microsoft Excel. Each individual graph was examined through visual analysis using five outcome measure features recommended by Kratochwill et al (2010). These measures are:

- Level
- Trend
- Variability
- Immediacy of Effect
- Overlap

A description of each of these measures and associated analysis is provided in table 15.

Measure Feature	Description	Indicators of an Effect Between Phases
Level	This refers to the mean score of data points within a phase. The mean line is indicated on each of the graphs for each target behaviour. To allow for further comparison between Baseline and Phase B the mean scores were also calculated for each of the target behaviours.	A difference between mean scores indicates a change between phases and suggests an intervention effect.
Variability	Refers to the range of data in each phase. For each of the data sets the range and standard deviation was calculated to allow for comparisons between phases.	Where there is low variation in the data and the standard deviation is also low this indicates a reliable data set.
Trend	Refers to the line of best fit in a data set. For each of the data sets trend lines have been added to highlight the rate of progress in Baseline and Phase B.	The trend line indicates an accelerating, stable or decelerating trend in the data. The steeper the slope of the line, the quicker the rate of progress. If a trend line changes between phases this can be indicative of an effect.
Immediacy of Effect	Refers to changes between the last 3 data points of	Where there is a difference in the first 3

	one phase and the first 3 data points of the next phase. Immediacy of effect is highlighted in each of the data sets.	data points in a new phase, in comparison to the previous phase, this indicates an immediate intervention effect.
Overlap	Refers to the proportion of data from one phase which overlaps with data from the previous phase. The percentage of overlap was calculated using the following equation: % Overlap = Number of overlapping data points / Total number of data points X 100	If there is a small percentage overlap between Baseline and Phase B this indicative of an intervention effect. If the percentage overlap is large, there is unlikely to have been an intervention effect.

Table 15: Summarising the five key outcome measure features used for visual analysis in the current study adapted from Kratochwill et al (2010)

Kratochwill et al (2010) suggest that the above features should be utilised during visual analysis to ascertain any demonstrations of an effect. Kratochwill et al (2010) suggest that to establish any causal relation, there needs to be three demonstrations of an effect. The researcher applied the same criteria to the current study where any improvements in the target behaviour were deemed to be significant when changes in three or more of the outcome-measure variables were suggestive of an effect.

The following chapter presents the main findings of this study for each of the six participants. The results for each of the participants begin with an analysis of their 'overall disruptive behaviour'. This represents a composite measure of the target behaviours that were observed. What follows is a breakdown of each of the behaviours that were observed for the participants. For each of the target behaviours measured, three graphs were created. The first shows the raw data with mean lines, the second shows the trend lines across Baseline and Phase B and the third highlights the immediacy of effect. Any gaps in the data have been highlighted using dotted lines to join the data points.

The SDQ scores follow the SCED data and for each participant are presented in a table to highlight pre and post differences.

4.2 Participant Characteristics and Results

4.2.1. Ben

Ben was aged 10 years 2 months at the start of the research period. He attends an average sized mainstream primary school. Ben does not have a Statement of Educational Needs and has had no previous Educational Psychology involvement. Ben was prioritised for the MI intervention due to his reported frequent, 'disruptive' classroom behaviour. According to his class teacher Ben is highly distracting in class and often displays immature behaviour such as pulling faces and talking in silly voices. On occasion it was reported that Ben would refuse to complete learning tasks and at times struggles to interact positively with peers. Ben is said to be of average ability, currently working towards a Level 4 in Literacy. In the past Ben has had access to a number of interventions to help manage his behaviour including learning mentors and an individual behaviour chart which according to school staff resulted in limited improvements in his behaviour. Since making the transition to year 6 Ben has not had access to these interventions.

Ben's target behaviours were as follows:

- **Distracting peers** (kicking the backs of other children's chairs, initiating conversations during individual working time, throwing objects across tables, making noises to himself)
- **Requiring teacher or teaching assistant intervention** (any instance that Ben had to be additionally reminded of an instruction or received an additional warning to improve his behaviour)

Visual Analysis

Visual analysis for Ben's behaviour will now be presented, beginning with a summary of his overall disruptive behaviour, consisting of a composite of the target behaviours that were observed. Graphs and visual analysis will then be presented for the target behaviours of distracting peers and requiring teacher or teaching assistant intervention. A summary of inter rater agreement will then be presented followed by the pre and post data collected from Goodman's (2001) SDQ.

Overall Disruptive Behaviour

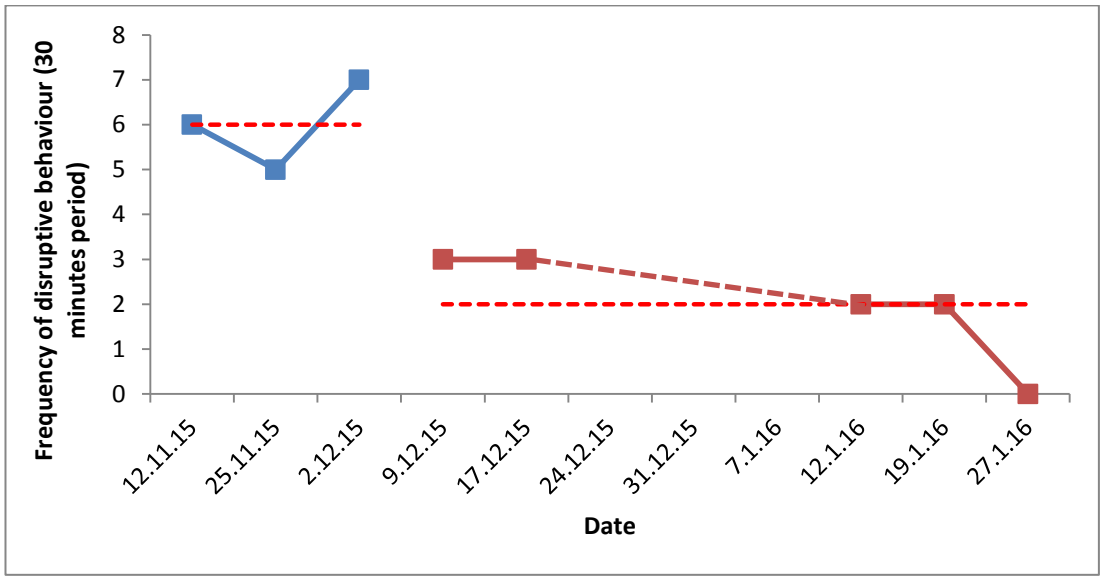

Figure 2: A line graph showing Ben's overall frequency of disruptive behaviour over a 30 minute period

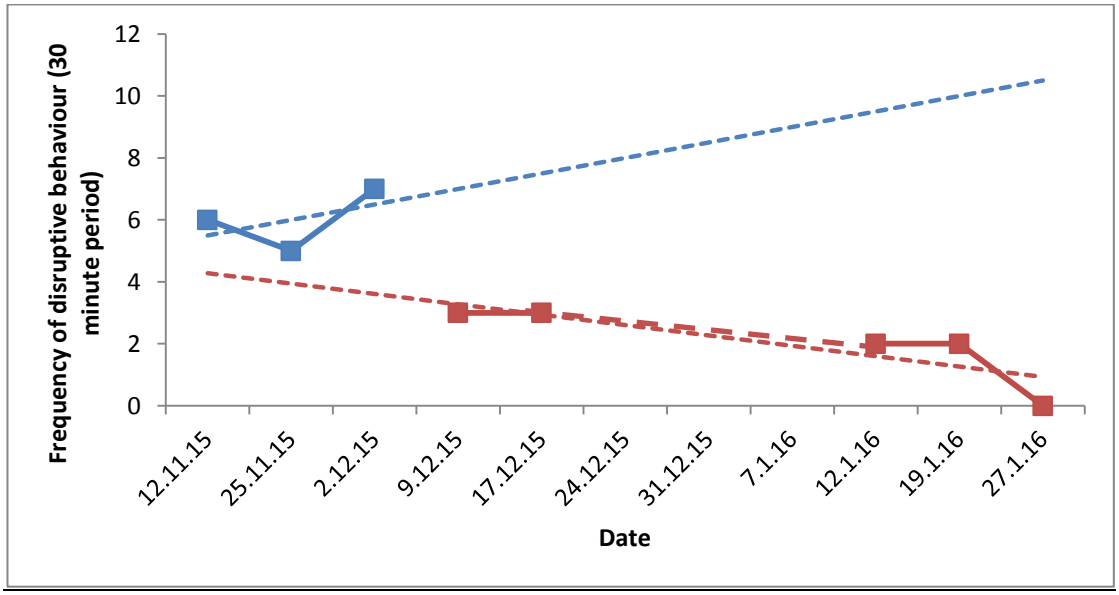

Figure 3: A line graph showing the overall frequency of disruptive behaviour over a 30 minute period with trend lines

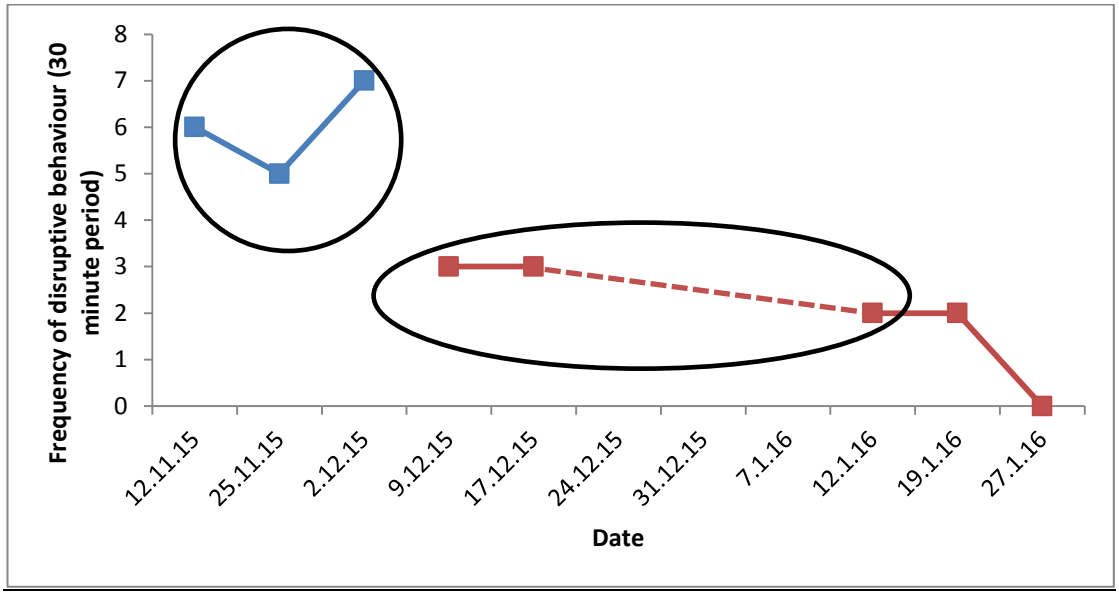

Figure 4: A line graph showing the immediacy of effect across baseline and intervention phase

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 6 Phase B mean: 2
Variability	Baseline range: 4 - Standard Deviation: 1 Phase B range: 2 -Standard Deviation: 1.2
Trend	Baseline: 0.5 Phase B: 0.34 The baseline phase has an accelerated trend line. Phase B shows a decelerated trend line.
Immediacy of effect	Figure 4 shows evidence of an immediate effect between the baseline and phase B.
Overlap	None of the data points in phase B overlap with baseline.

Table 16: Visual analysis for Ben for the target overall 'disruptive' behaviour

Visual Analysis Summary: Overall Disruptive Behaviour

The visual analysis suggests that there was an observable decrease in Ben's overall disruptive behaviour over the entire intervention period, highlighted by the decrease in mean level from 6 in the Baseline Phase to 2 in Phase B. The accelerating trend line in the baseline phase suggests that without the introduction of the MI intervention, the frequency of Ben's disruptive behaviour may have increased. Figure 4 highlights that there is evidence of an immediate effect after the introduction of the MI intervention. None of the data points in Phase B overlap with the data points in baseline, providing evidence of an intervention effect. According to Kratochwill et al's (2010) guidance these findings provide evidence of an intervention effect.

Visual Analysis for the Target Behaviour 'Distracting Peers'

For Ben, the target behaviour 'Distracting Peers' incorporated behaviours such as kicking the backs of other children's chairs, initiating conversations during individual working time, throwing objects across the table and making noises to himself.

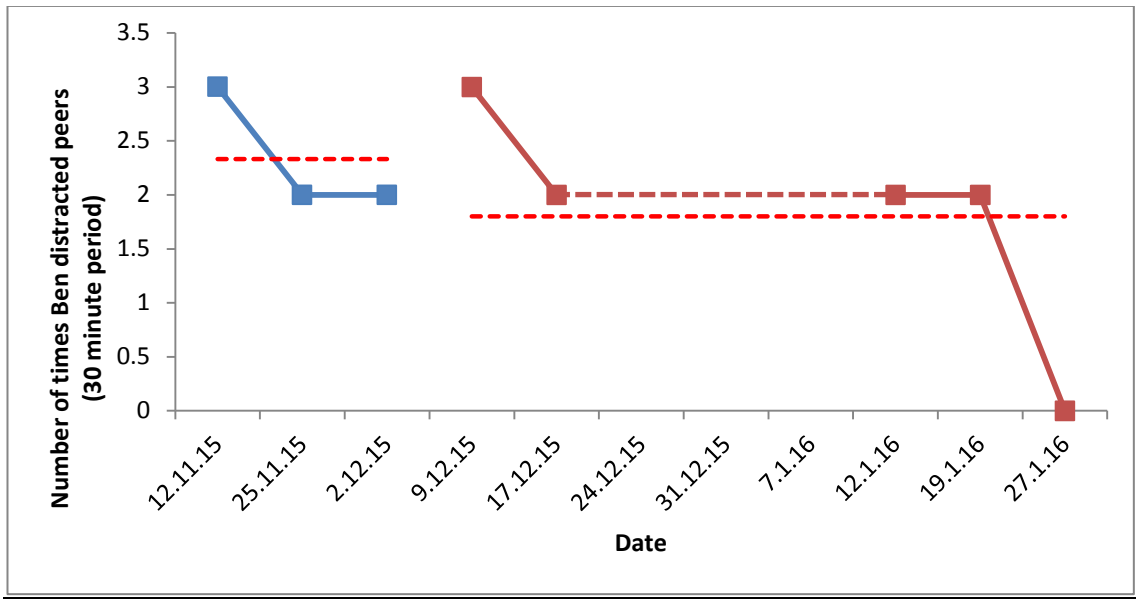

Figure 5: A line graph to show the frequency Ben distracted peers in a 30 minute period across the baseline and intervention phase with mean lines

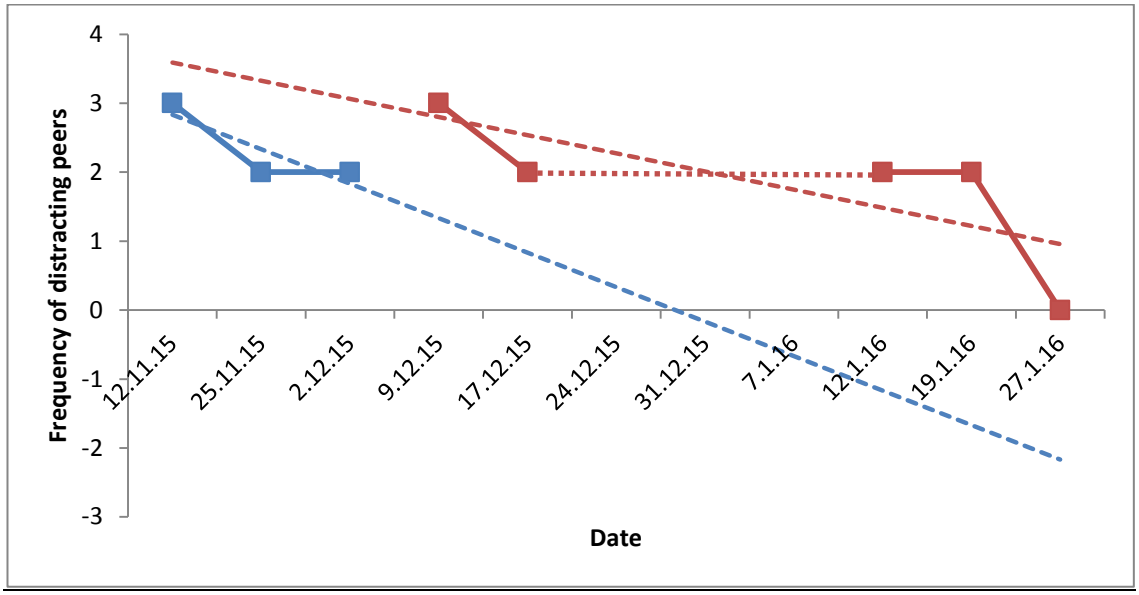

Figure 6: A line graph to show the frequency Ben distracted peers in a 30 minute period across the baseline and intervention phase with trend lines

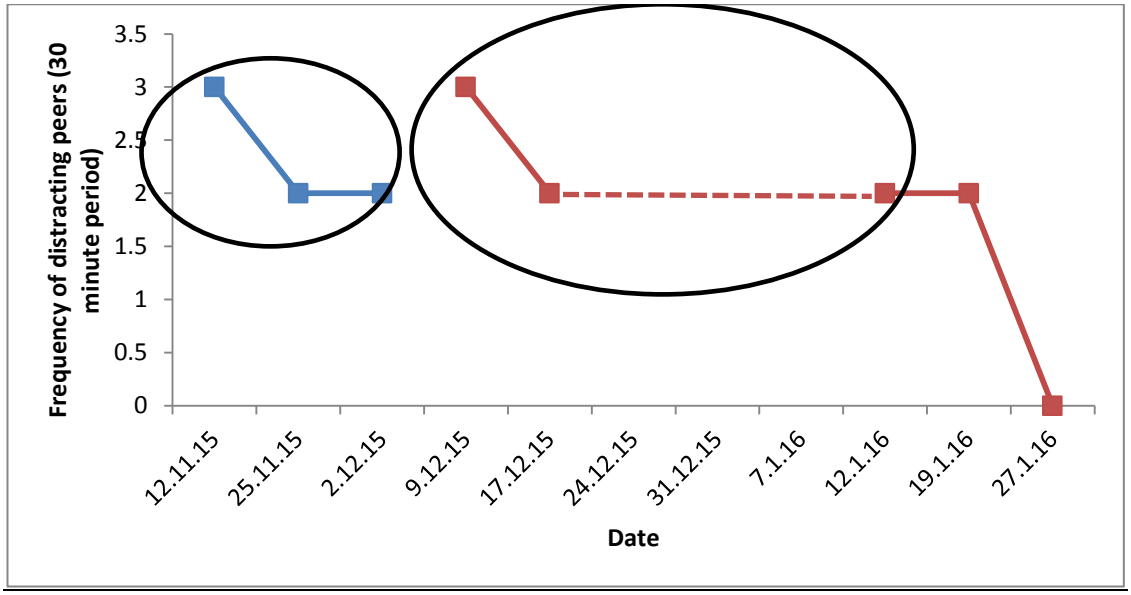

Figure 7: A line graph to show the immediacy of effect across the baseline and intervention phase for the target behaviour 'distracting peers'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 2.3 Phase B mean: 1.8
Variability	Baseline range: 1 - Standard Deviation: 0.57 Phase B range: 3 -Standard Deviation: 1.09
Trend	Baseline: -0.5 Phase B: -0.26 Both the baseline and phase B show a decelerated trend line.
Immediacy of effect	There was no immediate effect between baseline and phase B.
Overlap	80% of the data points in phase B overlap with baseline.

Table 17: Visual analysis summary for the target 'distracting peers'

Visual Analysis Summary: Distracting Peers

The visual analysis suggests that there was an observable decrease in the number of times Ben distracted peers at the end of the intervention period, indicated by a small reduction in the mean level from 2.3 in the Baseline Phase to 1.8 in Phase B. However, the decelerating trend line in the baseline phase suggests that this decrease may have occurred without the introduction of the MI intervention. There is a larger variation in the data in Phase B in comparison to baseline. There is no evidence of an immediate effect after the introduction of the intervention. A large proportion (80%) of the data in Phase B overlaps with Baseline, indicating that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour 'Requiring Teacher/TA Intervention'

For Ben, the target behaviour 'Requiring Teacher/TA Intervention' incorporated any instances where he had to be additionally reminded of an instruction or received an additional warning to improve his behaviour.

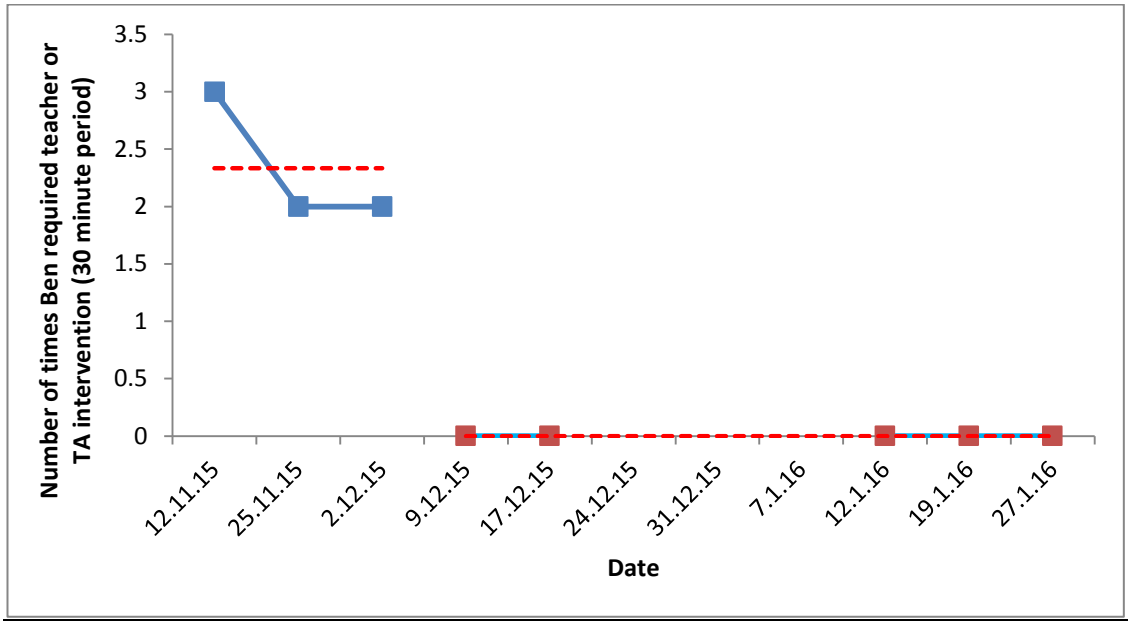

Figure 8: A line graph to show the frequency Ben required teacher or TA intervention in a 30 minute period across baseline and intervention phases with mean lines

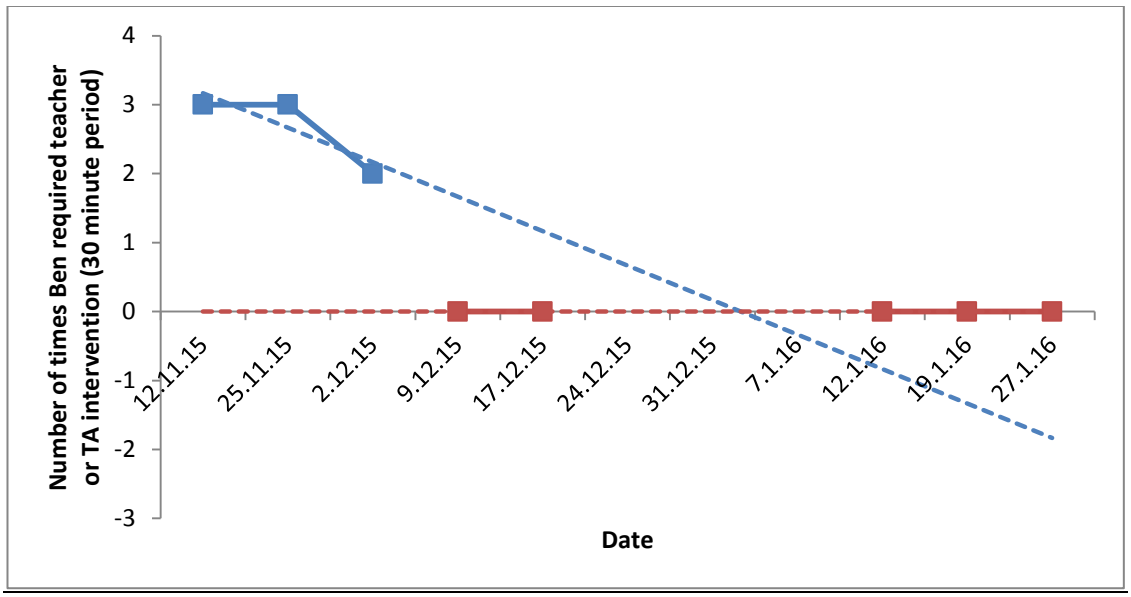

Figure 9: A line graph to show the frequency Ben required teacher or TA intervention in a 30 minute period across baseline and intervention phases with trend lines

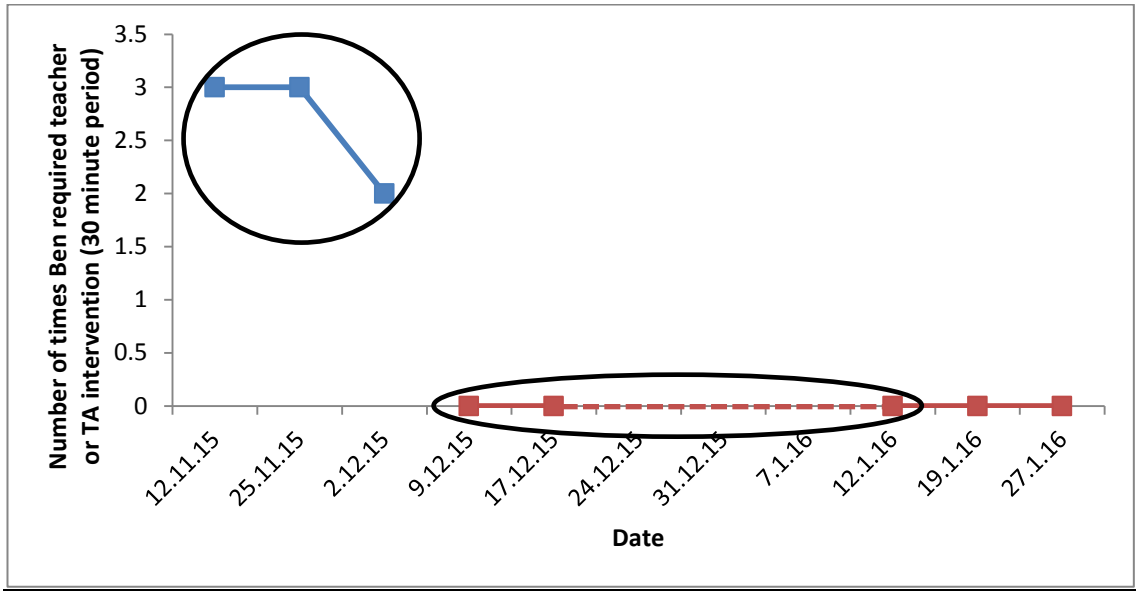

Figure 10: A line graph to show the immediacy of effect for the target behaviour requiring teacher/TA intervention

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 2.3 Phase B mean: 0
Variability	Baseline range: 1 Standard Deviation: 0.57 Phase B range: 0 Standard Deviation: 0
Slope of trend line	Baseline:- 0.5 Phase B: 0 The baseline phase shows a decelerated trend line. Phase B shows a stable trend line.
Immediacy of effect	There is evidence of an immediate effect between baseline and phase B.
Overlap	None of the data points in phase B overlap with baseline.

Table 18: Visual analysis summary for Ben, target behaviour: requiring teacher or teaching assistant intervention

Visual Analysis Summary: Requiring Teacher/TA Intervention

The visual analysis suggests that there was a clear and stable decrease in the frequency that Ben required teacher/TA intervention across the entire intervention period. This is highlighted by a reduction in the mean level from 2.3 in the Baseline Phase to 0 in Phase B. It is important to highlight however that the decelerating trend line in the baseline phase suggests that this decrease may have occurred without the introduction of the MI intervention. There is no variation in the data in Phase B. There is clear evidence of an immediate effect after the introduction of the intervention. None of the data points in Phase B overlap with the data points in Baseline, suggesting evidence of an intervention effect. According to Kratochwill et al's (2010) guidance, these findings are suggestive of an intervention effect.

Inter Rater Agreement

Joint observations for Ben were completed twice (once in each phase) over the research period to enhance the observational measures reliability. Cohen's kappa coefficient (Cohen, 1960) was calculated for the observations as a way of providing inter rater agreement. The level of agreement was defined using Landis and Koch's (1977) levels of agreement.

Over the two joint observations the Cohen's kappa ranged from 0.59 to 0.61, with a mean of 0.60. According to Landis and Koch's (1977) categories this indicates a moderate level of agreement (Landis and Koch, 1977).

Strength and Difficulties Questionnaire (SDQ, Goodman, 1997)

Goodman's (1997) behavioural screening questionnaire was completed by Ben's class teacher pre and post the MI intervention. The questionnaire contained 25 items which the class teacher was asked to rate as 'not true', 'somewhat true' or 'certainly true'. The scores for each of the scales are presented in the table below.

Time information collected	Total difficulties score	Emotional symptoms score	Conduct problem score	Hyperactivity scale	Peer problem scale	Pro-social scale
PRE	14	0	5	8	1	7
POST	5	0	2	3	0	10
Difference	-9	-	-3	-5	-1	+3

Table 19: Teacher ratings of Ben's behaviour on the SDQ (Goodman, 1997) completed before and after the MI intervention

Summary of findings from table 13

All scores provided by Ben's teacher on the scales emotional symptoms, conduct problems, hyperactivity and peer problems, after the MI intervention are lower, or the same, as those provided before the MI intervention. The biggest difference is observed in the hyperactivity scale. The score on the pro-social scale is higher after the MI intervention was implemented. Ben's total difficulties score decreased at the end of the intervention period from 14 to 5.

Ben's Response to the Intervention

Ben presented as a confident and articulate pupil who engaged with each of the sessions well. At times Ben found open- ended, higher-order language questions challenging. The researcher observed that Ben enjoyed the practical elements of the intervention and was able to reflect more effectively and discuss his thoughts more readily during practical activities such as drawing and card sorting.

4.2.2 Oscar

Oscar was aged 10 years 4 months at the start of the research period. He attends an average mainstream primary school. Oscar has no Statement of Special Educational Needs and has had no previous Educational Psychology involvement. Oscar was prioritised for the MI intervention due to school staff's difficulties managing his behaviour, particularly in the classroom. It was reported that Oscar can be distracting in lessons to both staff and pupils; he will often make noises (humming, singing etc.), shout out and attempt to distract peers by prodding them, whispering to them during individual learning time and making noises. The researcher was told that Oscar's behaviour can be particularly difficult to manage when he is being taught by an unfamiliar member of staff. Oscar is currently working towards a Level 5 in Literacy. Oscar had access to a learning mentor when he was in Year 5 but was not receiving any additional support to help manage his behaviour at the start of the research period.

Oscar's target behaviours were:

- **Distracting peers** (prodding other children with stationary, making noises at inappropriate times and whispering to himself, or other children, during silent working time)
- **Shouting out** (shouting out without permission from school staff)

Visual Analysis

Visual analysis for Oscar's behaviour will now be presented, beginning with a summary of his overall disruptive behaviour, consisting of a composite of the target behaviours that were observed. Graphs and visual analysis will then be presented for the target behaviours of 'Distracting Peers' and 'Shouting Out'. A summary of inter rater agreement will then be presented followed by the pre and post data collected from Goodman's (2001) SDQ.

Overall 'Disruptive Behaviour'

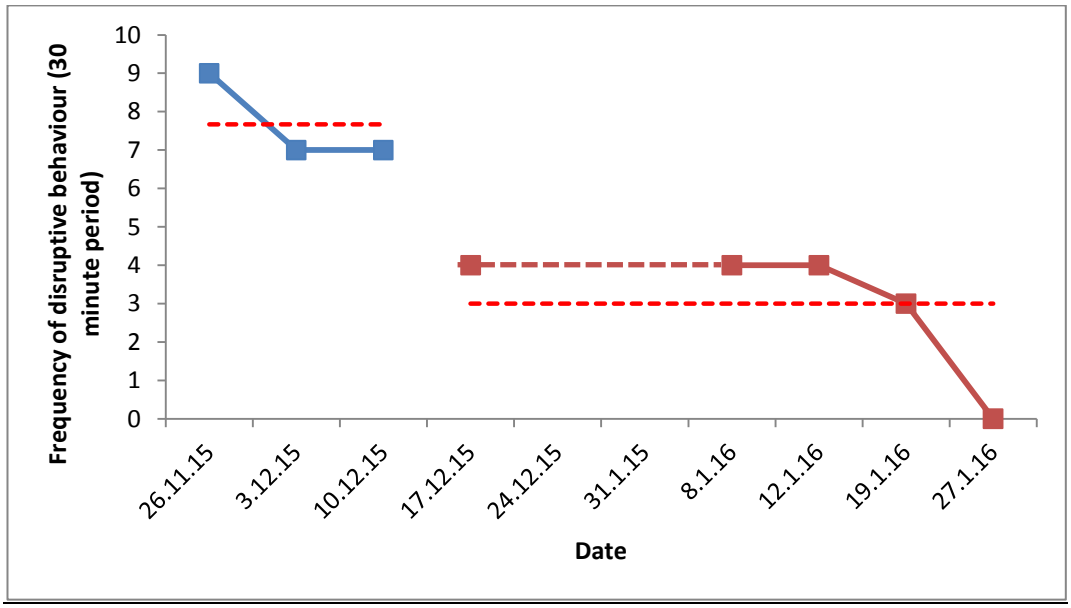

Figure 11: A line graph to show the frequency of Oscar's overall 'disruptive behaviour' across the baseline and intervention phases with mean lines

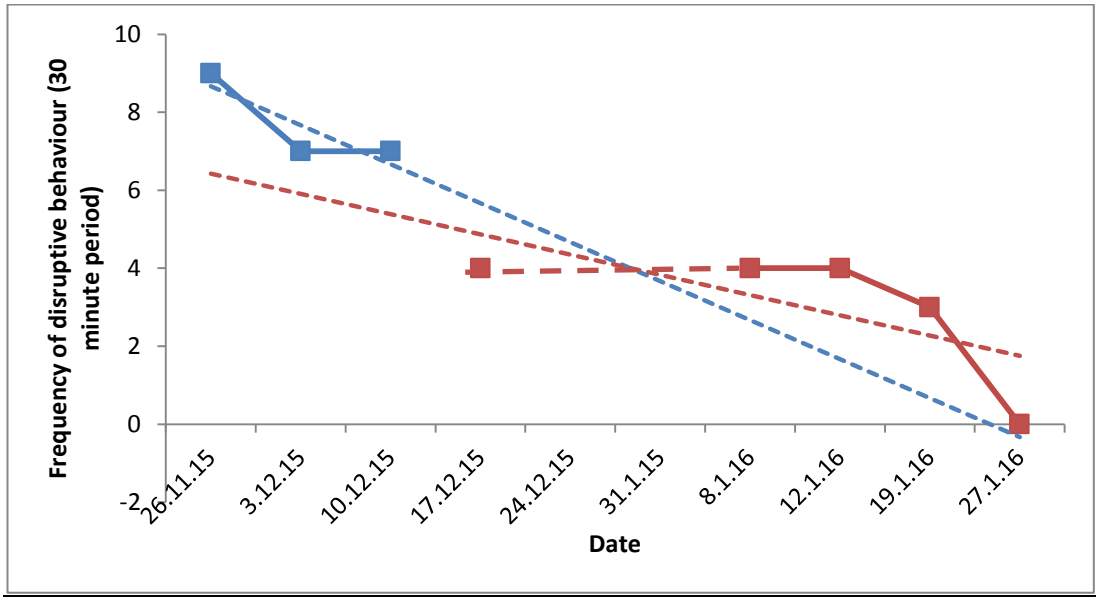

Figure 12: A line graph to show the frequency of Oscar's overall 'disruptive behaviour' across the baseline and intervention phases with trend lines

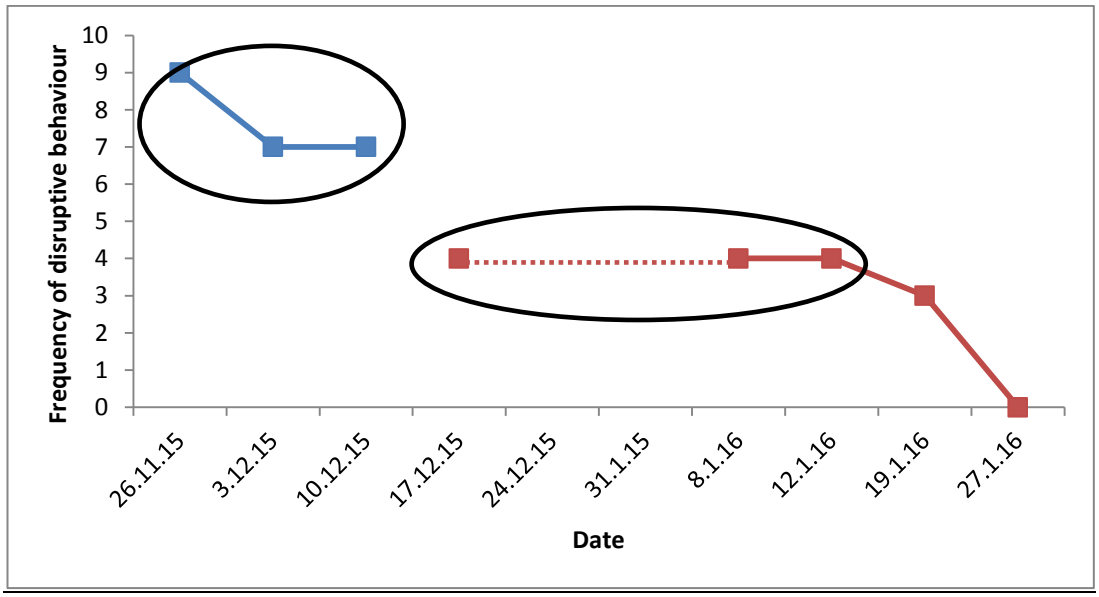

Figure 13: A line graph to show the immediacy of effect for Oscar's overall 'disruptive behaviour'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 7.6 Phase B mean: 3
Variability	Baseline range: 2 - Standard Deviation: 1.15 Phase B range: 4 - Standard Deviation: 1.73
Trend	Both baseline and phase B show a decelerated trend line. Baseline phase has the steepest slope.
Immediacy of effect	There is evidence of an immediate effect between baseline and phase B.
Overlap	None of the data points in phase B overlap with baseline.

Table 20: Visual analysis summary for Oscar, target: overall 'disruptive behaviour'

Visual Analysis Summary: Overall 'Disruptive Behaviour'

The visual analysis suggests that there was an observable decrease in Oscar's overall disruptive behaviour over the entire intervention period, highlighted by a decrease in the mean level from 7.6 in the Baseline Phase to 3 in Phase B. However, given the decelerating trend line in the baseline phase, it is possible that the improvement in behaviour may have occurred without the introduction of the MI intervention. There is a larger variation in the data in Phase B and evidence of an immediate effect after the introduction of the intervention. None of the data points in Phase B overlap with the data points in baseline, providing evidence of an intervention effect. According to Kratochwill et al's (2010) guidance these findings indicate an intervention effect.

Visual Analysis for the Target Behaviour 'Distracting Peers'

For Oscar, the target behaviour 'Distracting Peers' incorporated behaviours such as prodding other children with stationary, making noises at inappropriate times and whispering during individual learning time.

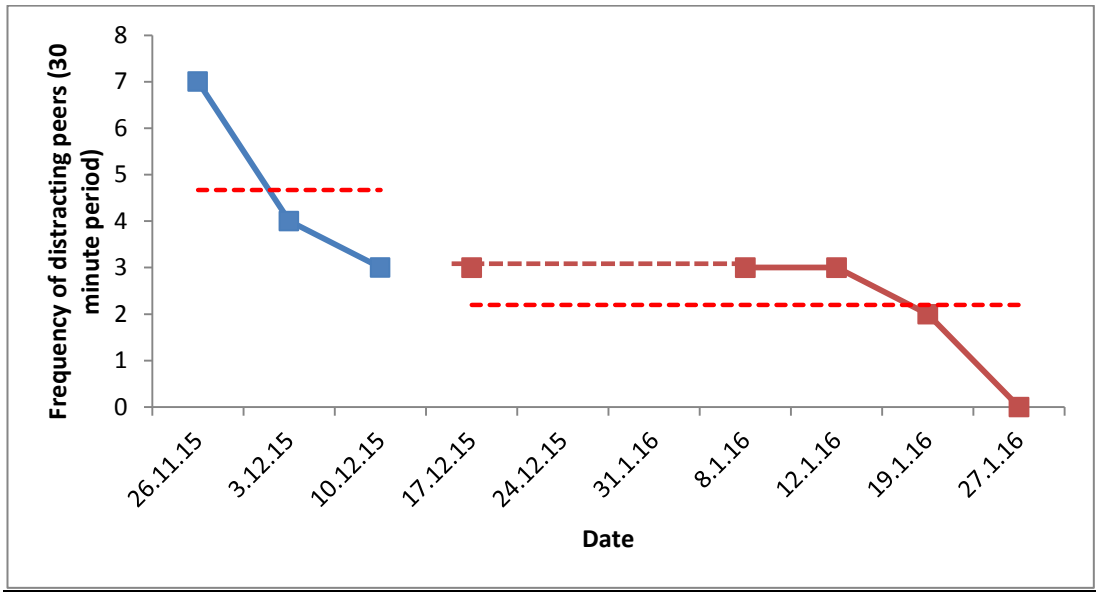

Figure 14: A line graph to show the frequency that Oscar 'distracted peers' in a 30 minute period across the baseline and intervention phases with mean lines

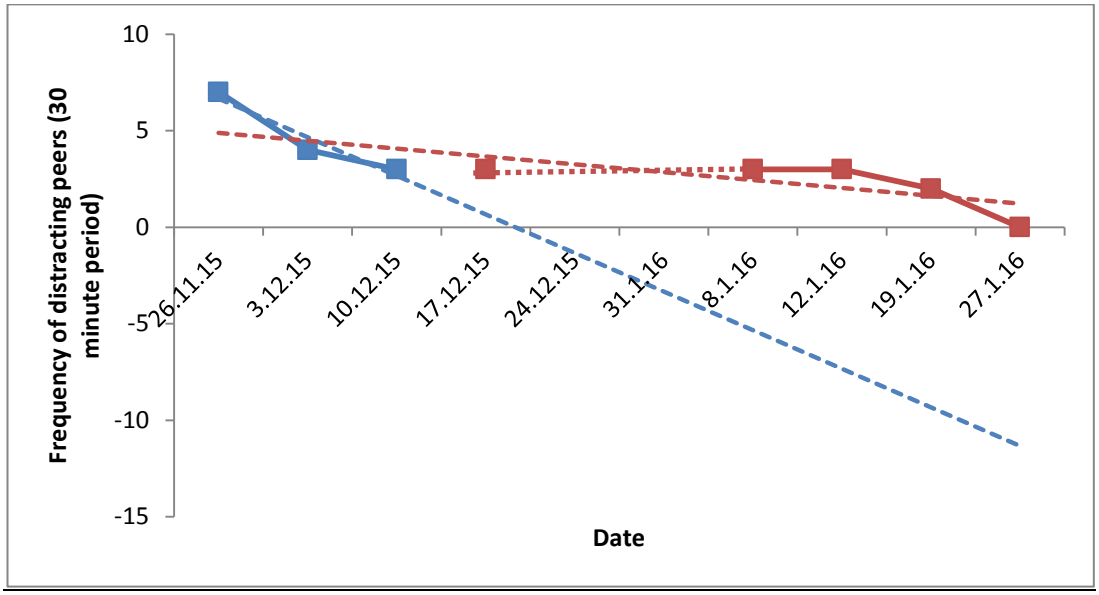

Figure 15: A line graph to show the frequency that Oscar 'distracted peers' in a 30 minute period across the baseline and intervention phases with trend lines

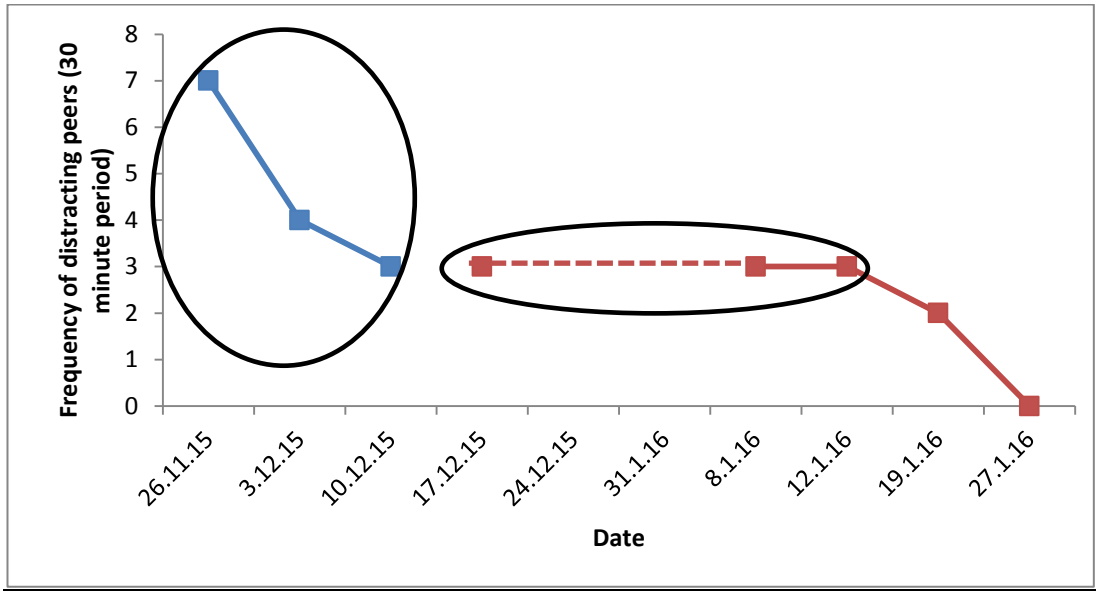

Figure 16: A line graph showing the immediacy of effect for the target behaviour 'distracting peers'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 4.6 Phase B mean: 2.2
Variability	Baseline range: 4 -Standard Deviation: 2.08 Phase B range: 3 -Standard Deviation: 1.30
Trend	Baseline: -2 Phase B: -0.41 Both baseline and phase B show a decelerated trend line. Baseline phase has the steepest deceleration slope.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B.
Overlap	60% of the data points in phase B overlap with baseline.

Table 21: Visual analysis summary for the target behaviour 'distracting peers'

Visual Analysis Summary: Distracting Peers

The visual analysis suggests that there was an observable decrease in the number of times Oscar distracted peers at the end of the intervention period highlighted by a reduction in the mean level from 4.6 in the Baseline Phase to 2.2 in Phase B. However, the decelerating trend line in the baseline phase suggests that this decrease may have occurred without the introduction of the MI intervention. The Baseline phase shows a large variation in the data in comparison to Phase B. There is no evidence of an immediate effect after the introduction of the intervention. 60% of the data in Phase B overlap with the data points in Baseline indicating that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour 'Shouting Out'

For Oscar, the target behaviour 'Shouting Out' incorporated any occasion during the observation period where he called out without permission from school staff.

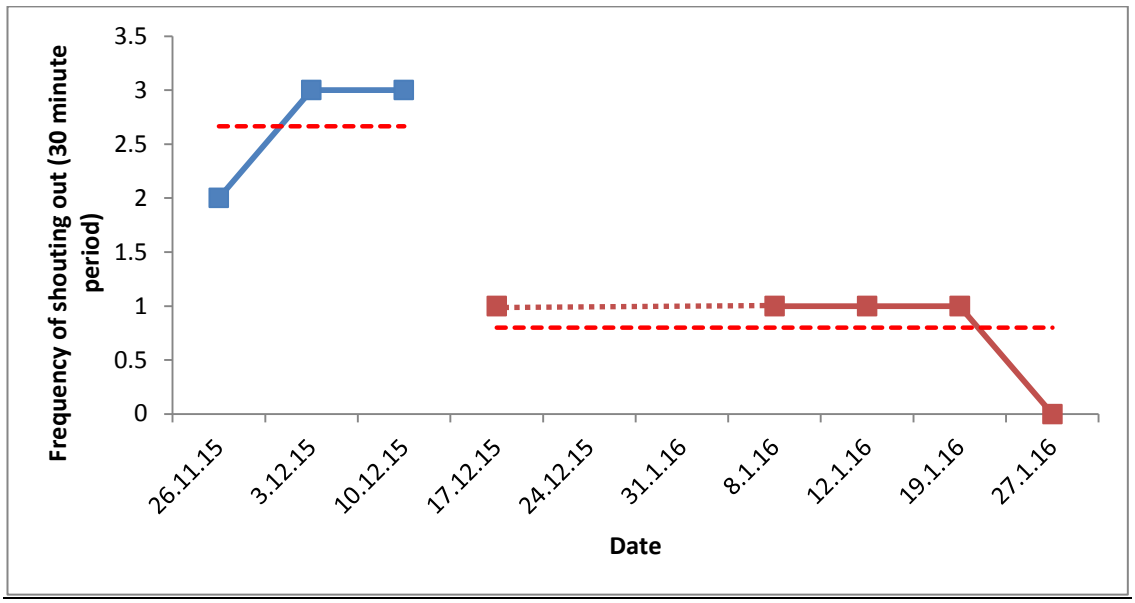

Figure 17: A line graph to show the frequency that Oscar shouted out in a 30 minute period across the baseline and intervention phases with mean lines

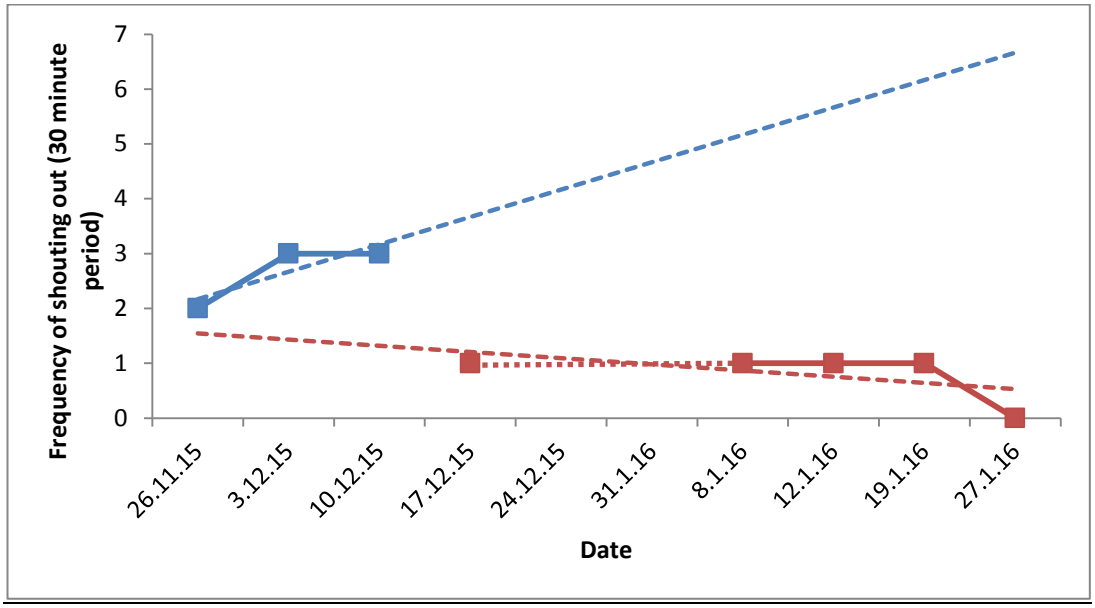

Figure 18: A line graph to show the frequency that Oscar shouted out in a 30 minute period across the baseline and intervention phases with trend lines

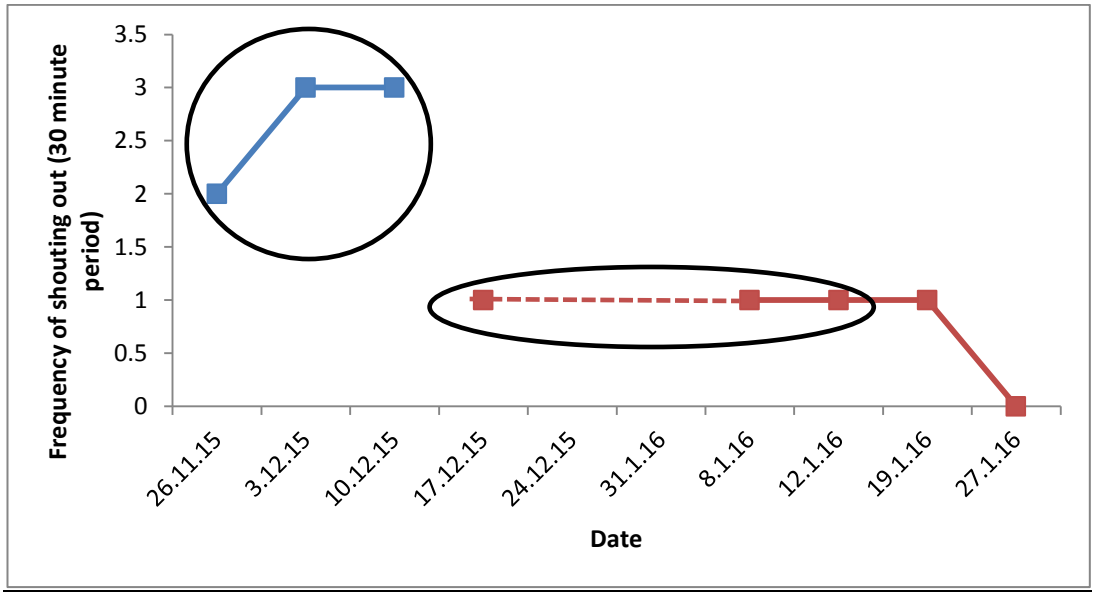

Figure 19: A line graph to show the immediacy of effect for the target behaviour shouting out

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 2.6 Phase B mean: 0.8
Variability	Baseline range: 1 -Standard Deviation: 0.57 Phase B range: 1 -Standard Deviation: 0.44
Trend	Baseline: 0.5 Phase B: -0.11 Baseline phase shows an accelerated trend. Phase B shows a decelerated trend.
Immediacy of effect	There is clear evidence of an immediate effect between baseline and phase B.
Overlap	None of the data points in phase B overlap with baseline.

Table 22: Visual analysis summary for the target behaviour 'shouting out'

Visual Analysis Summary: 'Shouting Out'

The visual analysis suggests that there was an observable decrease in the frequency that Oscar shouted out throughout the entire intervention period, highlighted by a decrease in the mean level from 2.6 in the Baseline Phase to 0.8 in Phase B. The accelerating trend line in the baseline phase suggests that the frequency of this behaviour may have increased without the introduction of the MI intervention. There is clear evidence of an immediate effect. None of the data in Phase B overlaps with the data in Baseline, highlighting evidence of an intervention effect. According to Kratochwill et al's (2010) guidance these findings are suggestive of an intervention effect.

Inter Rater Agreement

Joint observations for Oscar were completed twice (once in each phase) over the research period to enhance the observational measures reliability. Cohen's kappa coefficient (Cohen, 1960) was calculated for the observations as a way of providing inter rater agreement. The level of agreement was defined using Landis and Koch's (1977) levels of agreement.

Over the two joint observations the Cohen's kappa ranged from 0.60 to 1.0 (absolute agreement), with a mean of 0.80. According to Landis and Koch's (1977) categories this mean indicates a substantial level of agreement (Landis and Koch, 1977).

Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997)

Goodman's (1997) behavioural screening questionnaire was completed by Oscar's class teacher pre and post the MI intervention. The questionnaire contained 25 items which the class teacher was asked to rate as 'not true', 'somewhat true' or 'certainly true'. The scores for each of the scales are presented in the table below.

Time information collected	Total difficulties score	Emotional symptoms score	Conduct problem score	Hyperactivity scale	Peer problem scale	Pro-social scale
PRE	15	0	6	8	1	7
POST	5	0	1	3	1	9
Difference	-10	=	-5	-5	=	+2

Table 23: Teacher ratings of Oscar's behaviour on the SDQ (Goodman, 1997) completed before and after the MI intervention

Summary of findings from table 17

All scores provided by Oscar's teacher on the scales emotional symptoms, conduct problems, hyperactivity and peer problems, after the MI intervention are lower, or the same, as those provided before the MI intervention. The biggest differences are observed in the conduct and hyperactivity scales. The score on the pro-social scale is higher after the MI intervention was implemented. Oscar's total difficulties score decreased at the end of the intervention period from 15 to 5.

Oscar's Response to the Intervention

Oscar presented as a very serious pupil but engaged well in all of the sessions. The researcher observed that Oscar engaged particularly well with the 'Wheel of Change' (based on Prochaska and DiClementes, 1982, Stage of Change Model) and referred to it regularly throughout the sessions. On a number of occasions throughout the intervention Oscar expressed that he did not want to complete writing activities because they were "too hard".

4.2.3 James

James was aged 10 years 6 months at the start of the research period. He attends a mainstream primary school. James has had no previous Educational Psychology involvement. James was prioritised for the MI intervention due to his reported frequent, disruptive classroom behaviour. It was reported that James displays challenging behaviours and appears to crave the attention he receives for negative behaviour. James will frequently leave his seat and often disrupts the learning of other children in his class by shouting out, making noises and being rude to school staff. James was reported by his class teacher to be of average academic ability, working at a level 4 in Literacy. James was not receiving any additional support or interventions to help manage his behaviour throughout the research period.

During the intervention phase James was temporarily excluded from school because of his behaviour. This resulting in two missing data points on the 3.2.16 and the 9.2.16. On the graphs this gap is highlighted using a dotted line.

James' target behaviours:

- **Shouting out** (without permission from school staff)
- **Displaying attention seeking behaviour** (any time James purposefully made a noise to gain attention, this included singing/humming to himself and making 'distracting noises')
- **Distracting peers** (talking to other children during independent learning time, throwing stationary at other children, poking children on the carpet, and kicking the backs of other children's chairs)
- **Being rude or ignoring instructions** (any time James made a rude comment to a member of staff or directly ignored or refused to follow an instruction)

Visual Analysis Summary: Overall 'Disruptive Behaviour'

Visual analysis for James' behaviour will now be presented, beginning with a summary of his overall disruptive behaviour, consisting of a composite of the target behaviours that were observed. Graphs and visual analysis will then be presented for the target behaviours of distracting peers, shouting out, displaying attention seeking behaviour, being rude/ignoring instructions. A summary of inter rater agreement will then be presented followed by the pre and post data collected from Goodman's (2001) SDQ.

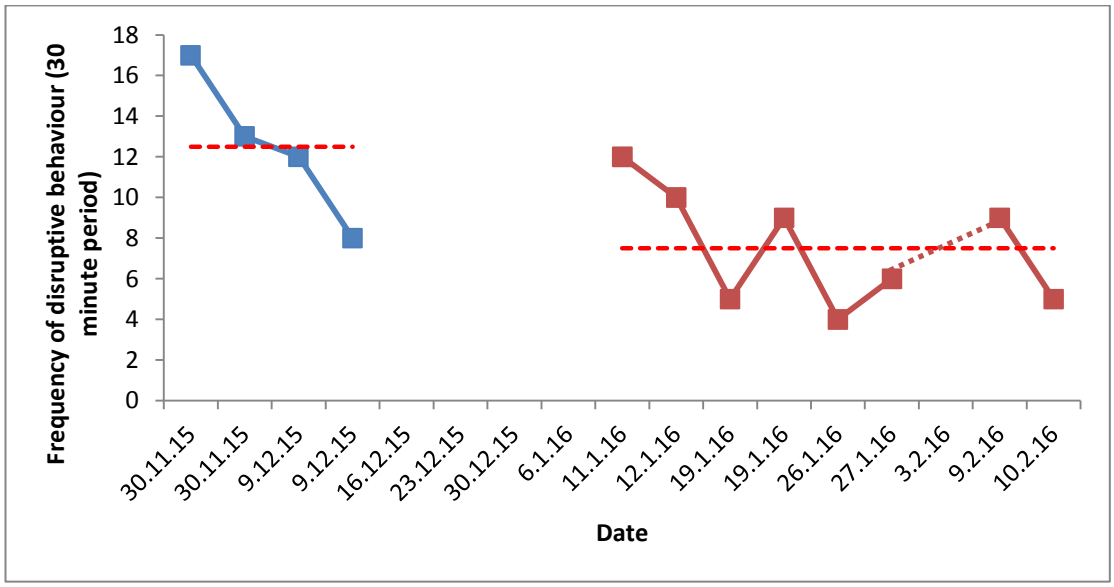

Figure 20: A line graph to show James' overall 'disruptive behaviour' over a 30 minute period across baseline and intervention phases with mean lines

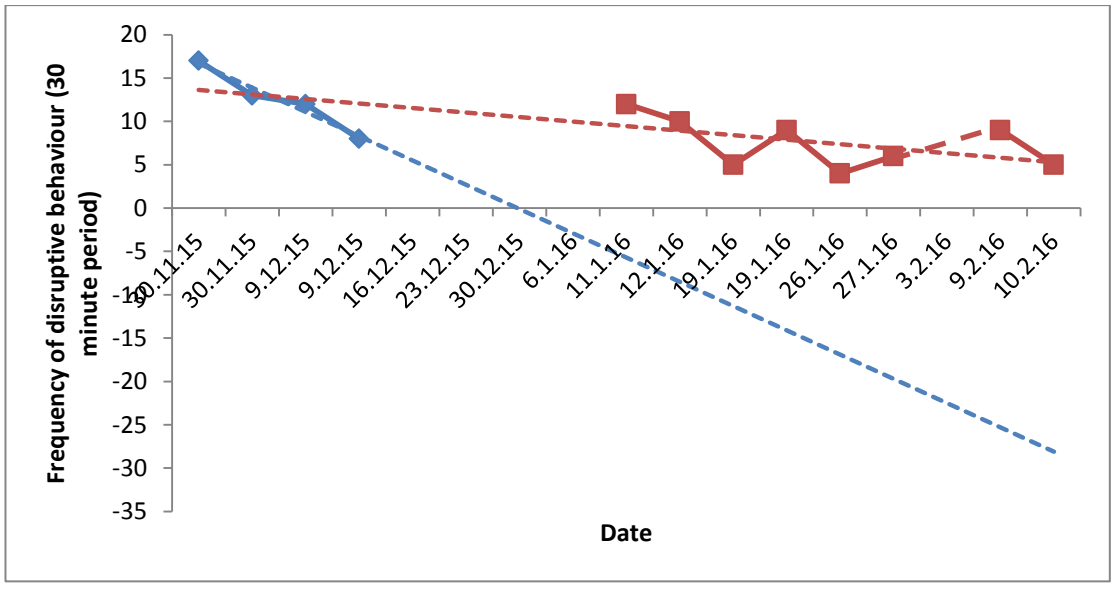

Figure 21: A line graph to show James' overall disruptive behaviour over a 30 minute period across baseline and intervention phases with trend lines

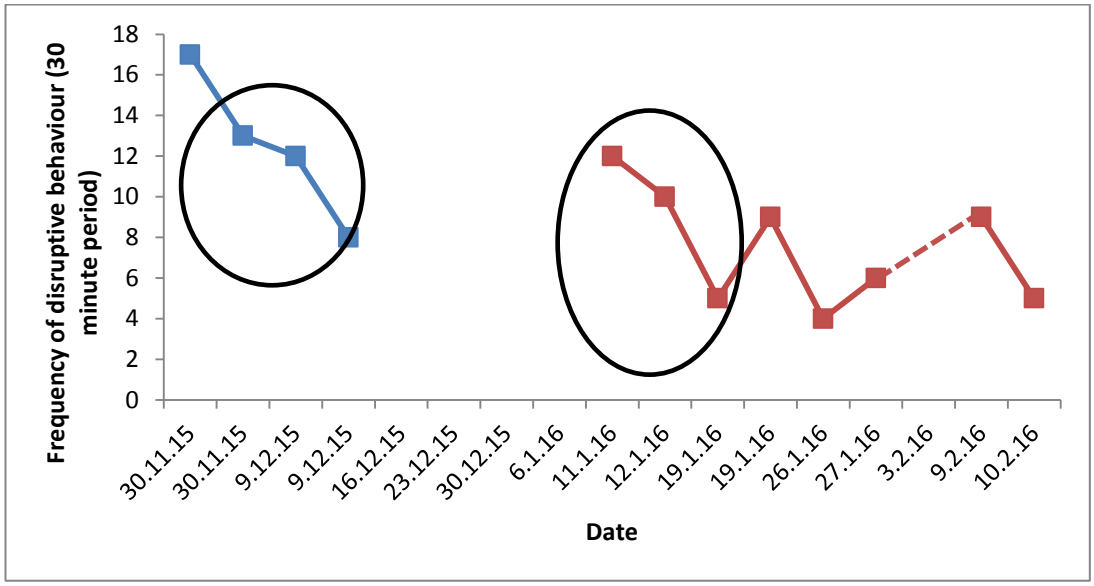

Figure 22: A line graph to show the immediacy of effect for James' overall 'disruptive behaviour'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 12.5 Phase B mean: 7.5
Variability	Baseline range: 9 -Standard Deviation: 3.69 Phase B range: 7 -Standard Deviation: 5.28
Trend	Baseline: -2.8 Phase B: -0.52 Both baseline and phase B show a downward trend. The downward slope is steepest in baseline.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B highlighted by the first 3 data points in Phase B.
Overlap	50% of the data points in phase B overlap with baseline.

Table 24: Visual analysis summary for James' overall 'disruptive behaviour'

Visual Analysis Summary: Overall 'Disruptive Behaviour'

The visual analysis suggests that there was an observable decrease in James' overall disruptive behaviour highlighted by a decrease in the mean level from 12.5 in the Baseline Phase to 7.5 in Phase B. However, given the decelerating trend line in the baseline phase it is possible that the improvement in behaviour may have occurred without the introduction of the MI intervention. There is a higher level of variability in the Baseline Phase in comparison to Phase B. There was no evidence of an immediate effect after the introduction of the intervention. Half of the data points in Phase B overlap with the data points in baseline making it difficult to conclude that an intervention effect may have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour Shouting Out

For James, the target behaviour 'Shouting Out' incorporated any occasion during the observation period where he called out without permission from school staff.

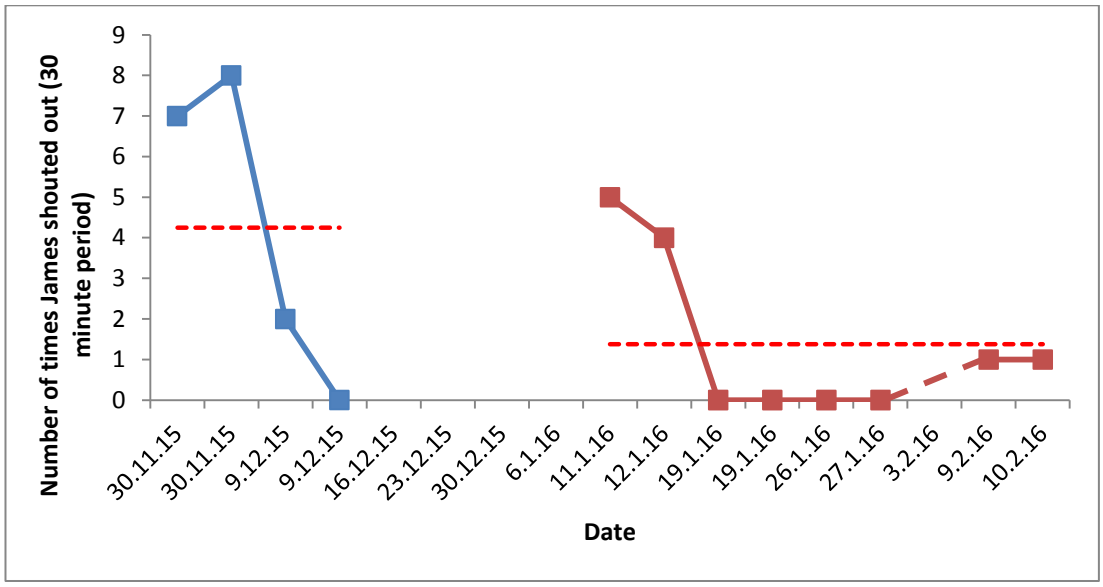

Figure 23: A line graph to show the frequency that James shouted out over a 30 minute period across both baseline and intervention phases with mean lines

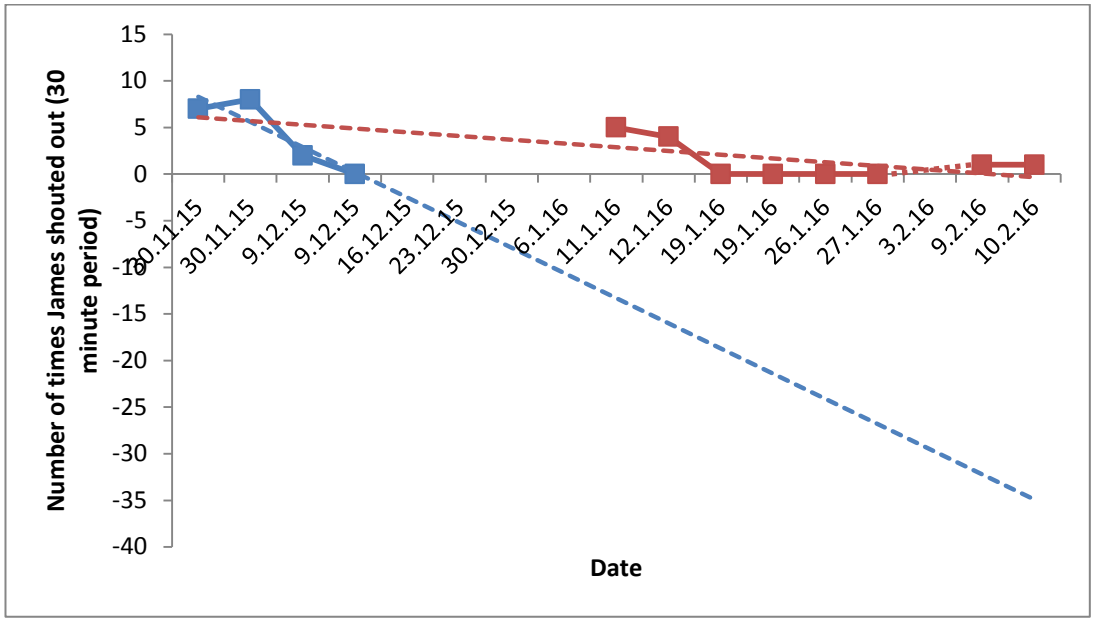

Figure 24: A line graph to show the frequency that James shouted out in a 30 minute period across baseline and intervention phases with trend lines

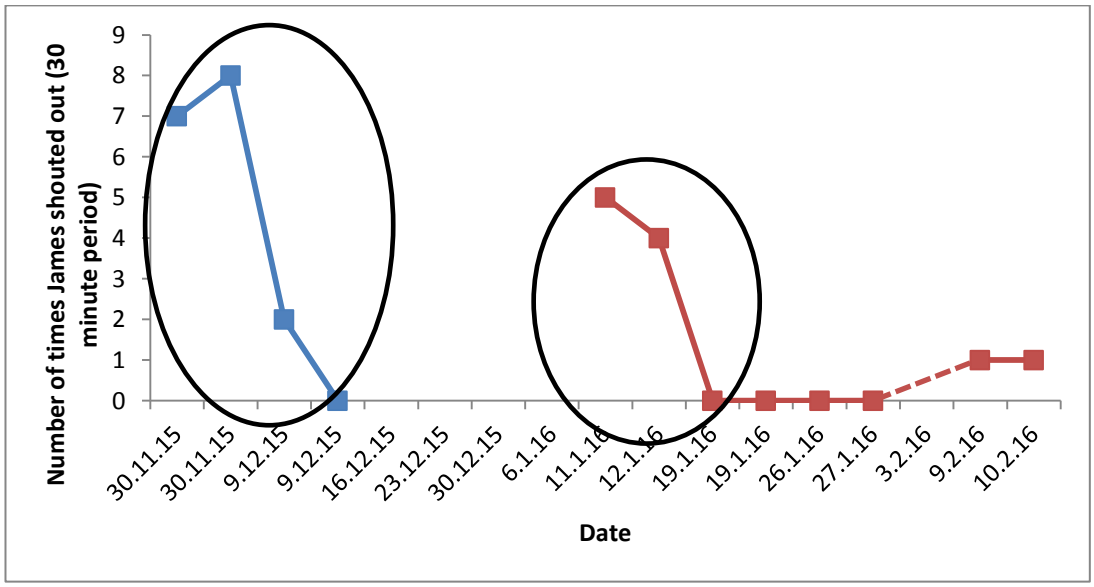

Figure 25: A line graph to show the immediacy of effect for the target behaviour shouting out

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 4.25 Phase B mean: 1.37
Variability	Baseline range: 8 -Standard Deviation: 3.86 Phase B range: 5 -Standard Deviation: 1.99
Trend	Baseline: -2.7 Phase B: -0.40 Both baseline and phase B show a downward trend. The downward slope is steepest in baseline.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B. The first 2 data points in Phase B are higher than the last 2 data points in the Baseline Phase.
Overlap	100% of the data points in phase B overlap with baseline.

Table 25: Visual analysis summary for the target behaviour 'shouting out'

Visual Analysis Summary: Shouting Out

The visual analysis suggests that there was an observable decrease in the frequency that James shouted out in the intervention period, this is reflected in the decrease in mean levels across the baseline and intervention phase (from 4.25 to 1.37). The decelerating trend line in the baseline phase however suggests that a decrease in the number of times James shouted out may have occurred without the implementation of the MI intervention. There is a higher level of variability in the data in the Baseline Phase in comparison to Phase B. There was no evidence of an immediate effect. All of the data points in Phase B overlap with the data points in Baseline indicating no evidence of an intervention effect.

Visual Analysis for the target 'Attention Seeking Behaviour'

For James, the target 'Attention Seeking Behaviour' incorporated any time James purposefully made a noise to gain attention, this included singing/humming to himself and making 'distracting noises'.

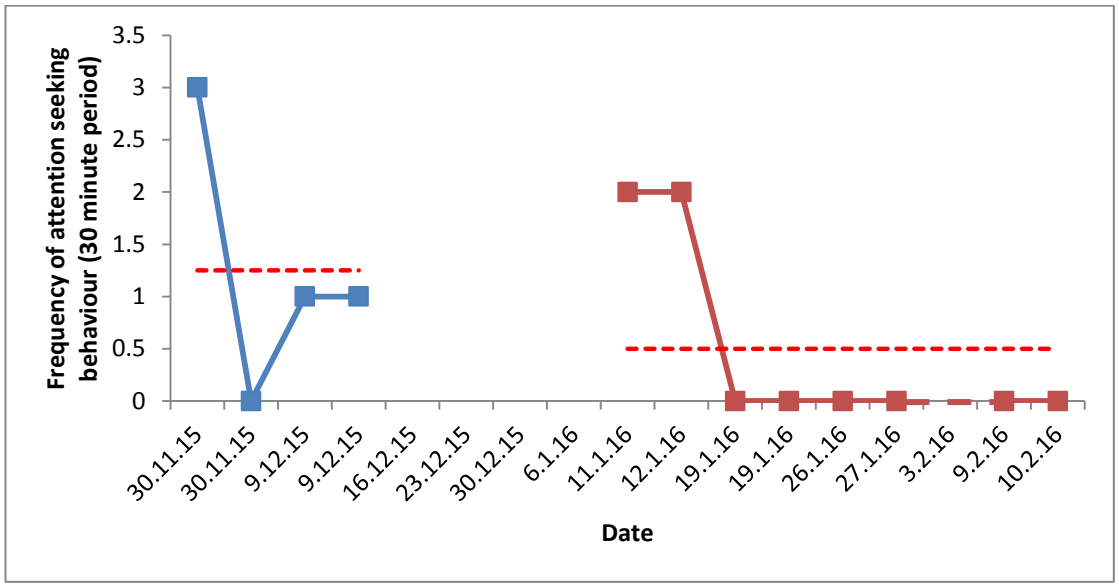

Figure 26: A line graph to show the frequency of James displaying 'attention seeking behaviour' in a 30 minute period across baseline and intervention phases with mean lines

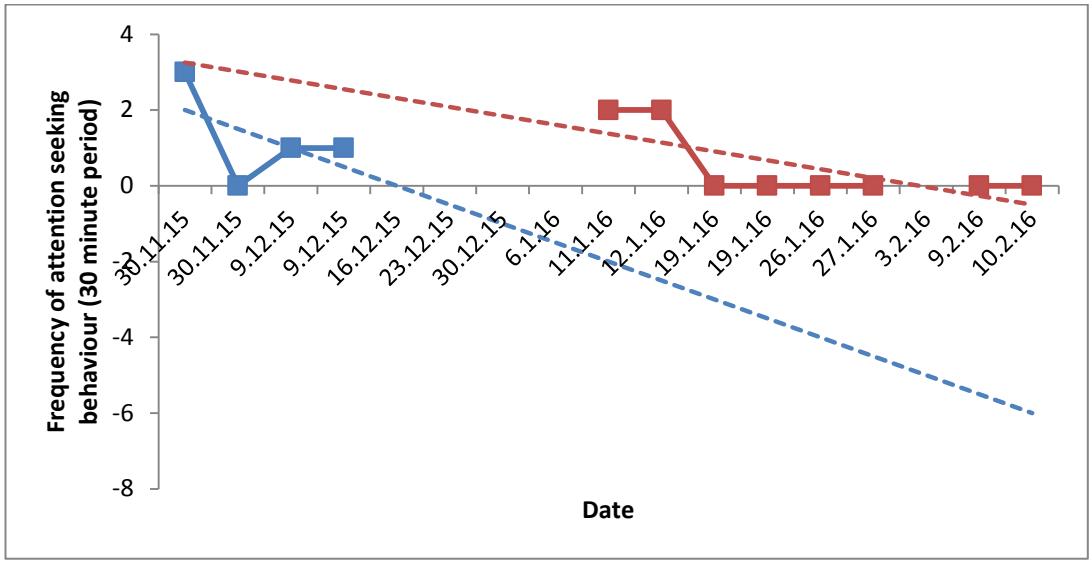

Figure 27: A line graph to show the frequency of James displaying 'attention seeking behaviour' in a 30 minute period across baseline and intervention phases with trend lines

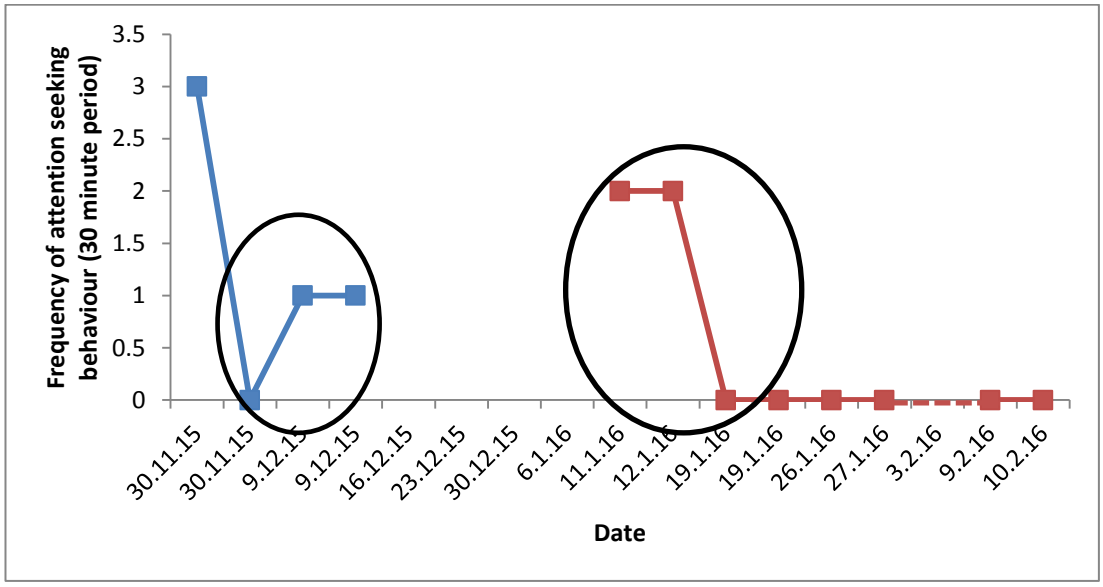

Figure 28: A line graph to show the immediacy effect for the target behaviour 'attention seeking'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 1.25 Phase B mean: 0.5
Variability	Baseline range: 3 -Standard Deviation: 3.86 Phase B range: 2 -Standard Deviation: 1.99
Trend	Baseline: -0.5 Phase B: -0.23 Both baseline and phase B show a downward trend.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B. The first 2 data points in Phase B are higher than the last 2 data points in the baseline phase.
Overlap	100% of the data points in phase B overlap with baseline.

Table 26: Visual analysis for the target 'attention seeking behaviour'

Visual Analysis Summary: Attention Seeking Behaviour

The visual analysis suggests that there was an observable decrease in the frequency that James displayed 'attention seeking' behaviour in the intervention period, highlighted by a decrease in the mean level from 1.25 in the Baseline Phase to 0.5 in Phase B. However, the trend line in the baseline phase suggests that this decrease may have occurred without the introduction of the MI intervention. The variability of the data is similar in both phases, with slightly more variance being observed in the Baseline. There was no clear evidence of an immediate effect. All of the data points in Phase B overlap with the data in Baseline suggesting no evidence of an intervention effect. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis: Distracting Peers

For James, the target behaviour 'Distracting Peers' incorporated behaviours such as talking to other children during independent learning time, throwing stationary at other children, poking other children on the carpet and kicking the backs of other children's chairs.

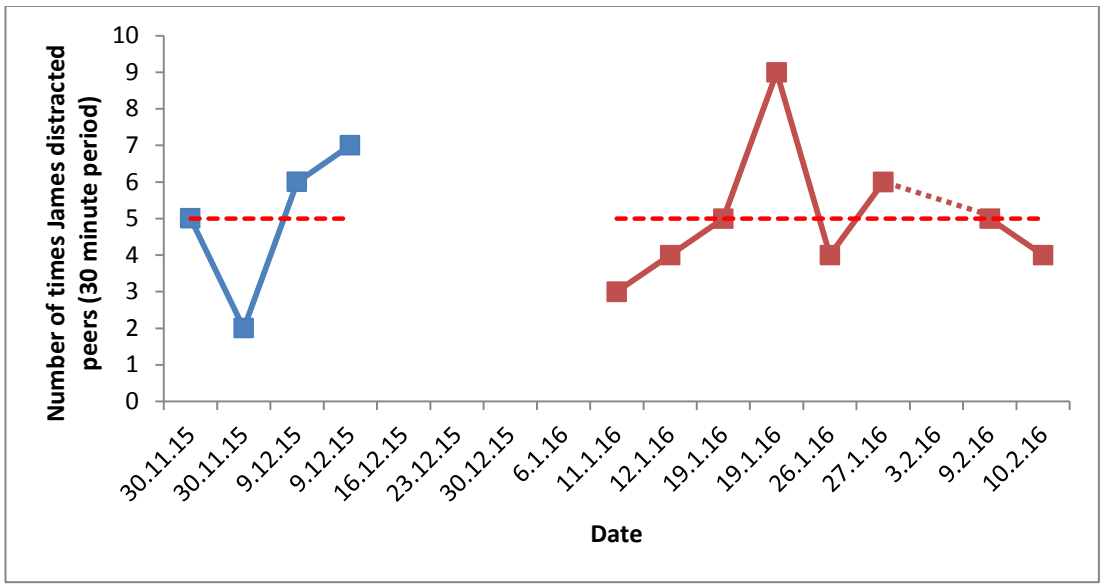

Figure 29: A line graph to show the frequency that James 'distracted peers' in a 30 minute period across baseline and intervention phases with mean lines

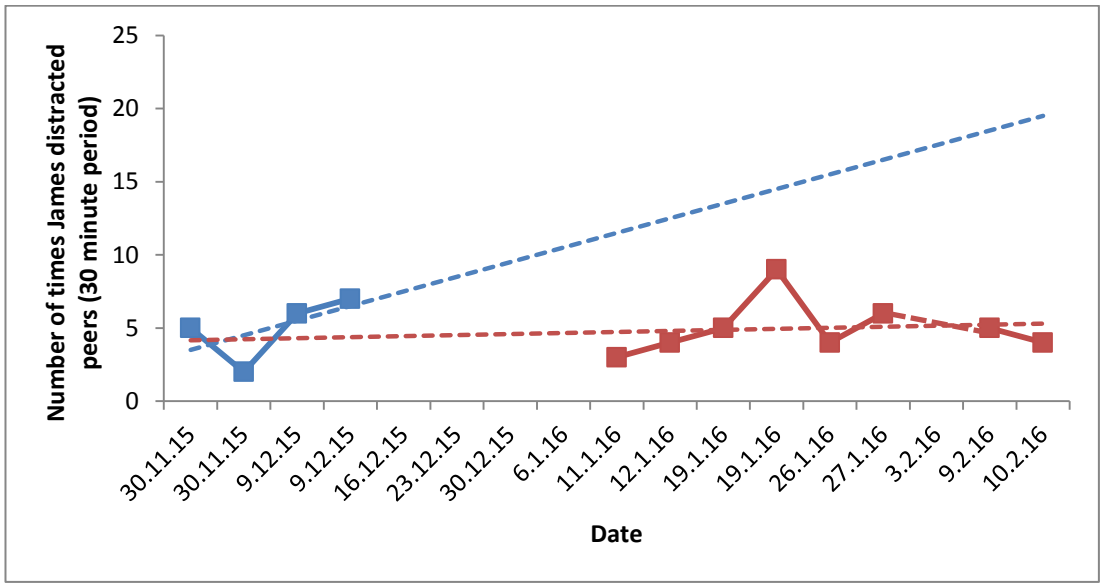

Figure 30: A line graph to show the frequency that James 'distracted peers' in a 30 minute period across baseline and intervention phases with trend lines

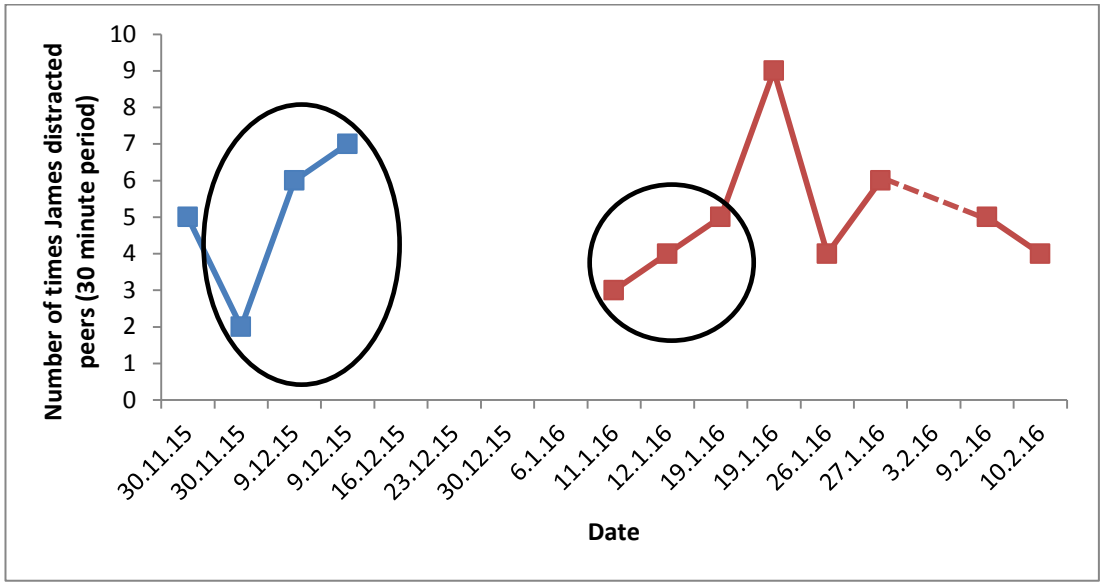

Figure 31: A line graph to show the immediacy of effect for the target behaviour 'distracting peers'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 5 Phase B mean: 5
Variability	Baseline range: 5 - Standard Deviation: 2.16 Phase B range: 6 - Standard Deviation: 1.85
Trend	Baseline: 2.5 Phase B: 0.07 Baseline shows an upward accelerated trend. In phase B the trend line is stable.
Immediacy of effect	There is some evidence of an immediate effect between baseline and phase B illustrated by the first 3 data points in Phase B being lower than the last 2 data points in the Baseline Phase.
Overlap	87.5% of the data points in phase B overlap with baseline.

Table 27: Visual analysis summary for James for the target behaviour 'distracting peers'

Visual Analysis Summary: Distracting Peers

The visual analysis suggests there were no observable decreases in the frequency that James distracted others in the intervention period, reflected by the stable mean level across the baseline and intervention phases. The accelerated trend line in the baseline does however suggest that the frequency of James distracting others may have increased if the MI intervention was not implemented. The variability of the data is similar in both phases, with slightly more variance being observed in the Phase B. There was no clear evidence of an immediate effect. There was some evidence of an immediate effect. A large proportion (87.5%) of the data in Phase B overlaps with the Baseline data, suggesting that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour 'Being Rude/Ignoring Instructions'

For James, the target 'being rude/ignoring instructions' incorporated any time during the 30 minute observation period that James was rude towards a member of staff or directly ignored or refused to follow an instruction being given to him by school staff.

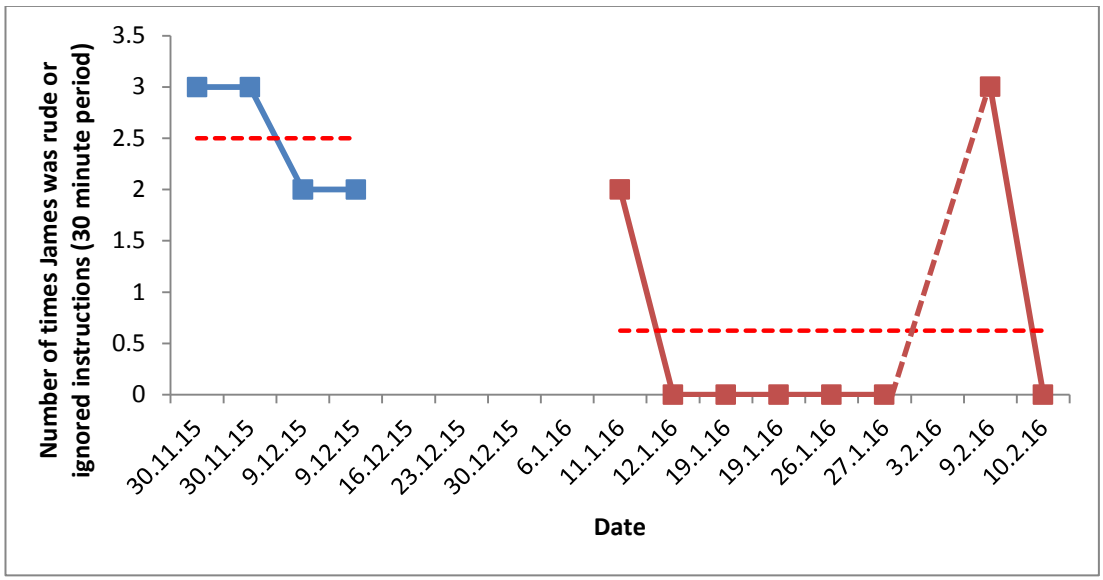

Figure 32: A line graph to show the frequency that James was rude or ignored instructions in a 30 minute period across baseline and intervention phases with mean lines

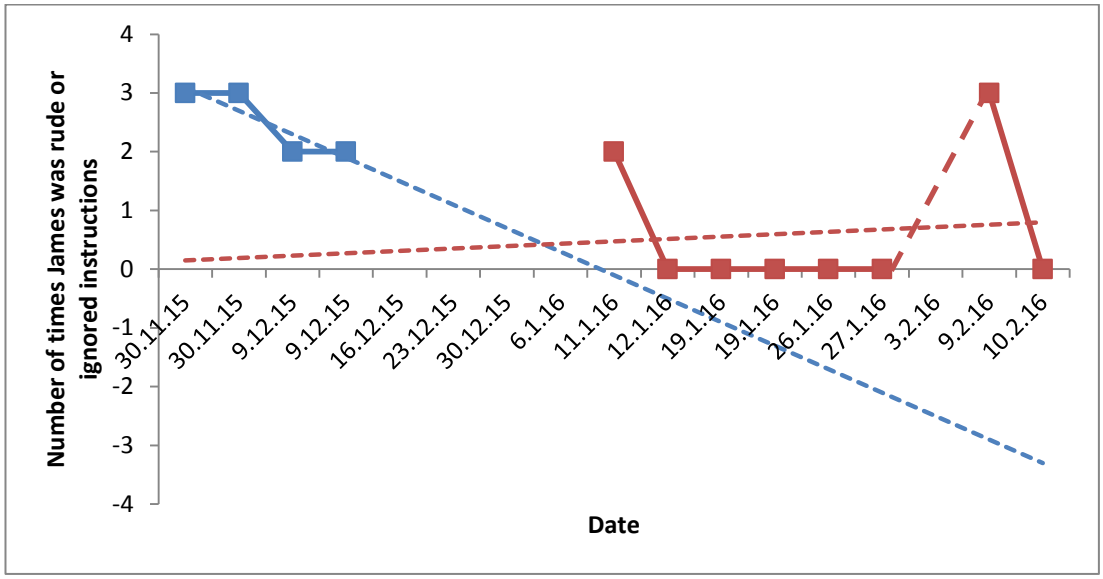

Figure 33: A line graph to show the frequency that James was rude or ignored instructions in a 30 minute period across baseline and intervention phases with trend lines

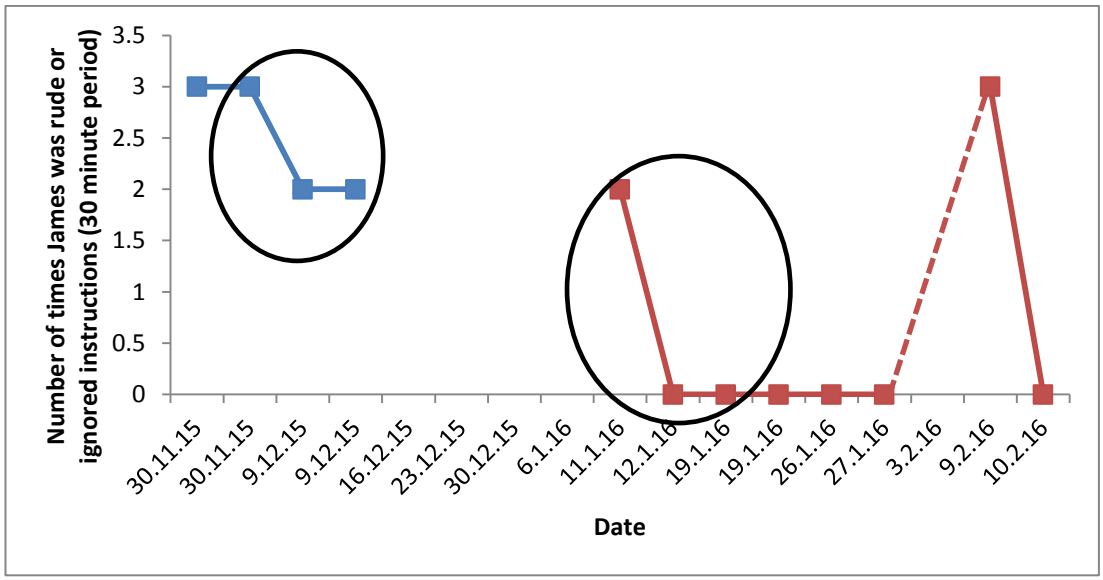

Figure 34: A line graph to show the immediacy of effect for the target behaviour 'being rude/ignoring instructions'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 2.5 Phase B mean: 0.2
Variability	Baseline range: 1 -Standard Deviation: 0.57 Phase B range: 3 -Standard Deviation: 1.88
Trend	Baseline: -0.4 Phase B: 0.04 Baseline shows a decelerated trend. Phase B shows a slight accelerated trend.
Immediacy of effect	There is some evidence of an immediate effect between baseline and phase B as the 2nd and 3rd data point in Phase B are lower than the last 3 data points in the Baseline Phase.
Overlap	75% of the data points in phase B overlap with baseline.

Table 28: Visual analysis summary for the target behaviour 'being rude/ignoring instructions'

Visual Analysis Summary: Being Rude/Ignoring Instructions

The visual analysis suggests that there was an observable decrease in the number of times James was rude or ignored instructions in the intervention period, highlighted by a reduction in the mean level from 2.5 in the Baseline Phase to 0.2 in Phase B. However, given the decelerating trend line in the baseline phase it is possible that the improvement in James' behaviour may have occurred without the introduction of the intervention. A greater variability in the data is observed in Phase B. There was some evidence of an immediate effect after the introduction of the intervention. A high number (75%) of the data points in Phase B overlap with Baseline, providing evidence that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Inter Rater Agreement

Joint observations for James were completed three times (once during baseline and twice in phase B) over the research period to enhance the observational measures reliability. Cohen's kappa coefficient (Cohen, 1960) was calculated for the observations as a way of providing inter rater agreement. The level of agreement was defined using Landis and Koch's (1977) levels of agreement.

Over the two joint observations the Cohen's kappa ranged from 0.85 to 1.0 (absolute agreement), with a mean of 0.95. According to Landis and Koch's (1977) categories this mean indicates an almost perfect level of agreement (Landis and Koch, 1977).

Strength and Difficulties Questionnaire (SDQ, Goodman, 1997)

Goodman's (1997) behavioural screening questionnaire was completed by James' class teacher pre and post the MI intervention. The questionnaire contained 25 items which the class teacher was asked to rate as 'not true', 'somewhat true' or 'certainly true'. The scores for each of the scales are presented in the table below.

Time information collected	Total difficulties score	Emotional symptoms score	Conduct problem score	Hyperactivity scale	Peer problem scale	Pro-social scale
PRE	17	4	4	7	1	9
POST	10	3	2	4	1	7
Difference	-7	-1	-2	-3	=	-2

Table 29: Teacher ratings of James' behaviour on the SDQ (Goodman, 1997) completed before and after the MI intervention

Summary of findings from table 22

All scores provided by James' teacher on the scales emotional symptoms, conduct problems, hyperactivity and peer problems, after the MI intervention are lower, or the same, as those provided before the MI intervention. The biggest difference is observed in the hyperactivity scale. The score on the pro social scale is lower after the MI intervention was implemented. James' total difficulties score decreased at the end of the intervention period from 17 to 10.

James' Response to the Intervention

James was generally happy to come out of class and work with the researcher but his level of engagement varied significantly depending on his mood. James appeared to be very disengaged with school and was resigned to constantly being in trouble (James had been on report since the beginning of the autumn term and would frequently comment that there was "nothing he could do about it"). James was very articulate and engaged with some of the more complex activities well (e.g. considering the good things and less good things about his behaviour). The researcher observed that James found the activities that required him to look to the future difficult. He needed a lot of support and encouragement to complete these.

4.2.4 Adam

Adam was aged 9 years 5 months at the start of the research period. He attends a mainstream primary school. Adam had had no previous Educational Psychology involvement but was included on the school's SEN register due to his challenging behaviour. Adam was prioritised for the MI intervention due to his reported frequent and disruptive classroom behaviour. It was reported that Adam would display 'silly' behaviours in class such as shouting rude words and throwing equipment (e.g. pencils, rubbers) across the room. School staff reported that Adam actively seeks to disrupt peers by talking to them, pulling faces or kicking the back of their chairs. Adam's behaviour deteriorates significantly when being taught by an unfamiliar adult. Adam is said to be of average ability, working at a level 4 in Literacy at the beginning of the research period. Adam was not receiving any additional support or intervention to help to manage his behaviour at the time of the research.

Adam's target behaviours were:

- **Attention seeking behaviour** (any time Adam purposefully made a noise to gain attention, included humming, singing and laughing loudly)
- **Distracting peers** (whispering to other children, throwing school equipment, prodding other children on the carpet and talking to other children during independent learning time)
- **Immature behaviour** (pulling faces and talking in 'silly' voices)
- **Leaving his seat** (any time Adam left his seat without permission)

Visual Analysis

Visual analysis for Adam's behaviour will now be presented, beginning with a summary of his overall disruptive behaviour, consisting of a composite of the target behaviours that were observed. Graphs and visual analysis will then be presented for the target behaviours of attention seeking behaviour, distracting peers, immature behaviour and leaving his seat. A summary of inter- rater agreement will then be presented followed by the pre and post data collected from Goodman's (2001) SDQ.

Overall 'Disruptive Behaviour'

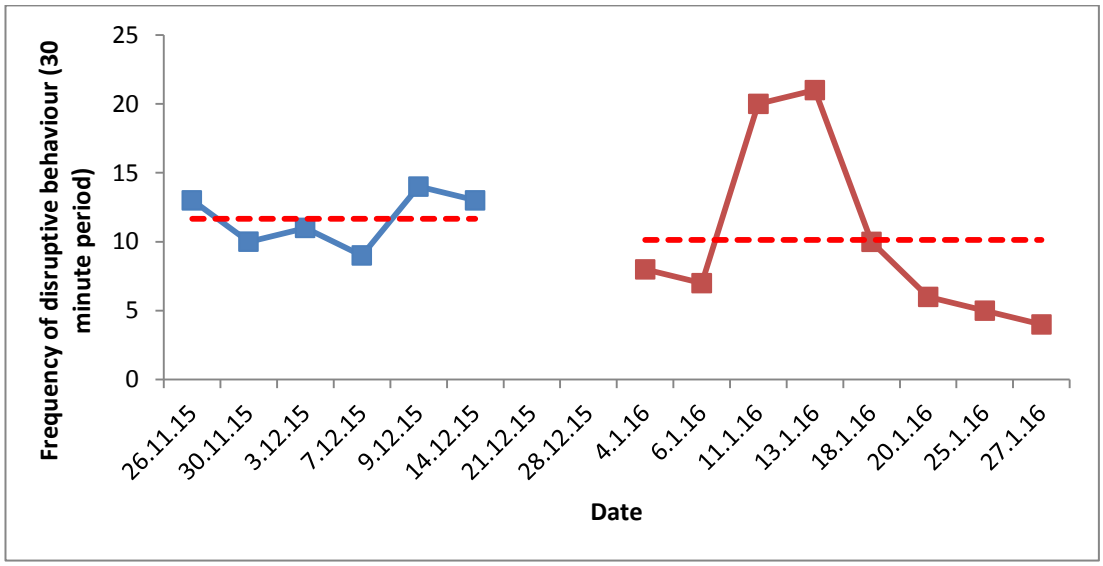

Figure 35: A line graph to show Adam's overall 'disruptive behaviour' over a 30 minute period across baseline and intervention phases with mean lines

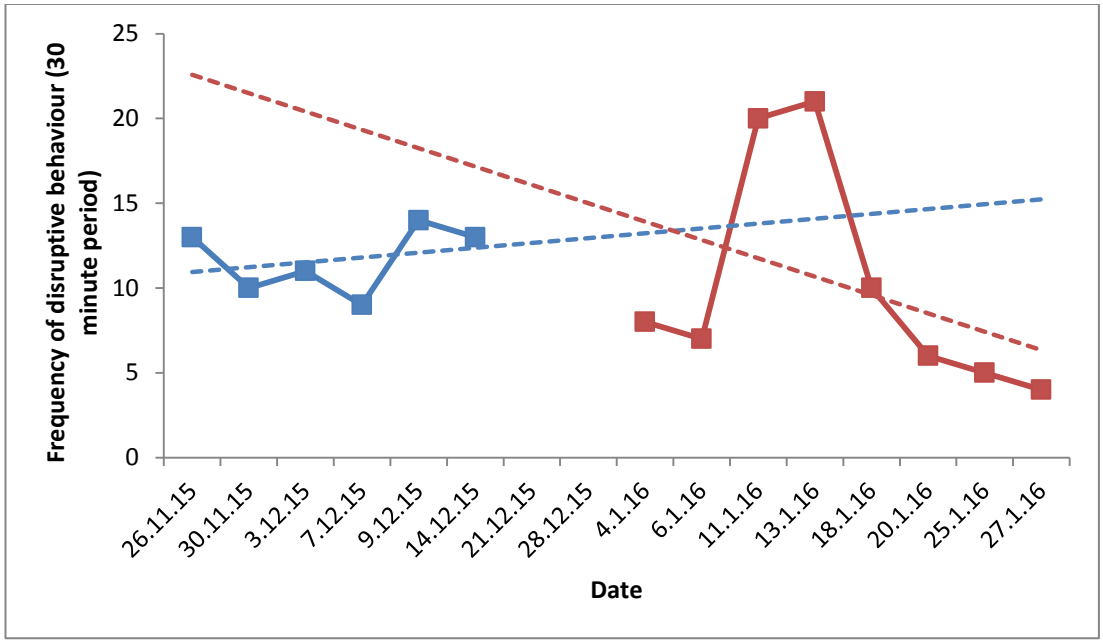

Figure 36: A line graph to show Adam's overall 'disruptive behaviour' over a 30 minute period across baseline and intervention phases with trend lines

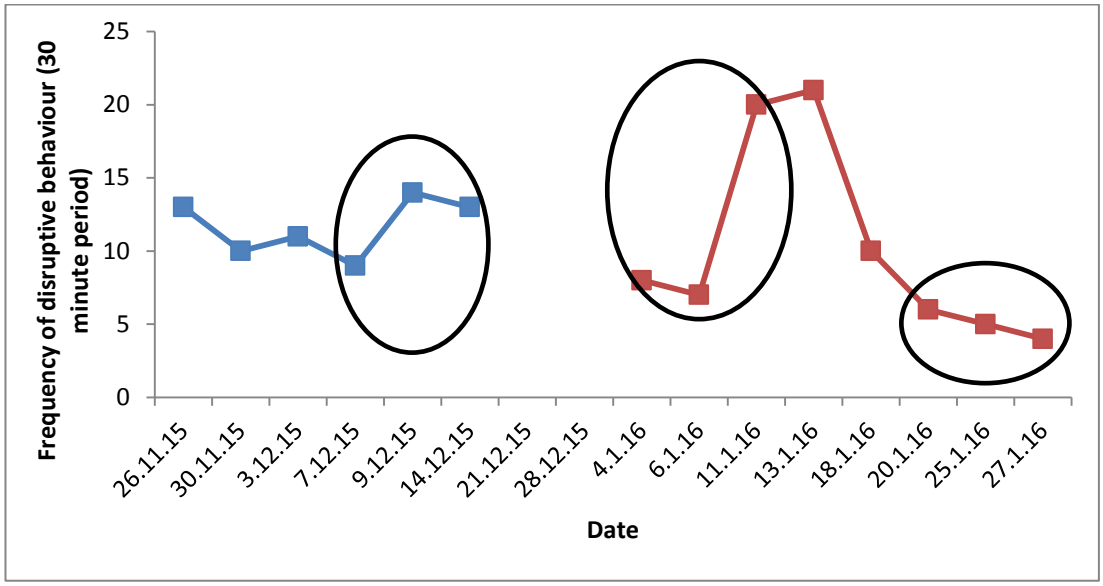

Figure 37: A line graph to show the immediacy of effect for Adam's overall 'disruptive behaviour'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 11.6 Phase B mean: 10.1
Variability	Baseline range: 5 -Standard Deviation: 1.96 Phase B range: 17 -Standard Deviation:6.64
Trend	Baseline: 0.29 Phase B: -1.08 Baseline shows an accelerated trend line. Phase B shows a decelerated trend line.
Immediacy of effect	There is some evidence of an immediate effect between baseline and phase B as the first 2 data points in Phase B are lower than the last 3 data points in the Baseline Phase.
Overlap	62.5% of the data points in phase B overlap with baseline.

Table 30: Visual analysis summary for Adam's overall 'disruptive behaviour'

Visual Analysis Summary: Overall Disruptive Behaviour

The visual analysis suggests that there was a slight observable improvement in Adam's overall disruptive behaviour in the intervention period, supported by a small decrease in the mean level in the intervention period (from 11.6 to 10.1). There was an accelerating trend in the baseline phase which suggests that Adam's behaviour may not have improved if the MI intervention was not implemented. A large variability in the data in observed in Phase B. There was some evidence of an immediate effect. 62.5% of the data in Phase B overlapped with Baseline suggesting an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour 'Attention Seeking Behaviour'

For Adam, the target 'Attention Seeking Behaviour' incorporated any time Adam purposefully made a noise to gain attention, including humming, singing and laughing loudly.

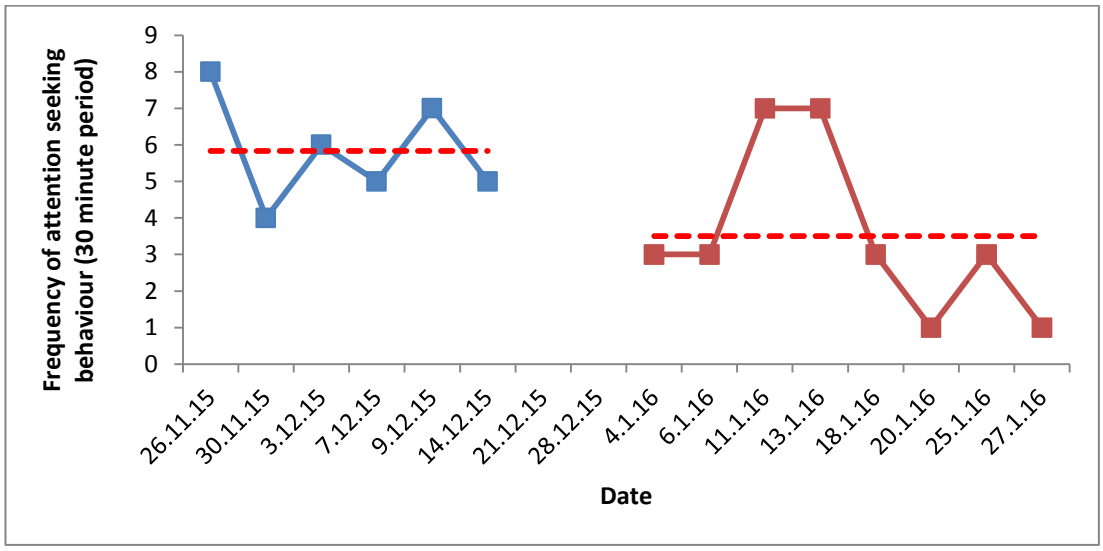

Figure 38: A line graph to show the frequency of Adam's 'attention seeking' behaviour across baseline and intervention phases with mean lines

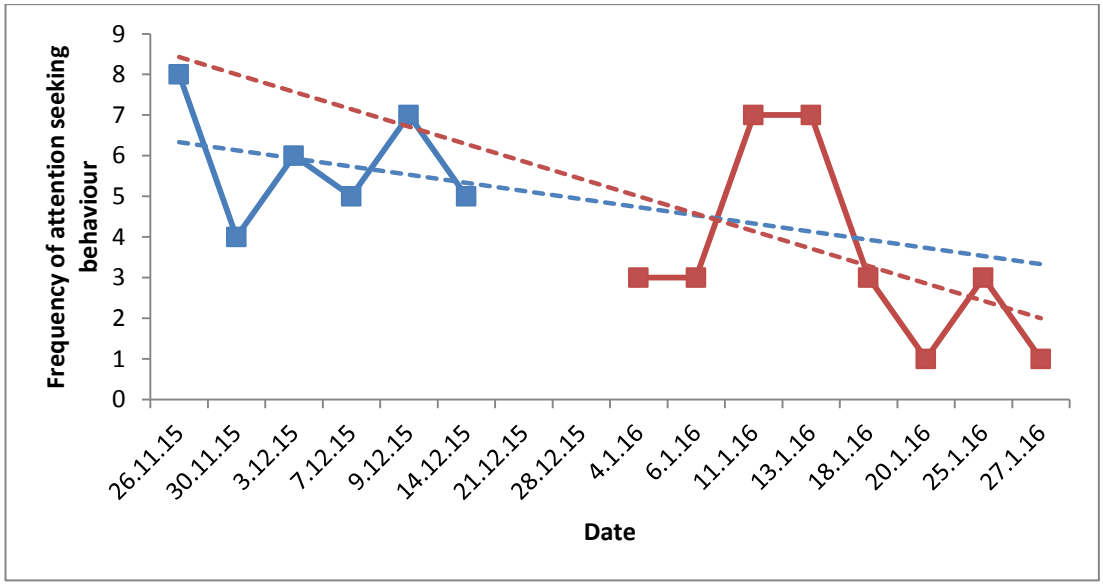

Figure 39: A line graph to show the frequency of Adam's 'attention seeking' behaviour across baseline and intervention phases with trend lines

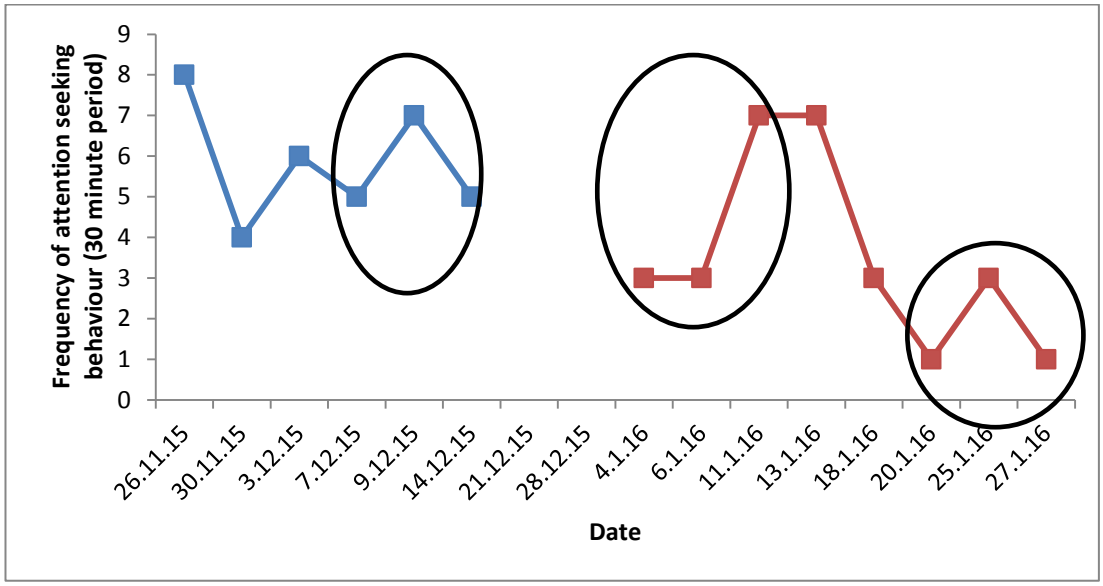

Figure 40: A line graph to show immediacy of effect on Adam's 'attention seeking' behaviour

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 5.83 Phase B mean: 3.5
Variability	Baseline range: 3 Standard Deviation: -1.47 Phase B range: 6 Standard Deviation: -2.32
Trend	Baseline: -0.2 Phase B: -0.42 Both baseline and phase B show a decelerated trend. This trend is steepest in phase B.
Immediacy of effect	There is some evidence of an immediate effect between baseline and phase B as the first 2 data points in Phase B are lower than the last 3 data points in the Baseline Phase.
Overlap	75% of the data points in phase B overlap with baseline.

Table 31: Visual analysis summary for Adam's 'attention seeking' behaviour

Visual Analysis Summary: Attention Seeking Behaviour

The visual analysis suggests that there was an observable decrease in Adam's attention seeking behaviour in the intervention period, highlighted by a reduction in the mean level from 5.83 in the Baseline Phase to 3.5 in Phase B. However, given the decelerating trend line in the baseline phase it is possible that the improvement in behaviour may have occurred without the introduction of the MI intervention. A higher level of variability is observed in Phase B. There was some evidence of an immediate effect after the introduction of the intervention. A high proportion (75%) of the data in Phase B overlapped with the data points in Baseline suggesting that an intervention effect was unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour 'Distracting Peers'

For Adam, the target 'distracting peers' incorporated behaviours such as whispering to other children, throwing school equipment, prodding other children on the carpet and talking to other children during independent learning time.

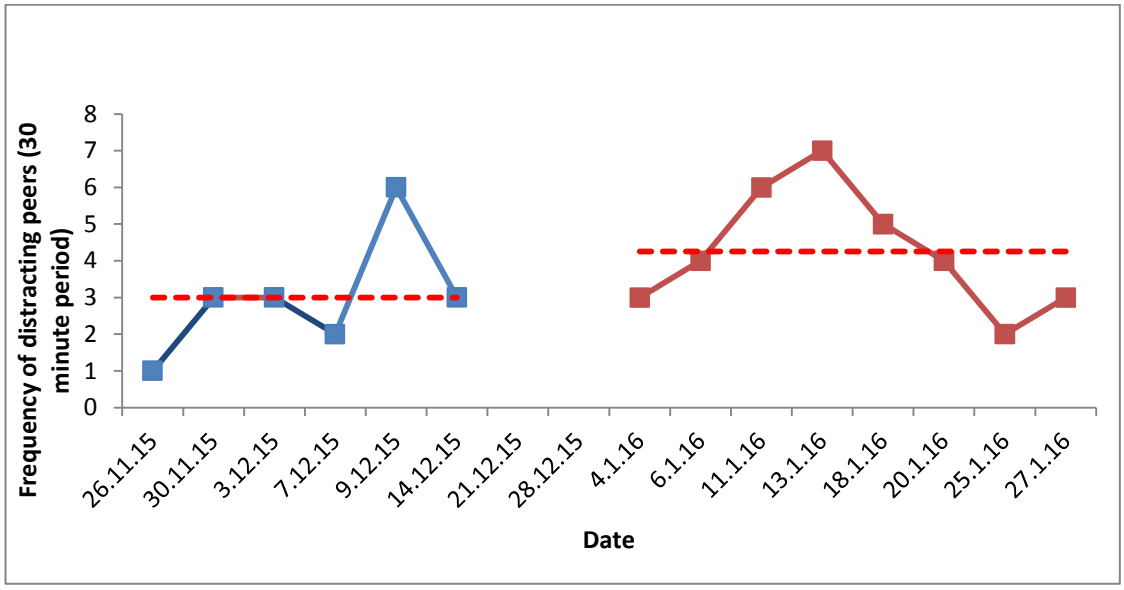

Figure 41: A line graph to show the frequency that Adam 'distracted peers' in a 30 minute period across baseline and intervention phases with mean lines

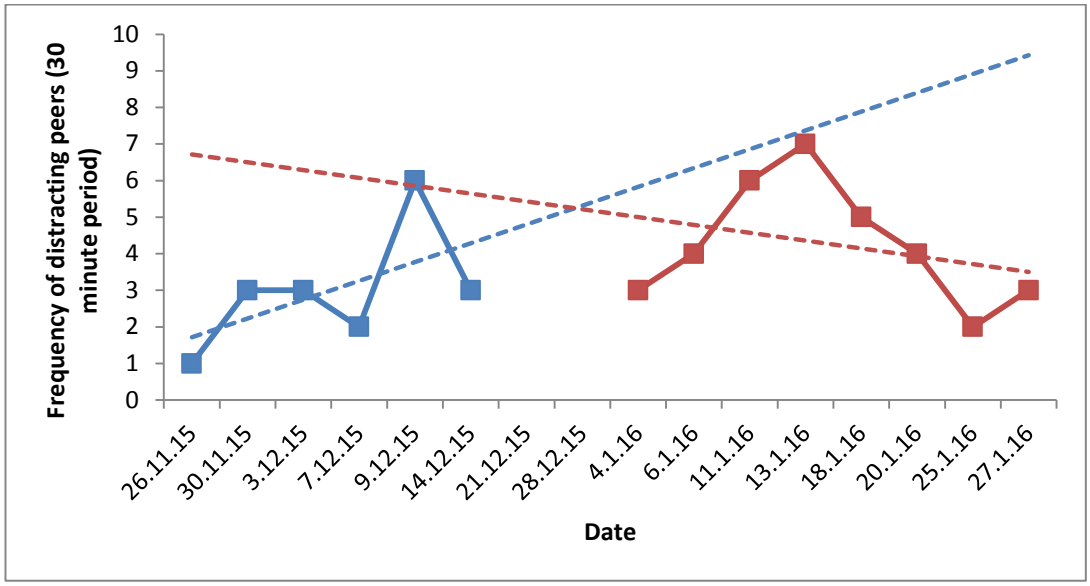

Figure 42: A line graph to show the frequency that Adam 'distracted peers' in a 30 minute period across baseline and intervention phases with trend lines

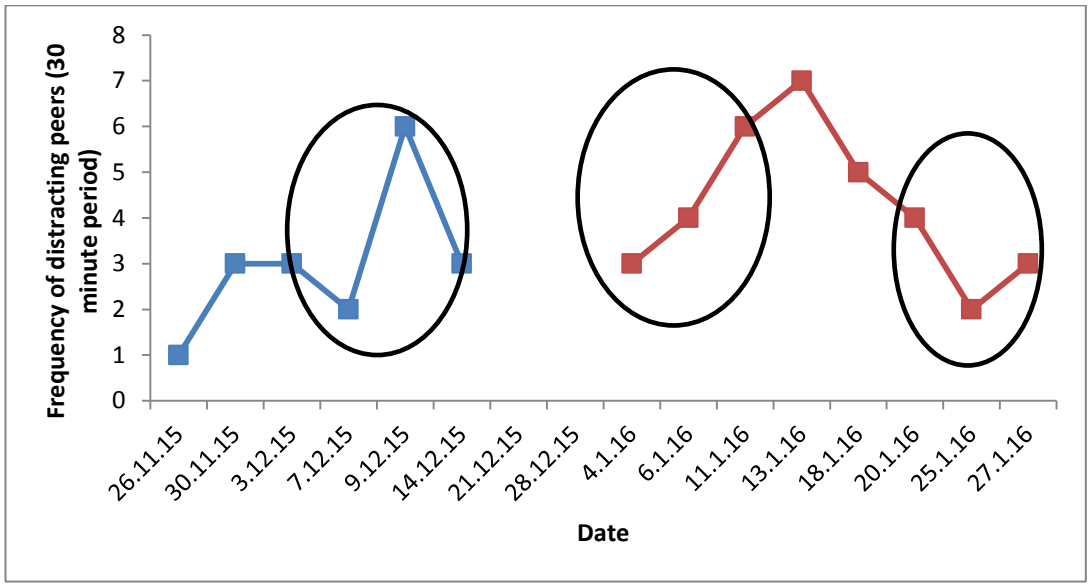

Figure 43: A line graph showing the immediacy of effect for the target behaviour 'distracting peers'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 3 Phase B mean: 4.25
Variability	Baseline range: 5 -Standard Deviation: 1.67 Phase B range: 4 -Standard Deviation: 1.66
Trend	Baseline: 0.51 Phase B: -0.21 Baseline shows an accelerated trend. Phase B shows a decelerated trend.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B as the first 3 data points in Phase B are not lower than the last 3 data points in the Baseline Phase.
Overlap	87.5% of the data points in phase B overlap with baseline.

Table 32: Visual analysis summary for the target behaviour 'distracting peers'

Visual Analysis Summary: Distracting Peers

The visual analysis suggests that there was no decrease in the frequency of Adam distracting peers in the intervention period, highlighted by an increase in the mean level in Phase B. The accelerating trend line in the baseline phase suggests that the frequency of this disruptive behaviour may not have improved without the introduction of the MI intervention. The variation in data is similar across both phases with slightly more variance being observed in the Baseline Phase. There was no evidence of an immediate effect. A high proportion (87.5%) of the data points in Phase B overlapped with the data in Baseline highlighting that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the target 'Immature Behaviour'

For Adam, the target 'Immature Behaviour' incorporated behaviours such as pulling faces and talking in 'silly' voices.

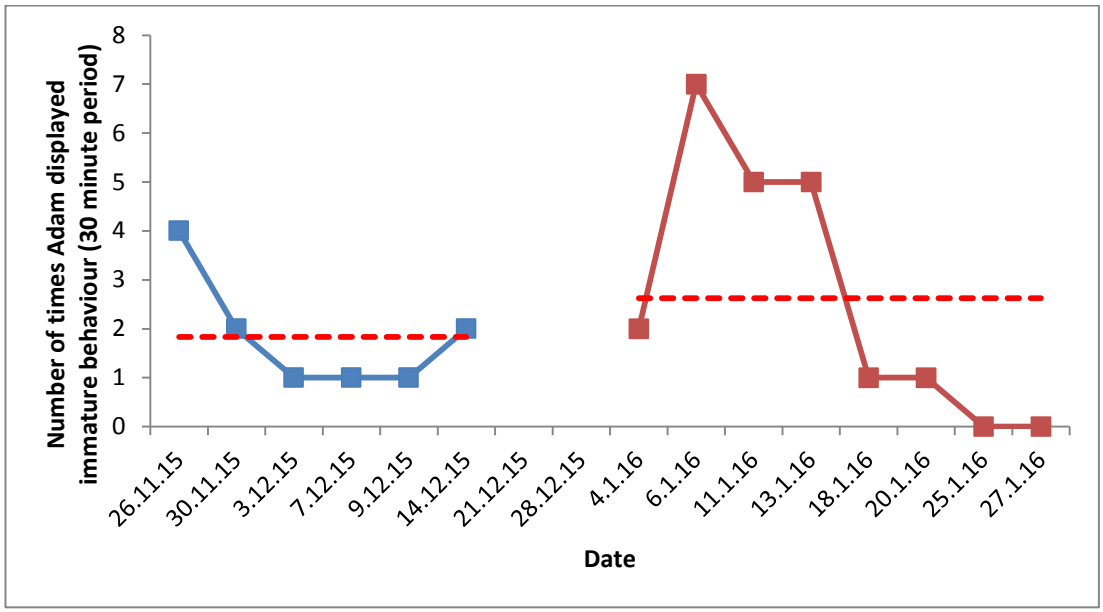

Figure 44: A line graph to show the frequency that Adam displayed 'immature behaviour' in a 30 minute period across intervention and baseline phases with mean lines

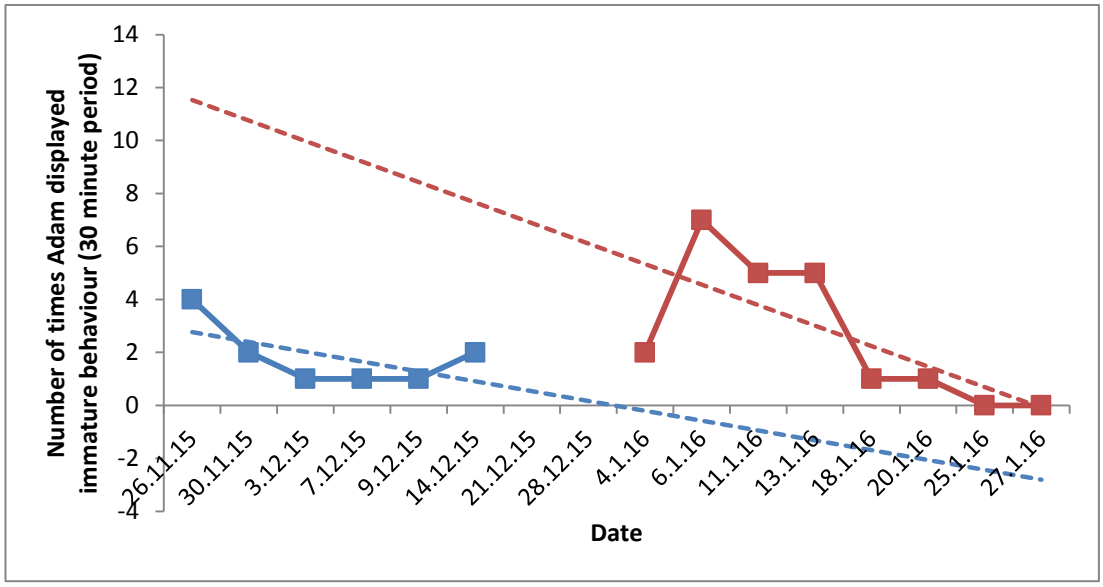

Figure 45: A line graph to show the number of times Adam displayed 'immature behaviour' in a 30 minute period across intervention and baseline phases with trend lines

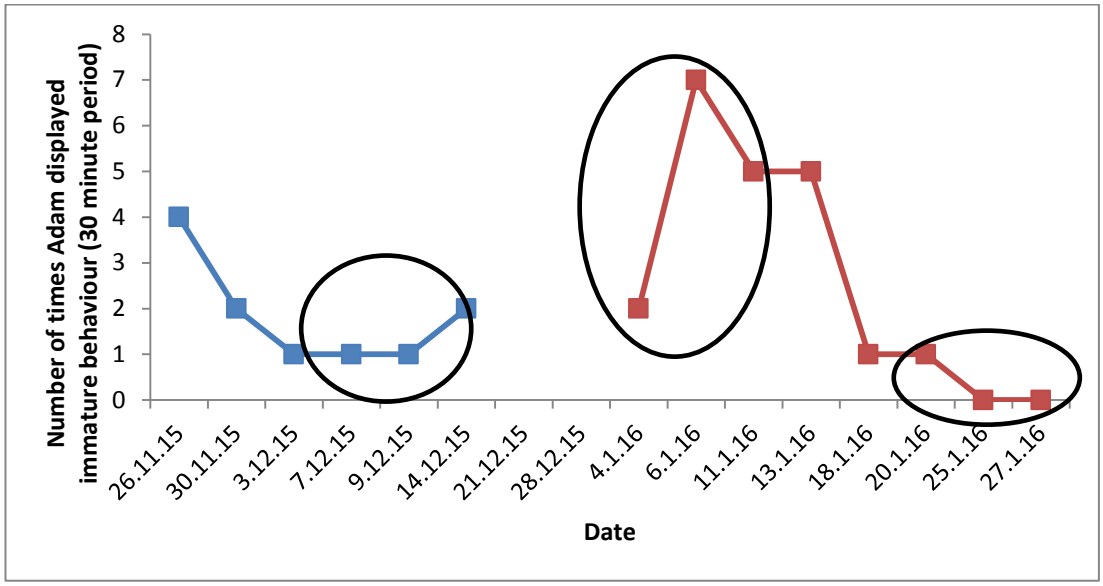

Figure 46: A line graph showing the immediacy of effect for the target 'immature behaviour'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 1.83 Phase B mean: 2.63
Variability	Baseline range: 3 -Standard Deviation: 1.66 Phase B range: 7 - Standard Deviation: 2.66
Trend	Baseline: -0.37 Phase B: -0.77 Both baseline and phase B show a decelerated trend. The slope is steepest in phase B.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B as the first 3 data points in Phase B are higher than the last 3 points in the Baseline Phase.
Overlap	37.5% of the data points in phase B overlap with baseline.

Table 33: Visual analysis summary for the target 'immature behaviour'

Visual Analysis Summary: 'Immature Behaviour'

The visual analysis suggests that there was no decrease in the frequency that Adam displayed immature behaviour in the intervention period. The mean level highlights a slight increase in the intervention phase, from 1.83 to 2.6. The decelerating trend line in the baseline phase suggests that the frequency of this disruptive behaviour may have reduced without the introduction of the MI intervention. More variation in the data is observed in Phase B. There was no evidence of an immediate effect after the intervention was implemented. Despite a relatively low percentage (37.5%) of data in Phase B overlapping with Baseline data, it should be highlighted that three of the data points in Phase B were actually higher than all of the data points in Baseline. This suggests that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour Leaving Seat

For Adam, this behaviour incorporated any occasion during the observation period that Adam left his seat without permission from school staff.

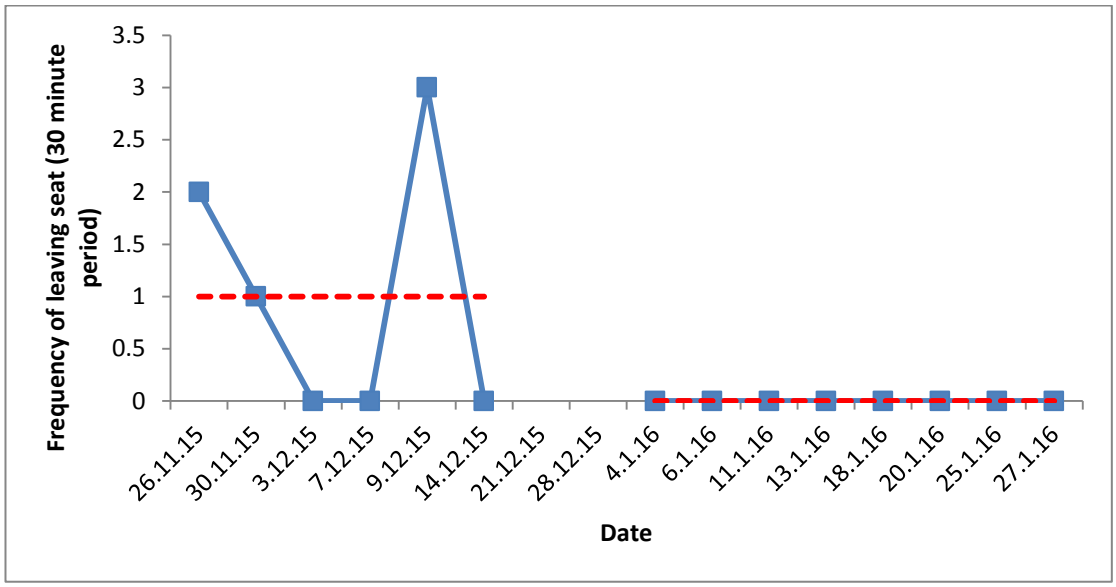

Figure 47: A line graph showing the frequency Adam left his seat in a 30 minute period across baseline and intervention phases with mean lines

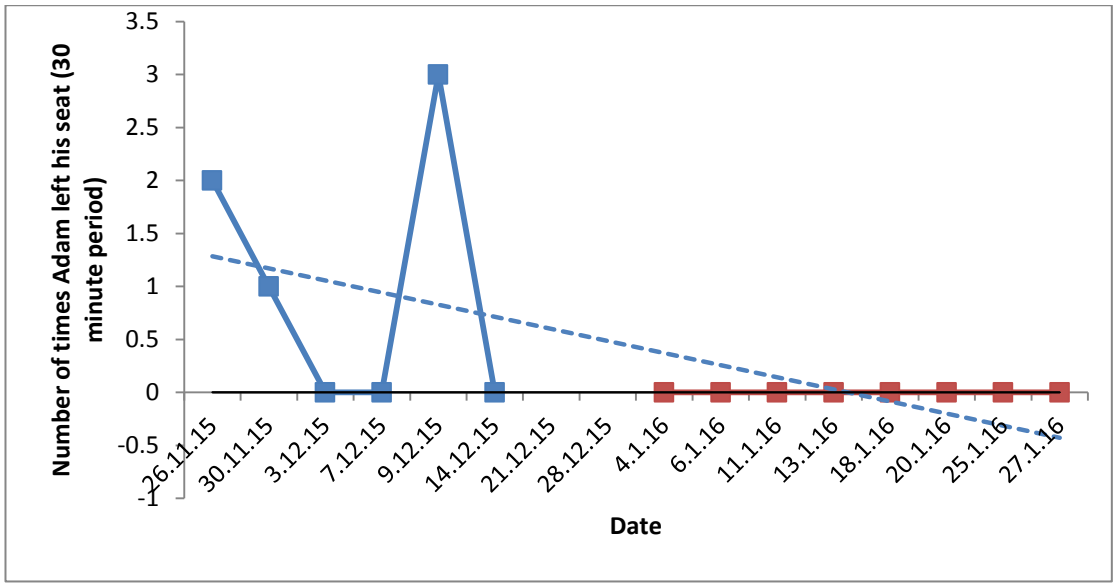

Figure 48: A line graph to show the frequency that Adam left his seat in a 30 minute period across baseline and intervention phases with trend lines

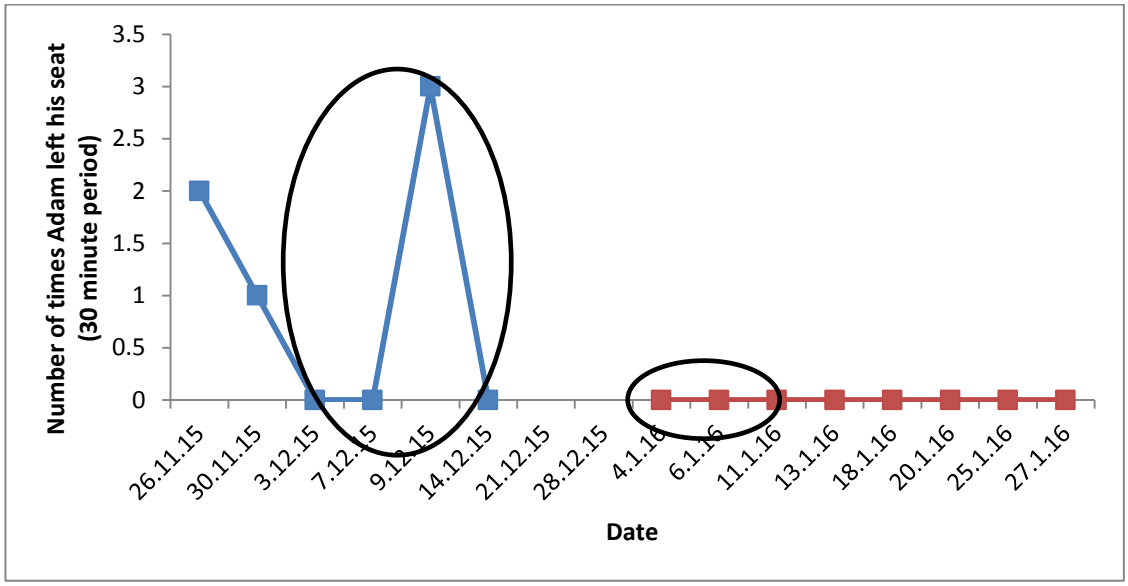

Figure 49: A line graph to show the immediacy of effect for the target behaviour leaving seat

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 1 Phase B mean: 0
Variability	Baseline range: 3 Standard Deviation: 1.26 Phase B range: - Standard Deviation: -
Trend	Baseline: -0.11 Phase B: 0 Baseline shows a decelerated trend. In phase B the trend line is stable.
Immediacy of effect	There is evidence of an immediate effect between baseline and phase B.
Overlap	100% of the data points in phase B overlap with baseline.

Table 34: Visual analysis summary for the target behaviour 'leaving seat'

Visual Analysis Summary: Leaving Seat

The visual analysis shows an absence of the behaviour 'leaving seat' in the intervention phase. However, given the decelerating trend line in the baseline phase it is possible that the improvement may have occurred without the introduction of the MI intervention. No data variance is observed in Phase B. There was some evidence of an immediate effect. All of the data in Phase B overlapped with Baseline data highlighting no evidence of an intervention effect. According to Kratochwill et al's (2010) guidance these findings suggest that an intervention effect may have occurred.

Inter Rater Agreement

Joint observations for Adam were completed three times (once during baseline and twice in phase B) over the research period to enhance the observational measures reliability. Cohen's kappa coefficient (Cohen, 1960) was calculated for the observations as a way of providing inter rater agreement. The level of agreement was defined using Landis and Koch's (1977) levels of agreement.

Over the three joint observations Cohen's kappa ranged from 0.78 to 1.0 (absolute agreement), with a mean of 0.92. According to Landis and Koch's (1977) categories this mean indicates an almost perfect level of agreement (Landis and Koch, 1977).

Strength and Difficulties Questionnaire (SDQ, Goodman, 1997)

Goodman's (1997) behavioural screening questionnaire was completed by Adam's class teacher pre and post the MI intervention. The questionnaire contained 25 items which the class teacher was asked to rate as 'not true', 'somewhat true' or 'certainly true'. The scores for each of the scales are presented in the table below.

Time information collected	Total difficulties score	Emotional symptoms score	Conduct problem score	Hyperactivity scale	Peer problem scale	Pro-social scale
PRE	21	2	7	10	2	6
POST	15	2	3	8	3	9
Difference	-6	=	-4	-2	=1	+3

Table 35: Teacher ratings of Adam's behaviour on the SDQ (Goodman, 1997) completed before and after the MI intervention

Summary of findings from table 28

All scores provided by Adam's teacher on the scales emotional symptoms, conduct problems, hyperactivity and peer problems, after the MI intervention are lower, or the same, as those provided before the MI intervention. The biggest difference is observed in the conduct scale, which reduced from 7 to 3. The score on the pro social scale is higher after the MI intervention was implemented. Adam's total difficulties score decreased at the end of the intervention period from 21 to 15.

Adam's Response to the Intervention

Adam presented as a friendly and chatty pupil who was always happy to come out of class and work with the researcher. Adam had a very short attention span and could be difficult to focus, session lengths were tailored to accommodate this. Adam enjoyed the practical activities and the researcher observed that he became less engaged when an activity required him to write. The researcher scribed for him on a number of occasions.

4.2.5 Tony

Tony was aged 9 years 3 months at the start of the research period. He attends a mainstream primary school. Tony had had no previous involvement with the Educational Psychology service. Tony was prioritised for the MI intervention due to his challenging behaviour. School staff reported that Tony would often attempt to distracts peers, constantly fidget and needs constant reminders to begin learning tasks. Tony was described by his class teacher to have good verbal skills but low ability in terms of writing, at the start of the research period Tony was working at a low level 4 in Literacy. Tony was not receiving any additional support to help manage his behaviour at the time of the research.

Tony's target behaviours:

- **Distracting peers** (talking to children during individual learning time, whispering to other children on the carpet, mimicking other children and laughing loudly to himself)
- **Fidgeting** (playing with school equipment, despite being told not to do so by school staff, tapping his hands on the desk and jumping up and down on his chair)

Visual Analysis

Visual analysis for Tony's behaviour will now be presented, beginning with a summary of his overall disruptive behaviour, consisting of a composite of the target behaviours that were observed. Graphs and visual analysis will then be presented for the target behaviours of distracting peers and fidgeting. A summary of inter rater agreement will then be presented followed by the pre and post data collected from Goodman's (2001) SDQ.

Overall 'Disruptive Behaviour'

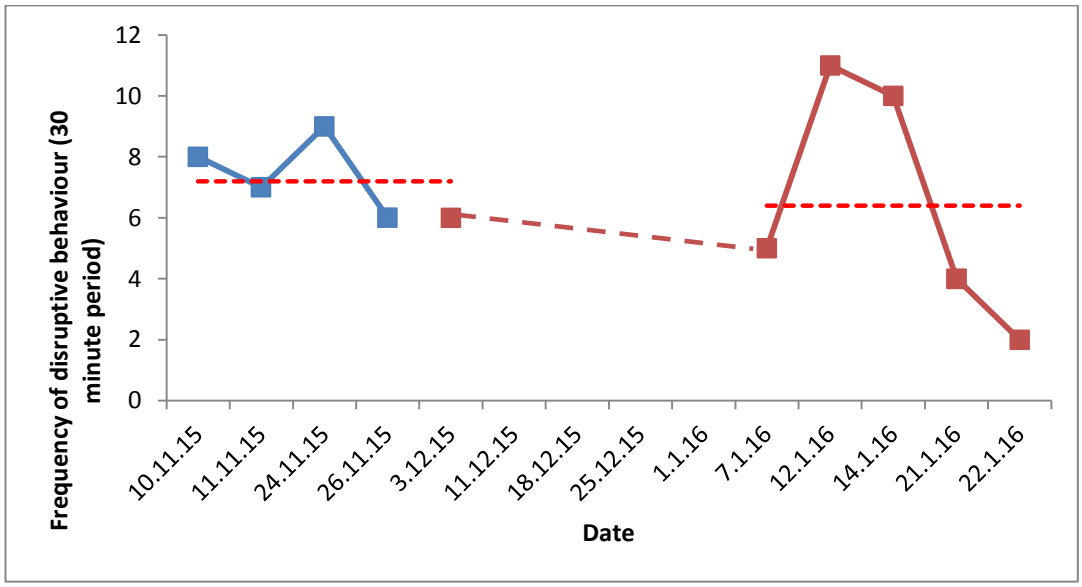

Figure 50: A line graph to show the frequency of Tony's overall disruptive behaviour across baseline and intervention phases with mean lines

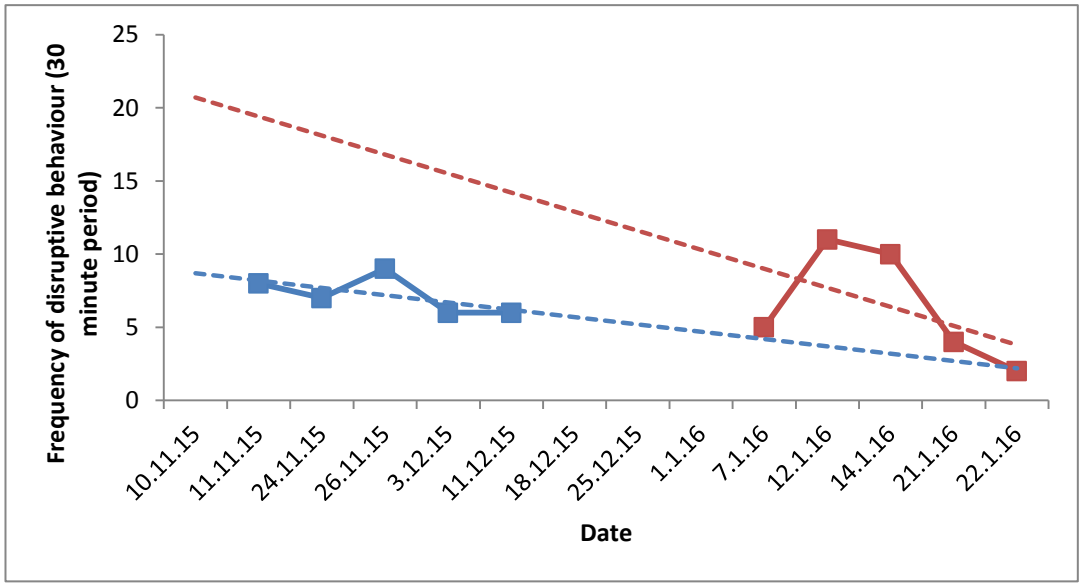

Figure 51: A line graph to show the frequency of Tony's overall 'disruptive behaviour' across baseline and intervention phases with trend lines

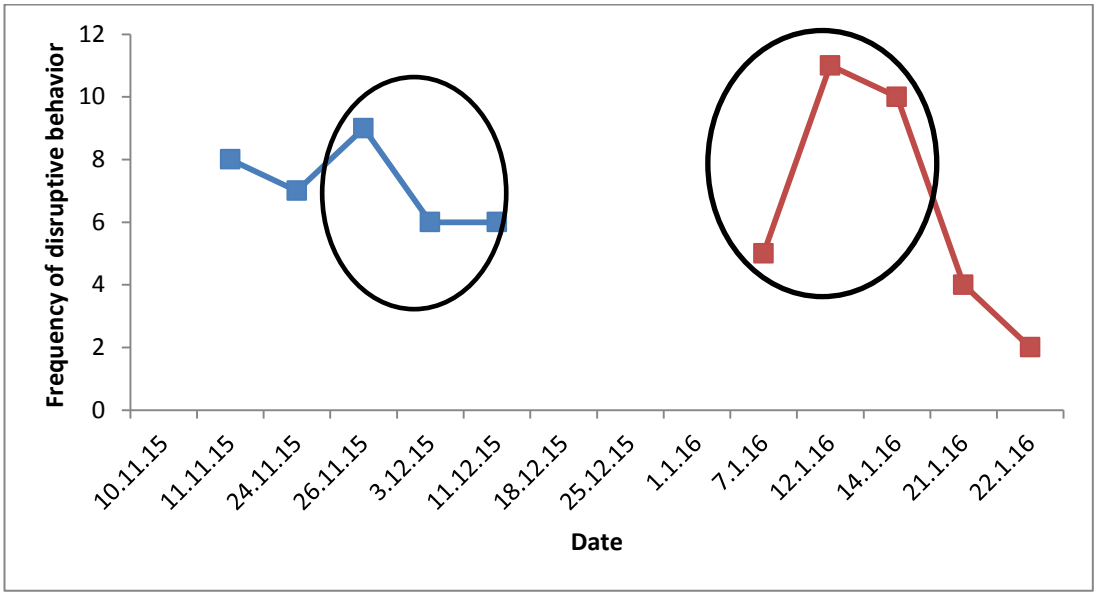

Figure 52: A line graph to show the immediacy of effect for Tony's overall 'disruptive behaviour'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 7.2 Phase B mean: 6.4
Variability	Baseline range: 3 -Standard Deviation: 1.30 Phase B range: 9 -Standard Deviation: 3.91
Trend	Baseline: -0.5 Phase B: -1.3 Both baseline and phase B show a decelerated trend. The slope is steepest in phase B.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B as data points 2 and 3 in Phase B are higher than the last 3 data points in the Baseline phase.
Overlap	33.3% of the data points in phase B overlap with baseline.

Table 36: Visual analysis summary: Overall 'disruptive behaviour'

Visual Analysis Summary: Overall Disruptive Behaviour

The visual analysis suggests there was a slight observable improvement in Tony's disruptive behaviour in the intervention period. This is supported by a decrease in the mean level in the intervention phase. However, given the decelerating trend line in the baseline phase it is possible that the improvement in Tony's behaviour may have occurred without the introduction of the MI intervention. Phase B has a larger amount of variance in the data in comparison to the Baseline Phase. There was no evidence of an immediate effect. 33.3% of the data points in Phase B overlapped with the data in Baseline, however two of the data points in Phase B were higher than the data in Baseline, suggesting that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour 'Distracting Peers'

For Tony, the target 'Distracting Peers' incorporated behaviours such as talking to children during individual learning time, whispering to other children on the carpet, mimicking other children and laughing loudly to himself.

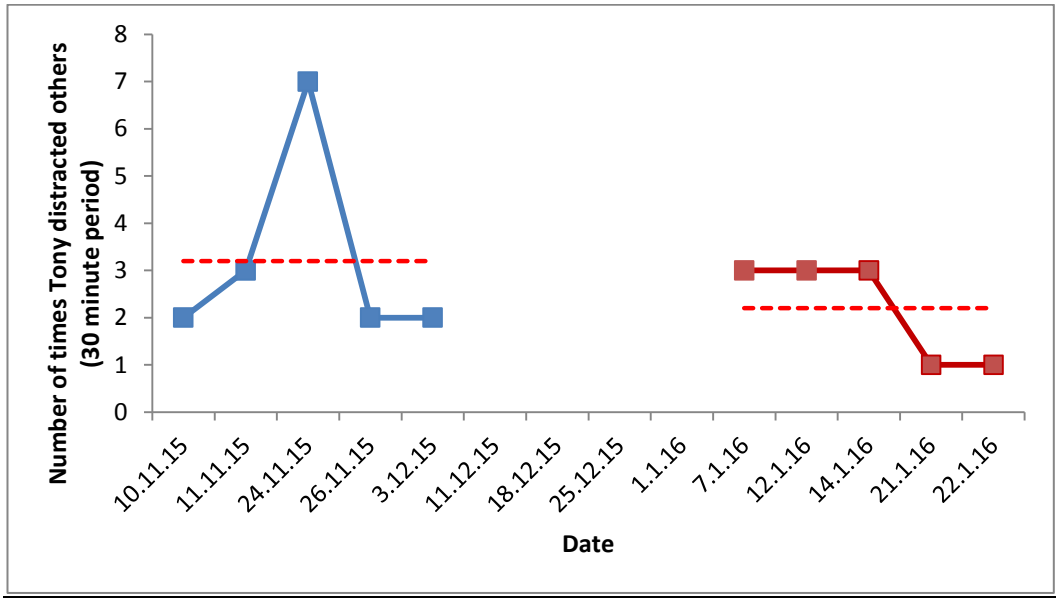

Figure 53: A line graph to show the frequency that Tony 'distracted peers' in a 30 minute period across baseline and intervention phases with mean lines

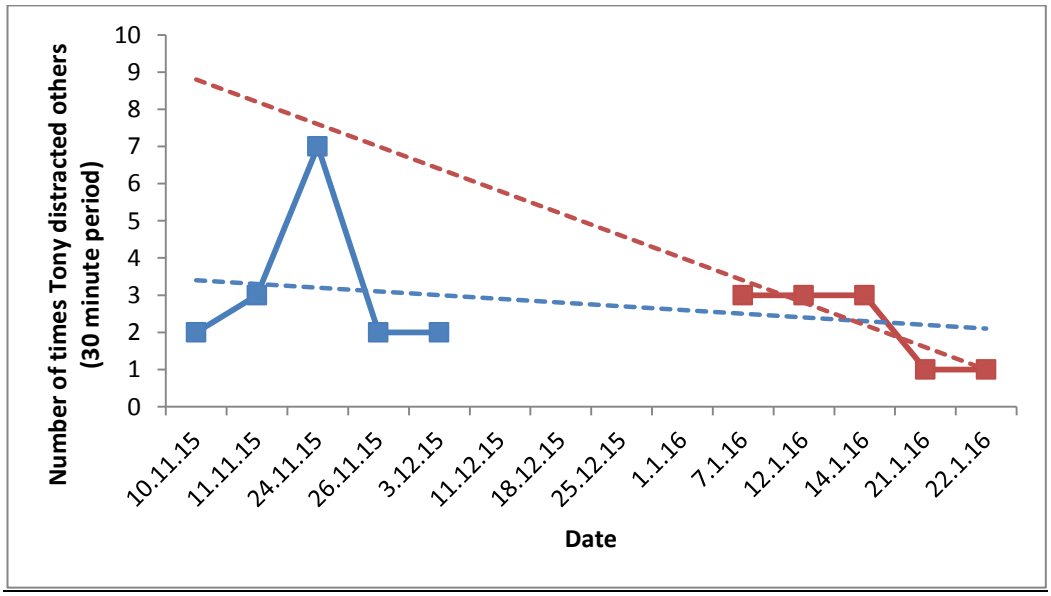

Figure 54: A line graph to show the frequency that Tony 'distracted peers' in a 30 minute period across baseline and intervention phases with trend lines

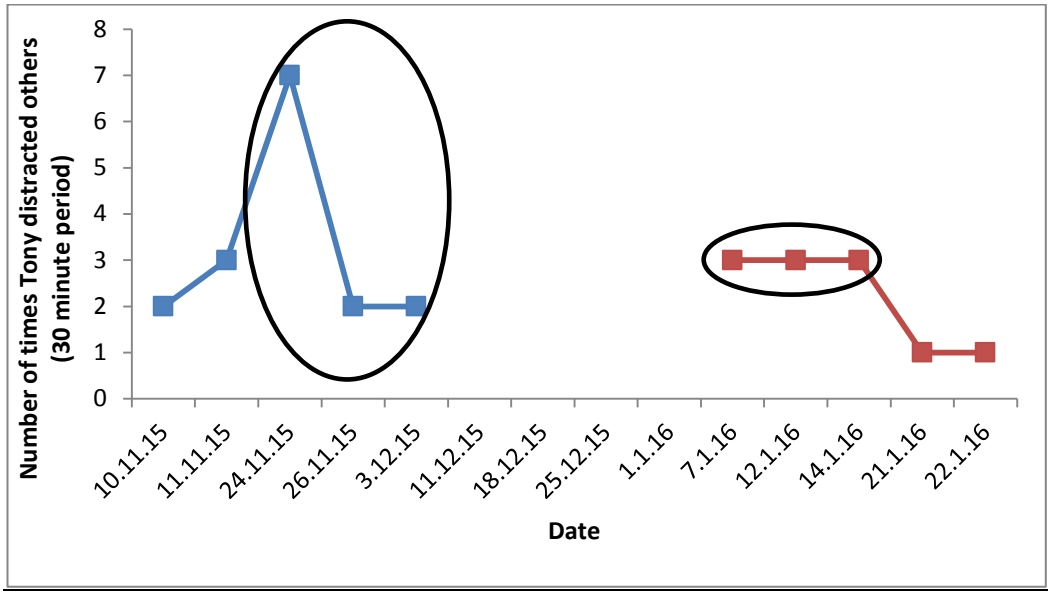

Figure 55: A line graph showing the immediacy of effect for the target behaviour 'distracting others'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 3.2 Phase B mean: 2.2
Variability	Baseline range: 5 -Standard Deviation: 2.16 Phase B range: 2 -Standard Deviation: 1.09
Trend	Baseline: -0.1 Phase B: -1.3 Both baseline and phase B show a decelerated trend. The slope is steepest in phase B.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B as the first 3 data points in Phase B are higher than the last 2 data points in the Baseline Phase.
Overlap	60% of the data points in phase B overlap with baseline.

Table 37: Visual analysis summary for the target behaviour 'distracting others'

Visual Analysis Summary: Distracting Peers

The visual analysis suggests there was an observable decrease in the number of times Tony distracted others in the intervention period, highlighted by a decrease in the mean level from 3.2 to 2.2. However, given the slight decelerating trend line in the baseline phase, it is possible that the decrease in this behaviour may have occurred without the introduction of the MI intervention. A larger amount of variance was observed in the Baseline Phase. There was no evidence of an immediate effect after the introduction was introduced. 60% of the data in Phase B overlapped with Baseline, indicating that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Visual Analysis for the Target Behaviour 'Fidgeting'

For Tony, 'Fidgeting' incorporated behaviours such as playing with equipment (such as rulers, pencils and rubbers) despite being told not to by school staff, tapping his hands on the desk and jumping up and down on his chair.

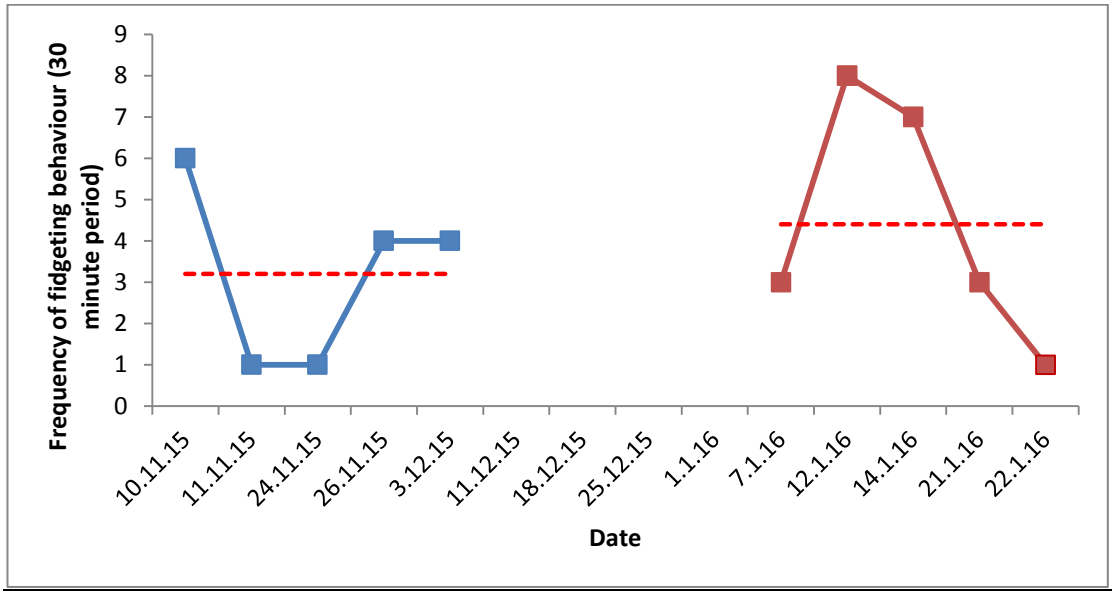

Figure 56: A line graph to show the frequency that Tony displayed 'fidgeting' behaviour in a 30 minute period across baseline and intervention phases with mean lines

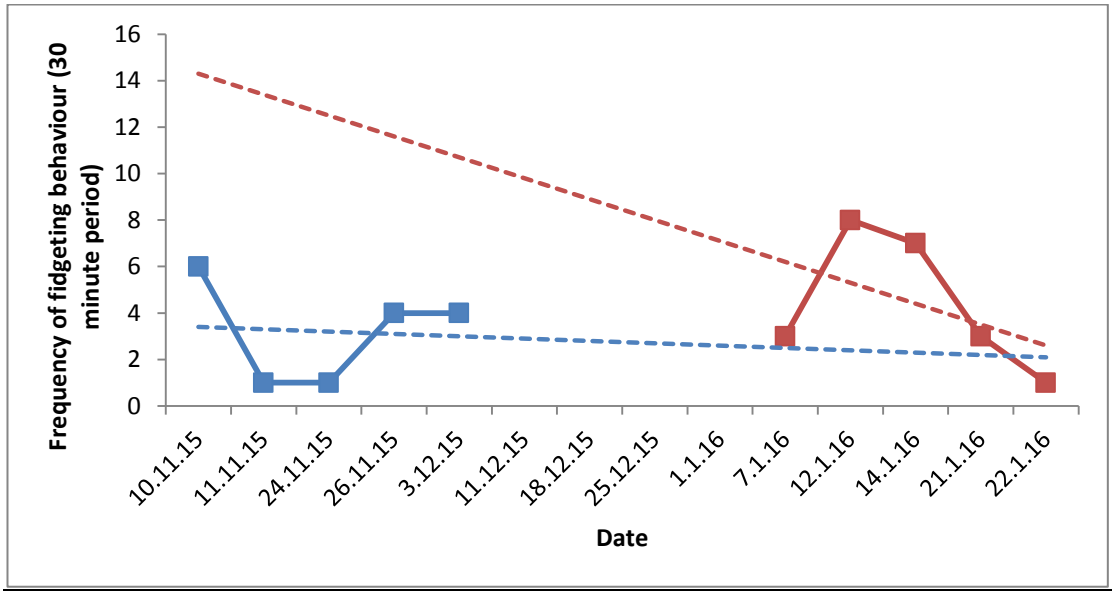

Figure 57: A line graph to show the frequency that Tony displayed 'fidgeting' behaviour in a 30 minute period across baseline and intervention phases with trend lines

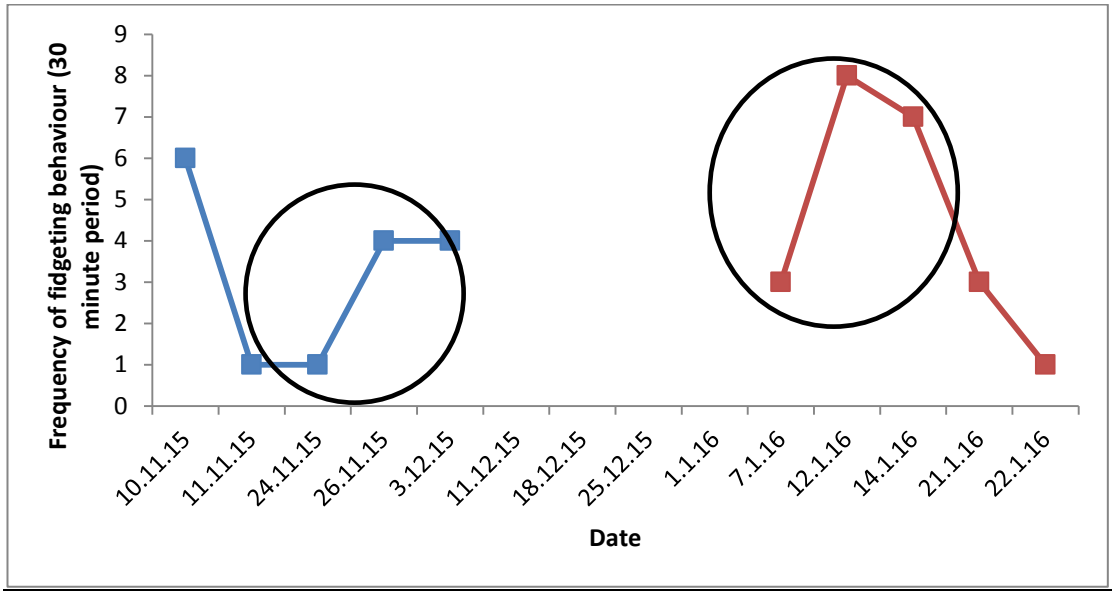

Figure 58: A line graph to show the immediacy of effect for the target 'fidgeting' behaviour

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 3.2 Phase B mean: 4.4
Variability	Baseline range: 5 - Standard Deviation: 2.16 Phase B range: 7 -Standard Deviation: 2.96
Trend	Baseline: -0.1 Phase B: -0.9 Both baseline and phase B show a decelerated trend. The slope is steepest in phase B.
Immediacy of effect	There is no evidence of an immediate effect between baseline and phase B as the 2nd and 3rd data points in Phase B are higher than the last 3 data points in the Baseline Phase.
Overlap	40% of the data points in phase B overlap with baseline.

Table 38: Visual analysis summary for the target 'fidgeting' behaviour

Visual Analysis Summary: Fidgeting

The visual analysis suggests there was no observable decrease in Tony's fidgeting behaviour in the intervention period. The mean levels show a slight increase in the intervention phase, from 3.2 to 4.4. There was no evidence of an immediate effect. There is slightly more variance in the data in Phase B. Despite the fact that only 40% of the data in Phase B overlapped with Baseline, two of the data points in Phase B were higher than the data in Baseline. Arguably this suggests that an intervention effect is unlikely to have occurred. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Inter Rater Agreement

Joint observations for Tony were completed twice (once during baseline and once in phase B) over the research period to enhance the observational measures reliability. Cohen's kappa coefficient (Cohen, 1960) was calculated for the observations as a way of providing inter rater agreement. The level of agreement was defined using Landis and Koch's (1977) levels of agreement.

Over the two joint observations the Cohen's Kappa ranged from 0.60 to 1.0 (absolute agreement), with a mean of 0.80. According to Landis and Koch's (1977) categories this mean indicates a substantial level of agreement (Landis and Koch, 1977).

Strength and Difficulties Questionnaire (SDQ, Goodman, 1997)

Goodman's (1997) behavioural screening questionnaire was completed by Tony's class teacher pre and post the MI intervention. The questionnaire contained 25 items which the class teacher was asked to rate as 'not true', 'somewhat true' or 'certainly true'. The scores for each of the scales are presented in the table below.

Time information collected	Total difficulties score	Emotional symptoms score	Conduct problem score	Hyperactivity scale	Peer problem scale	Pro-social scale
PRE	15	0	6	8	1	7
POST	5	0	1	3	1	9
Difference	-10	=	-5	-5	=	+2

Table 39: Teacher ratings of Tony's behaviour on the SDQ (Goodman, 1997) completed before and after the MI intervention

Summary of findings from table 31

All scores provided by Tony's teacher on the scales emotional symptoms, conduct problems, hyperactivity and peer problems after the MI intervention are lower, or the same, as those provided before the MI intervention. The biggest differences were observed on the conduct and hyperactivity scales, which decreased from 6 to 1 and 8 to 3 respectively. The score on the pro-social scale is higher at the end of the intervention period. Tony's total difficulties score decreased at the end of the intervention period from 15 to 5.

Tony's Response to the Intervention

Tony engaged well with the intervention and was always happy to come out of class and work with the researcher. Tony often displayed behaviours such as making noise and talking in strange voices. He also struggled to remain focused and on task, he would constantly fidget and would get distracted by things going on around him. When focused Tony engaged well with the activities, particularly if they had a practical format. Tony found it difficult to answer open ended questions and struggled with a number of the written tasks.

4.2.6 Chris

Chris was aged 9 years 7 months at the start of the research period. He attends a mainstream primary school. Chris had had no previous involvement with the Educational Psychology service. Chris was prioritised for the MI intervention due to his difficult behaviour in class. School staff reported that Chris would intentionally distract peers by talking to them or pulling faces at them, needs constant reminders to begin learning tasks and often fidgets with school equipment. At the start of the research period Chris was reported to be working at a level 4 in Literacy. Chris was not receiving any additional interventions or support to help manage his behaviour.

Target behaviours for Chris:

- **Fidgeting** (playing with school equipment and tapping his hands on the desk)
- **Distracting others** (speaking to other children during independent learning time, whispering to children on the carpet, pulling faces at other children in his class)

Visual Analysis

Visual analysis for Chris' behaviour will now be presented, beginning with a summary of his overall disruptive behaviour, consisting of a composite of the target behaviours that were observed. Graphs and visual analysis will then be presented for the target behaviours of fidgeting and distracting others. A summary of inter rater agreement will then be presented followed by the pre and post data collected from Goodman's (2001) SDQ.

Overall 'Disruptive Behaviour'

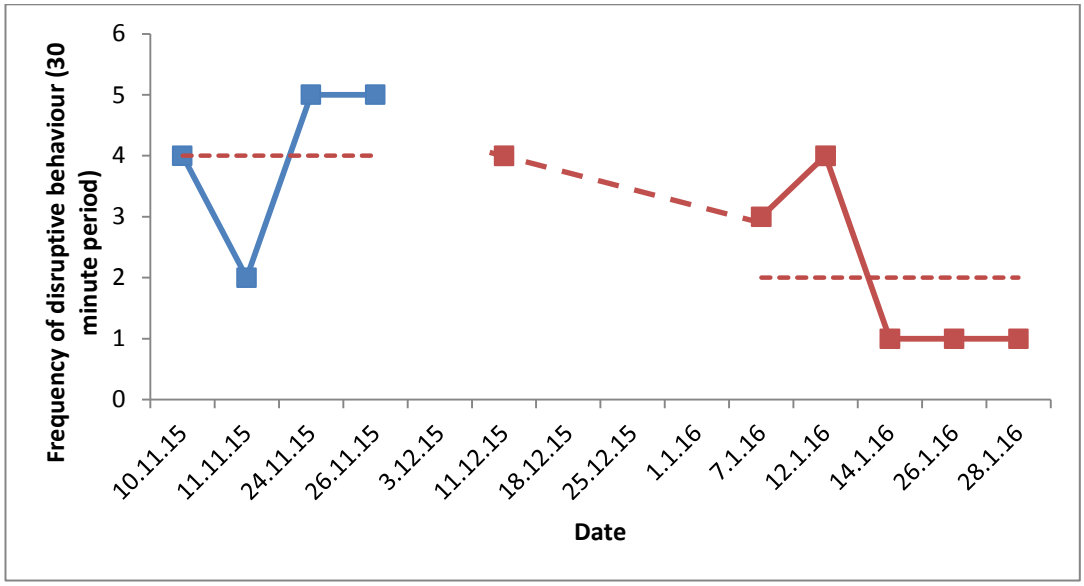

Figure 59: A line graph to show the frequency of Chris' overall 'disruptive behaviour' in a 30 minute period across baseline and intervention phases with mean lines

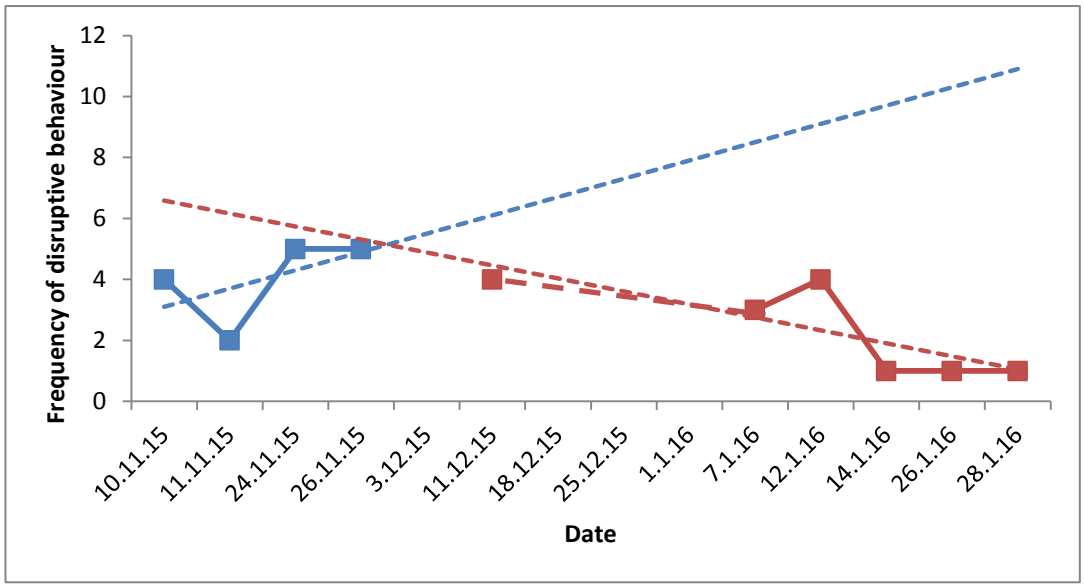

Figure 60: A line graph to show the frequency of Chris' overall 'disruptive behaviour' in a 30 minute period across baseline and intervention phases with trend lines

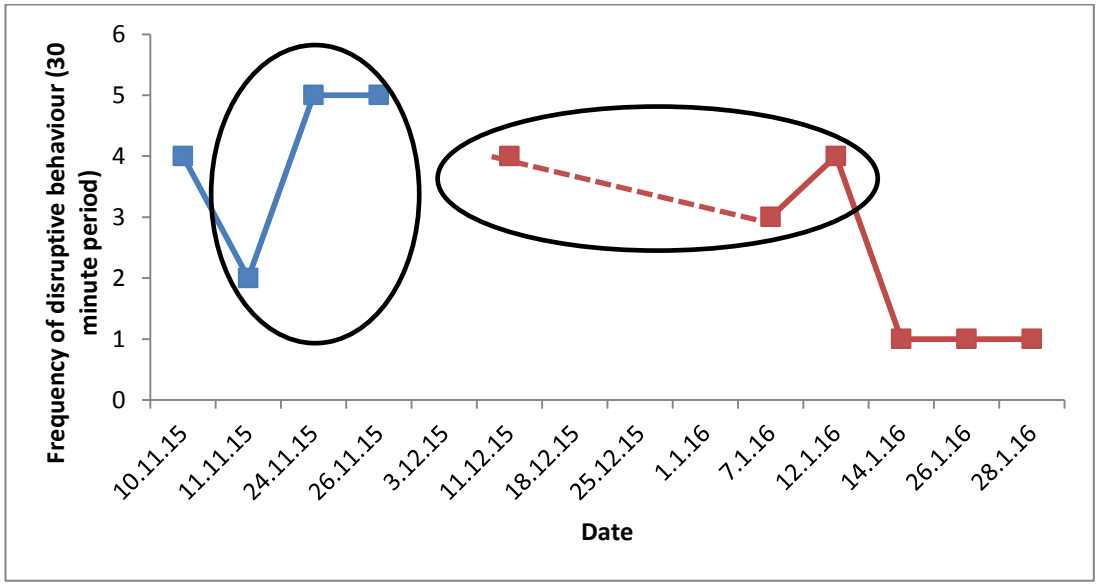

Figure 61: A line graph to show the immediacy of effect for Chris' overall 'disruptive behaviour'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 4 Phase B mean: 2
Variability	Baseline range: 3 -Standard Deviation: 1.41 Phase B range: 3 -Standard Deviation: 1.50
Trend	Baseline: 0.6 Phase B: -0.43 Baseline shows an accelerated trend. Phase B shows a decelerated trend.
Immediacy of effect	There is some evidence of an immediate effect between baseline and phase B as the first 3 data points in Phase B are lower than the last 3 data points in the Baseline Phase.
Overlap	50% of the data points in phase B overlap with baseline.

Table 40: Visual analysis summary for Chris' overall 'disruptive behaviour'

Visual Analysis Summary: Overall Disruptive Behaviour

The visual analysis suggests there was an observable improvement in Chris' disruptive behaviour in the intervention period, this was supported by a decrease in the mean level in the intervention period from 4 to 2. The accelerated trend line in the baseline phase suggests that Chris' behaviour may not have improved without the introduction of the MI intervention. Figure 58 shows evidence of an immediate effect. Half of the data points in Phase B overlap with the data in Baseline making it difficult to conclude whether an intervention effect occurred. According to Kratochwill et al's (2010) guidance these findings suggest that an intervention effect may have occurred.

Visual Analysis for the Target Behaviour 'Fidgeting'

For Chris, the target behaviour 'fidgeting' incorporated playing with school equipment (when explicitly told not to) and tapping his hands on his desk (again despite warnings not to).

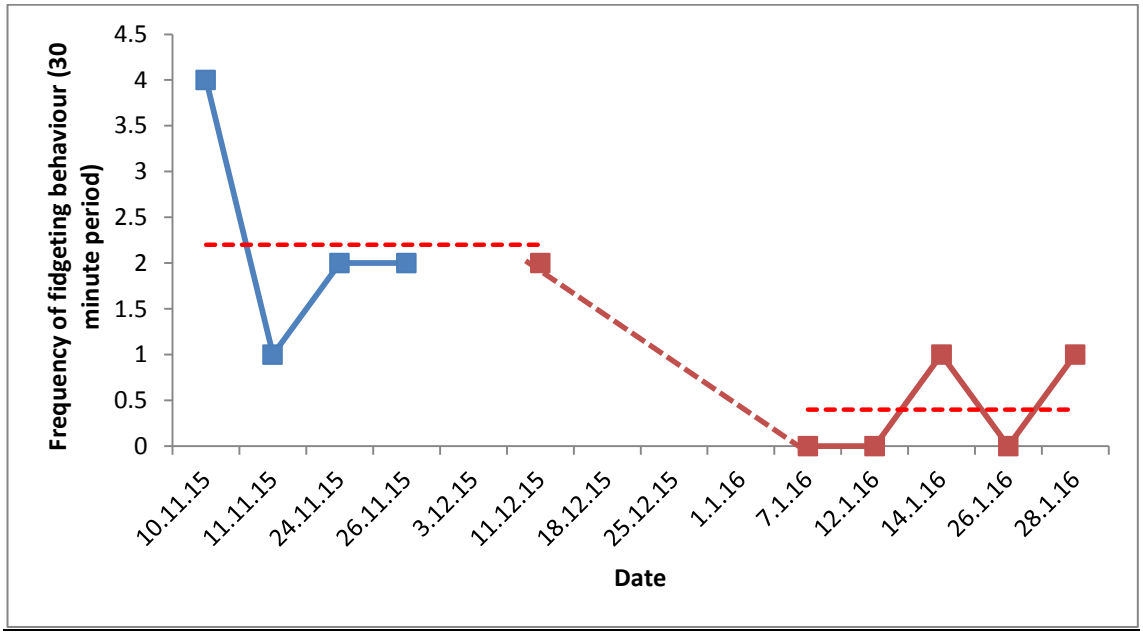

Figure 62: A line graph to show the frequency of Chris' 'fidgeting behaviour' in a 30 minute period across baseline and intervention phases with mean lines

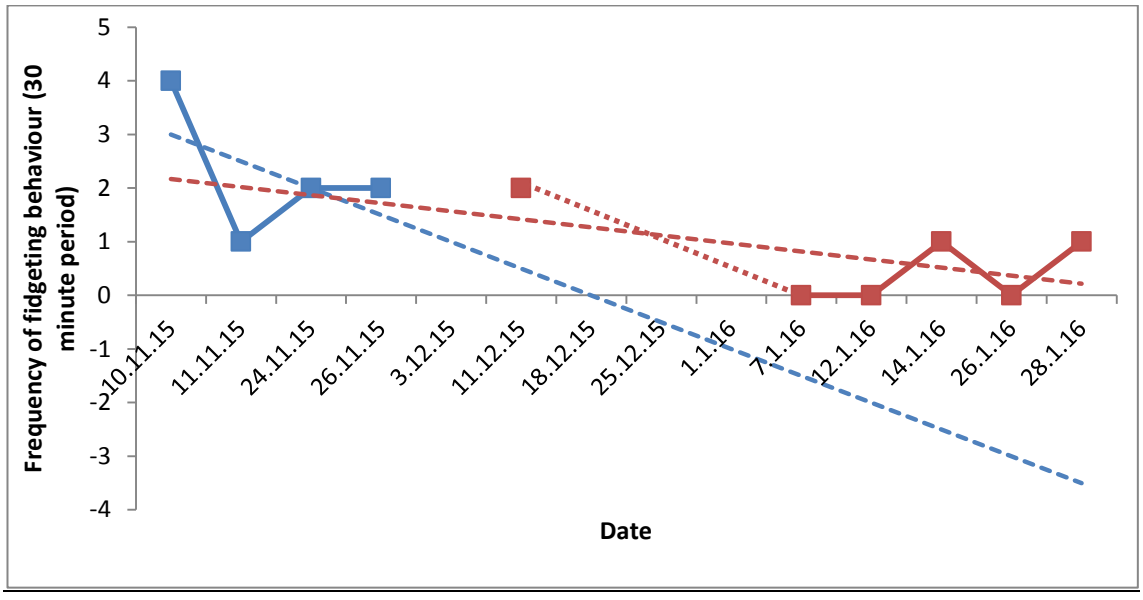

Figure 63: A line graph to show the frequency of Chris' 'fidgeting behaviour' in a 30 minute period across baseline and intervention phases with trend lines

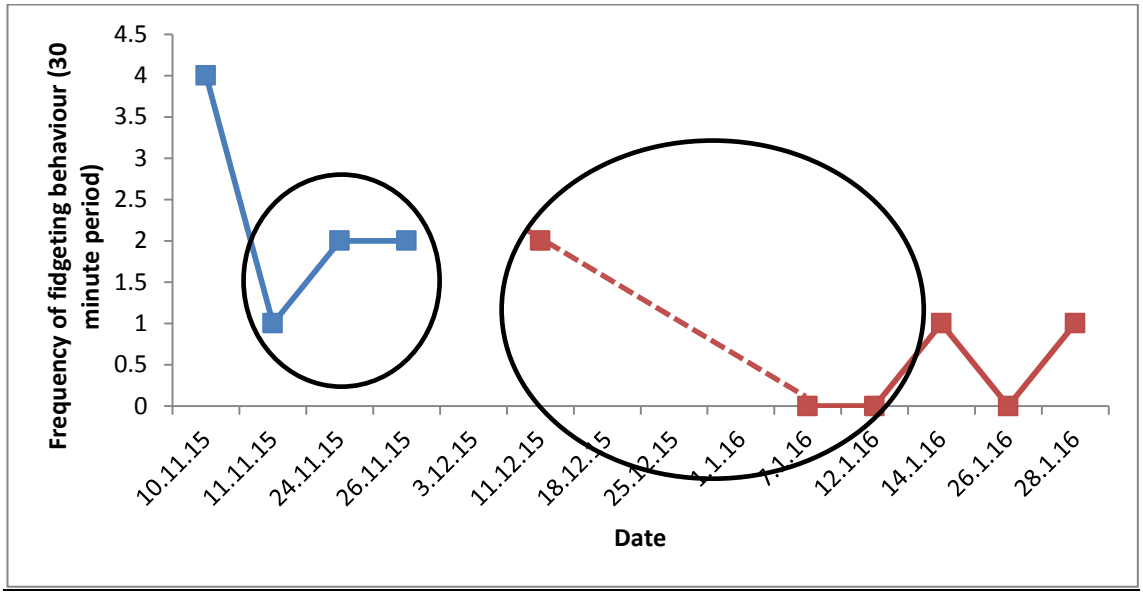

Figure 64: A line graph to show the immediacy effect for the target 'fidgeting behaviour'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 2.2 Phase B mean: 0.4
Variability	Baseline range: 3 -Standard Deviation: 1.25 Phase B range: 2 -Standard Deviation: 0.81
Trend	Baseline: -0.5 Phase B: -0.15 Both baseline and phase B show a decelerated trend. The slope is steepest during baseline.
Immediacy of effect	There is some evidence of an immediate effect between baseline and phase B as the 2nd and 3rd data points in Phase B are lower than the last 3 data points in the Baseline Phase.
Overlap	50% of the data points in phase B overlap with baseline.

Table 41: Visual analysis summary for the target 'fidgeting' behaviour

Visual Analysis Summary: Fidgeting

The visual analysis suggests there was an observable decrease in Chris' fidgeting behaviour in the intervention period, highlighted by a decrease in the mean level from 2.2 to 0.4. However, given the decelerating trend line in the baseline phase it is possible that the improvement in this area may have occurred without the introduction of the MI intervention. There was some evidence of an immediate effect, highlighted by figure 61. Half of the data points in Phase B overlapped in Baseline making it difficult to conclude whether an intervention effect occurred. According to Kratochwill et al's (2010) guidance these findings suggest that an intervention effect may have occurred.

Visual Analysis for the Target Behaviour 'Distracting Peers'

For Chris, this target behaviour incorporated any time during the 30 minute period that he spoke to other children during independent learning time, whispered to children on the carpet and pulled faces at other children in the class.

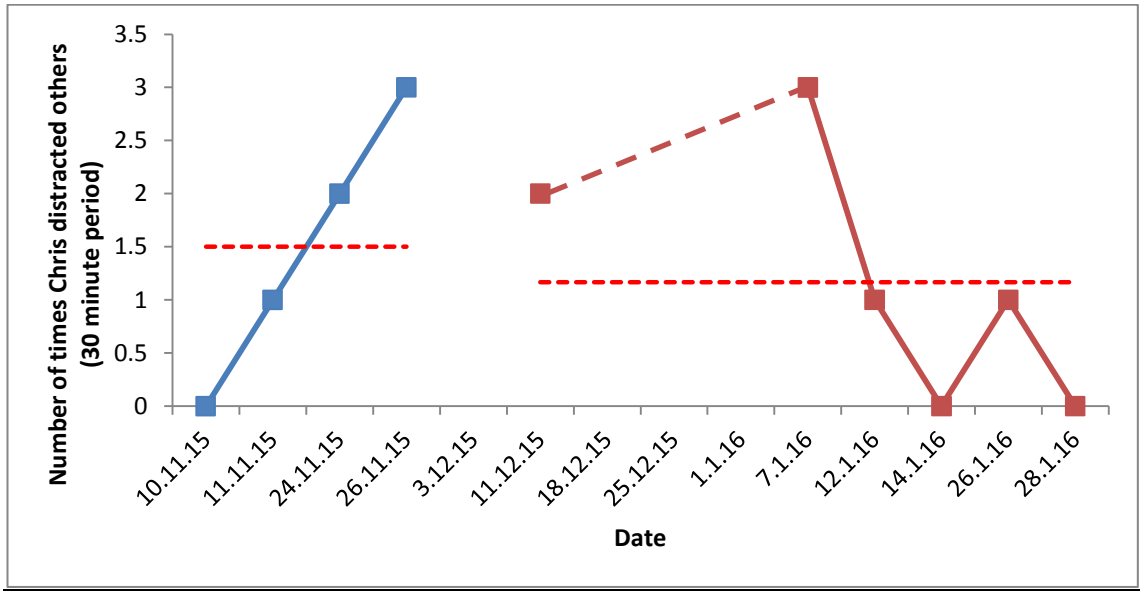

Figure 65: A line graph to show the frequency that Chris 'distracted peers' in a 30 minute period across baseline and intervention phases with mean lines

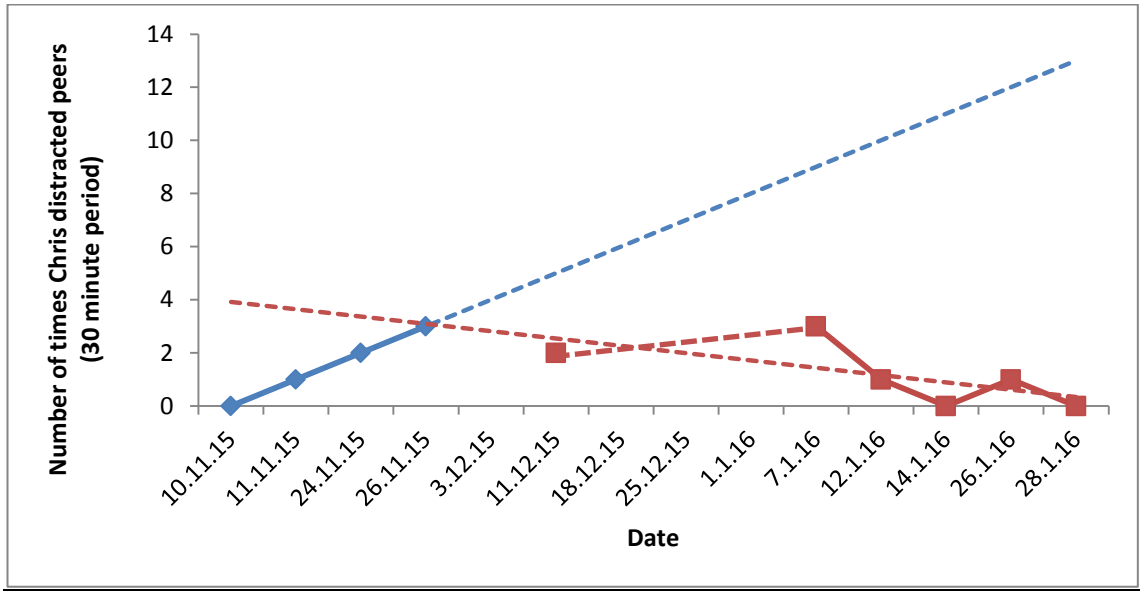

Figure 66: A line graph to show the frequency that Chris 'distracted peers' in a 30 minute period across baseline and intervention phases with trend lines

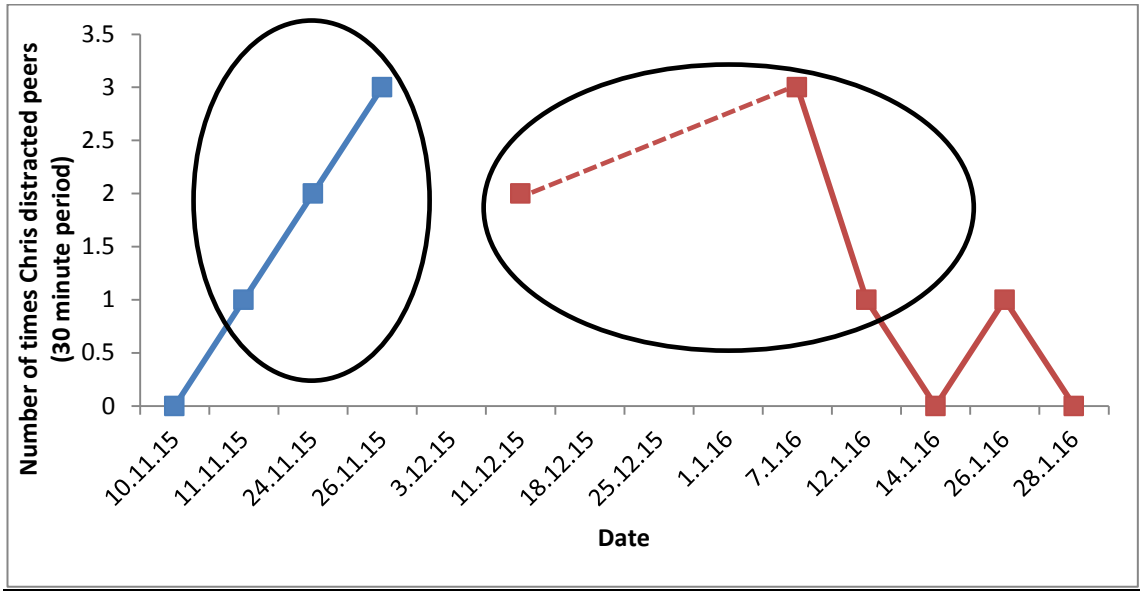

Figure 67: A line graph to show the immediacy effect for the target 'distracting peers'

Outcome-measure feature	Visual Analysis
Level	Baseline mean: 1.5 Phase B mean: 1.16
Variability	Baseline range: 3 -Standard Deviation: 1.29 Phase B range: 3 -Standard Deviation: 1.16
Trend	Baseline: 1 Phase B: -0.28 Baseline shows an accelerated trend. Phase B shows a decelerated trend line.
Immediacy of effect	There is no evidence of an immediate effect as the first 3 data points in Phase B are not lower than the last 3 data points in the Baseline Phase.
Overlap	100% of the data points in phase B overlap with baseline.

Table 42: Visual analysis summary for the target 'distracting peers'

Visual Analysis Summary: 'Distracting Peers'

The visual analysis suggests that there was a slight observable decrease in the frequency that Chris distracted peers in the intervention period. The accelerated trend line in the baseline phase suggests that Chris' behaviour may not have improved without the introduction of the MI intervention. There is no evidence of an immediate effect as illustrated in figure 64. All of the data in Phase B overlapped with the data in Baseline. This indicates a lack of an intervention effect. According to Kratochwill et al's (2010) guidance these findings are not suggestive of an intervention effect.

Inter Rater Reliability

Joint observations for Chris were completed twice (once during baseline and once in phase B) over the research period to enhance the observational measures reliability. Cohen's kappa coefficient (Cohen, 1960) was calculated for the observations as a way of providing inter rater agreement. The level of agreement was defined using Landis and Koch's (1977) levels of agreement.

Over the two joint observations the Cohen's Kappa statistic was 1.0 (absolute agreement). According to Landis and Koch's (1977) categories this indicates an almost perfect level of agreement.

Strength and Difficulties Questionnaire (SDQ, Goodman, 1997)

Goodman's (1997) behavioural screening questionnaire was completed by Chris' class teacher pre and post the MI intervention. The questionnaire contained 25 items which the class teacher was asked to rate as 'not true', 'somewhat true' or 'certainly true'. The scores for each of the scales are presented in the table below.

Time information collected	Total difficulties score	Emotional symptoms score	Conduct problem score	Hyperactivity scale	Peer problem scale	Pro-social scale
PRE	8	2	1	5	0	6
POST	3	2	0	1	0	6
Difference	-5	=	-1	-4	=	=

Table 43: Teacher ratings of Chris' behaviour on the SDQ (Goodman 1997) completed before and after the MI intervention

Summary of table 37

All scores provided by Chris' teacher on the scales emotional symptoms, conduct problems, hyperactivity and peer problems after the MI intervention are lower, or the same, as those provided before the MI intervention. The biggest difference was observed on the hyperactivity scale which decreased from 5 to 1 after the intervention. The score on the pro-social scale remained the same pre and post the intervention. Chris' total difficulties score decreased at the end of the intervention period from 8 to 3.

Chris' Response to the Intervention

Initially Chris presented as extremely quiet and shy but he engaged well in the sessions and contributed well to discussion activities. At times the researcher observed that Chris struggled to answer some of the open ended questions and on occasion would show a reluctance to write. Chris was able to come up with effective strategies to help to manage his behaviour independently without facilitation from the researcher.

4.3 Inter-Observer Agreement for Visual Analysis

According to Kazdin (2003) a key limitation of visual analysis is the degree of subjectivity that is associated with interpreting the information highlighted on SCED graphs. In an attempt to evaluate the reliability of the visual analysis in the current study, the researcher undertook a measure of inter-observer agreement (IOA) described by Friman, (2009). This process involved the researcher and another Trainee Educational Psychologist examining each of the graphs independently for each of the participants and each of the behaviours identified. Both raters had access to each of the graphs which highlighted changes to level, trend and immediacy of effect. Using this information the raters rated the following statements (on a scale of 1 to 5) to indicate their level of agreement:

1. "There is an observable improvement in the participant's behaviour (e.g. overall, distracting peers, fidgeting) across the entire intervention period"
2. "There is a significant difference between baseline and phase B"

Using guidance provided by Friman (2009), an IOA score was calculated by dividing the smaller rating by the larger rating and multiplying this figure by 100. Friman (2009) argues that this provides a reliability estimate. Friman (2009) suggests that a score of 90% establishes a good level of reliability; however in most cases a score of 80% is also acceptable. Table summarises the IOA scores for each participant.

Participant	Inter-Observer Agreement Score
Ben	92.6%
Oscar	94.1%
James	86.3%
Adam	88.2%
Tony	99.4%
Chris	93.3%

Table 44: Highlighting Inter-Observer Agreement scores for each participant

Chapter 5: Discussion

5.1 Introduction to Chapter

The current research used a series of single case experiments to investigate whether a MI intervention improved the disruptive classroom behaviour of six primary aged pupils. This chapter outlines and discusses the key findings from the six single cases; the researcher then considers these findings in relation to key theoretical and research papers. The methodology used in the current study is then evaluated and limitations of the research acknowledged and discussed. The chapter closes with a discussion of the implications for practice and ideas for possible future research.

5.2 Results Summary Table

Participant	Did MI intervention show a positive impact (e.g. did overall disruptive behaviour reduce?)	Did MI intervention show a positive impact on targeted behaviours?	Did Total Difficulties score on Goodman's (2001) SDQ reduce?
Ben	Yes	**Distracting peers:** No **Requiring Teacher/TA intervention:** Yes	Yes
Oscar	Yes	**Distracting Peers:** Yes **Shouting Out:** Yes	Yes
James	No	**Shouting Out:** No **Attention Seeking:** No **Distracting Peers:** No	Yes

		Being Rude/Ignoring Instructions: No	
Adam	No	**Attention Seeking:** Yes **Distracting Peers:** No **Immature Behaviour:** No **Leaving Seat:** No	Yes
Tony	No	**Distracting Peers:** No **Fidgeting:** No	Yes
Chris	Yes	**Fidgeting:** Yes **Distracting Peers:** Yes	Yes

5.2 Summary of Findings

5.2.1 Research Question 1:

Does a 4/5 week Motivational Interviewing intervention reduce targeted pupils disruptive classroom behaviour?

5.2.1.1 Ben

Overall Disruptive Behaviour

There was a consistent observable decrease in Ben's overall disruptive behaviour across the entire intervention period. Given the accelerating trend line in the baseline phase there is evidence to suggest that this improvement may not have occurred without the introduction of the MI intervention

Distracting Peers

There was not a consistent observable decrease in the frequency of Ben distracting peers in the intervention period, although this behaviour did reduce to 0 at the end of phase B. The decelerating trend line in the baseline phase suggests there was insufficient evidence to indicate a significant difference when the MI intervention was introduced.

Requiring Teacher or TA Intervention

There was a consistent observable decrease in the number of times Ben required teacher or TA intervention across the entire intervention period. The decelerating trend line in the baseline phase suggests there was insufficient evidence to indicate a significant difference when the MI intervention was introduced.

5.2.1.2 Oscar

Overall Disruptive Behaviour

There was a consistent observable decrease in Oscar's overall disruptive behaviour across the entire intervention period. The decelerating trend line in the baseline phase however suggests that there was insufficient evidence to indicate a significant difference when the MI intervention was introduced.

Distracting Peers

There was an observable decrease in the frequency of Oscar distracting peers in the intervention period. The decelerating trend line in the baseline phase however suggests that there was insufficient evidence to indicate a significant difference when the MI intervention was introduced.

Shouting Out

There was a consistent and observable decrease in the frequency of Oscar shouting out across the entire intervention period. The accelerated trend line in the baseline phase suggests there is evidence that this behaviour would not have decreased without the introduction of the MI intervention.

5.2.1.3 James

Overall Disruptive Behaviour

Despite the reduction in mean level in the intervention phase, there was no clear observable decrease in James' overall disruptive behaviour throughout the intervention period. In addition, the decelerated trend line in the baseline phase suggests that any positive changes observed in James' behaviour could not be attributed to the MI intervention.

Shouting Out

Given the unstable baseline for this behaviour the researcher was unable to draw firm conclusions regarding the effectiveness of the MI intervention. In addition the decelerated trend line in the baseline phase suggests that any changes in James' behaviour could not be attributed to the MI intervention.

Attention Seeking Behaviour

Given the unstable baseline for this behaviour the researcher was unable to draw firm conclusions regarding the effectiveness of the MI intervention. In addition the decelerated trend line in the baseline phase suggests that any changes in James' behaviour could not be attributed to the MI intervention.

Distracting Peers

There was no observable decrease in the frequency of James distracting peers in the intervention period and the mean level remained stable across both phases. The accelerated trend line in the baseline phase does suggest however that there was some evidence that James' behaviour may not have improved without the introduction of the MI intervention.

Being Rude/Ignoring Instructions

There was no consistent and observable decrease in the number of times James was rude or ignored instructions throughout the intervention period. The decelerated trend line in the baseline phase suggests that any changes in James' behaviour could not be attributed to the MI intervention.

5.2.1.4 Adam

Overall Disruptive Behaviour

There was no consistent and observable decrease in Adam's overall disruptive behaviour across the intervention period. The accelerated trend line in the baseline phase does provide some tentative evidence that Adam's disruptive behaviour would not have improved without the introduction of the MI intervention.

Attention Seeking Behaviour

There was an observable decrease in the frequency of Adam displaying attention seeking behaviour in the intervention phase, supported by a reduction in the mean level. The decelerated trend line in the baseline phase however suggests there was insufficient evidence that this changed occurred because of the introduction of the MI intervention.

Distracting Peers

There was no observable decrease in the frequency of Adam distracting peers in the intervention period. The accelerated trend line in the baseline phase does provide some tentative evidence that the frequency of Adam distracting peers would not have improved without the introduction of the MI intervention.

Immature Behaviour

There was no observable decrease in the frequency of Adam displaying 'immature behaviour', as identified by school staff, in the intervention phase and the mean level suggests that the frequency of this behaviour increased during phase B. The decelerated trend line in the baseline phase suggests that Adam's immature behaviour may have improved without the introduction of the MI intervention.

Leaving Seat

There was clear evidence of an observable and consistent decrease in the frequency of Adam leaving his seat in the intervention period. However, the unstable baseline means the researcher was unable to include that this improvement was due to the introduction of the MI intervention. In addition, the decelerated trend line in the

baseline phase suggests that the frequency of Adam leaving his seat may have reduced without the MI intervention.

5.2.1.5 Tony

Overall Disruptive Behaviour

There was no clear evidence of an observable and consistent decrease in Tony's overall disruptive behaviour, although the frequency of disruptive behaviour did decrease towards the end of the intervention period. The decelerated trend line in the baseline phase means that there is insufficient evidence that the improvement in behaviour was due to the introduction of the MI intervention.

Distracting Peers

There was no clear evidence of an observable and consistent decrease in the frequency of Tony distracting peers in the intervention period, although this behaviour did decrease towards the end of the intervention period. The decelerated trend line in the baseline phase means that there is insufficient evidence that the improvement in behaviour was due to the introduction of the MI intervention.

Fidgeting

There was no evidence of an observable decrease in the frequency of Tony's fidgeting behaviour in the intervention phase. The mean level indicates that the frequency of this behaviour increased during the intervention phase.

5.2.1.6 Chris

Overall Disruptive Behaviour

There was no clear evidence of an observable decrease in Chris' overall disruptive behaviour in the intervention phase despite the reduction of the mean level in phase B. The accelerated trend line in the baseline phase does however provide some evidence that the frequency of Chris' disruptive behaviour may not have decreased without the introduction of the MI intervention.

Fidgeting

There was clear evidence of an observable decrease in Chris' fidgeting behaviour in the intervention phase. The decelerated trend line in the baseline phase however means that there is insufficient evidence to conclude that this improvement was due to Chris having access to the MI intervention.

Distracting Peers

Given the extremely unstable baseline for this behaviour the researcher was unable to draw firm conclusions regarding the effectiveness of the MI intervention. A slight reduction in the mean level was observed in the intervention phase and the accelerated trend line in the baseline phase provides tentative evidence that any reduction in the frequency of Chris distracting peers may be attributed to the MI intervention.

5.3 Interpretation of Findings

There was some evidence to suggest that for three of the participants (Ben, Oscar and Chris) the MI intervention reduced targeted pupils overall disruptive classroom behaviour. Visual analysis highlights decreases in the frequency of these participant's disruptive behaviours. Despite a reduction in the mean level being observed for the remaining three participants (James, Adam and Tony) there were not clear changes in any of the targeted behaviours that could be reliably attributed to the MI intervention.

A possible explanation for the positive findings is that the introduction of the MI intervention encouraged the participants to improve their classroom behaviour resulting in a reduction in the frequency of disruptive behaviour observed across the intervention period. This supports Atkinson and Cryer's (2015) finding that a MI intervention had a significant impact on the learning motivation and classroom behaviour of a target pupil.

Alternatively, the reduction in disruptive behaviour may have occurred due to other factors in the participant's environment, such as changes at home or a particular interest in the material being taught in school. For the majority of participants the MI intervention was introduced after the two week Christmas holiday which may have improved their behaviour at the start of the school term. The full implications of this will be acknowledged and discussed later in the chapter.

It is also important to acknowledge the issue of issue of practitioner effects. It is possible that the improvement in behaviour occurred as a result of spending time outside of the classroom working with a 'specialist' practitioner and not because of the MI intervention itself.

In the results chapter the researcher has highlighted the different behaviours that were observed for each of the participants. Due to the unstable baselines drawing conclusions from this data is difficult, however it is apparent that in the cases of Ben, Oscar, Tony and Chris decreases in the frequency of distracting peers were observed. No difference was observed in the case of James and Adam who showed a slight increase in this behaviour in the intervention period. Fidgeting behaviours were observed in the cases of Chris and Tony. Whilst Chris' data showed a decrease in this behaviour, a slight increase was observed in the intervention phase for Tony.

Decreases in requiring teacher or TA intervention was observed in the case of Ben, during the intervention phase. Decreases in attention seeking behaviours were also observed for Adam and James. In the case of Adam improvements were noted in the frequency of him leaving his seat in the intervention phase however the frequency of him displaying 'immature' behaviour increased after the introduction of the MI intervention. For James the frequency of shouting out and being rude/ignoring instructions both decreased in the intervention phase.

These findings appear to provide some evidence that the MI intervention was successful at decreasing a range of observable, disruptive classroom behaviours however the researcher acknowledges that it is difficult to draw firm conclusions due to the variability in the data in the baseline phases. In addition, in a number of cases the frequency of the behaviours observed were so low (e.g. only occurring once in the 30 minute period) making it difficult to observe improvements after the introduction of the MI intervention.

It is important to acknowledge the ethical implications associated with implementing an intervention that children and young people may find difficult to access. In the current study the author made efforts to remove the writing demands when it was perceived that the participants were finding particular tasks difficult or were beginning to withdraw from sessions. The purpose of this was to ensure that participants did not become distressed during the weekly MI sessions and remained engaged during the research period.

Finally, this research was important as it was the first to use a single case experimental design to explore whether MI can effectively reduce the disruptive classroom behaviour of primary aged pupils. Throughout the duration of the Doctorate in Applied Educational Psychology course the researcher has had the opportunity, both during seminar sessions and out on placement, to develop her therapeutic skills. This training enabled the researcher to confidently plan and deliver the weekly MI sessions. It is important to acknowledge that the researcher's position in this research was central, as she was delivering the weekly intervention and over-seeing the evaluation of its effectiveness. It is therefore difficult to ascertain whether improvements in participant's behaviour occurred as a result of the intervention or simply having the opportunity to work with a skilled practitioner who was able to develop a strong therapeutic alliance with the participant's throughout the research period. The researcher feels that developing a strong therapeutic alliance was vital to

ensure that participants remained engaged in the weekly sessions, shared information with the researcher, contributed to collaborative discussions and completed all of the activities presented to them. It was important that the researcher was able to individualise her responses to each of the participant's specific needs and also to develop an appreciation of contextual factors in each of the participant's environments.

5.4 Research Question 2

Does staff perception of pupil behaviour, as measured by Goodman's (1997) Strength and Difficulties Questionnaire, change as a result of a 4/5 week MI intervention?

The scores on the SDQ (Goodman, 1997) highlight a reduction in the total difficulties score for all participants. This reduction ranged from -5 (for Chris) to –10 (for Tony and Oscar). For all participants, class teachers noted improvements in conduct and levels of hyperactivity, highlighted by a reduction in scores on these two scales. The hyperactivity scores decreased by an average of -4 and conduct scores decreased by an average of 3.33. In all but two cases the pro-social scores (the only positively scored scale) improved by an average of 1.66. Minimal improvements were noted for participants on the emotional symptoms and peer problem scales.

5.5 Interpretation of Findings

The SDQ (Goodman, 1997) data suggests that the MI intervention had a positive impact on participants' behaviour, as rated by class teachers. This finding is supportive of previous research which has highlighted the potential benefits of MI on children's behaviour (Atkinson and Cryer, 2015). It is interesting that the biggest improvements were noted on the conduct and hyperactivity scales. Arguably it is these two scales that are most closely linked to disruptive classroom behaviour, the target of the MI intervention.

The limitations of Goodman's (1997) SDQ will be discussed later in the chapter.

5.5.1 Comparison of SCED and SDQ data

It is interesting that the total difficulties scores on Goodman's (1997) SDQ reduced for all participants but when analysing the data collected from the repeated observation measures the MI intervention only appeared to have a positive impact for three of the participants. There are a number of possible explanations for this apparent discrepancy.

Firstly, the weekly observation measures were designed to capture a 'snapshot' of participant behaviour on the same day, during the same lesson either weekly or twice

weekly. In comparison, the SDQ asked teachers to consider each participant's behaviour across the board, in a variety of situations. It is therefore possible that improvements in participant behaviour did occur (as highlighted by a reduction in the total difficulties scores for all participants) but that the repeated measure only had a limited opportunity to capture these improvements. In addition it is possible that class teachers may have reported positive ratings as they were aware that the researcher had delivered the weekly MI sessions and wanted to please her by reporting positive outcomes.

Secondly, due to time constraints placed on the researcher it was not possible to wait to achieve stable baseline phases. This meant that it was difficult to draw firm conclusions surrounding the impact of the MI intervention through analysing the single case data. If longer and stable baselines were achieved it is possible that the single case data may have matched or have been more comparable to the findings from the SDQ. Further limitations of having an unstable baseline will be discussed later in the chapter.

5.6 Links to Research

Over the last decade researchers (e.g. Atkinson, Bragg, Squires, Wasilewski and Muscutt,2001) have highlighted the importance of promoting the use of therapeutic interventions by EPs to emphasise the positive impact and the contribution that they can make to improve outcomes for children and young people. The researcher posits that it is vital that therapeutic interventions are evaluated so that their effectiveness can be established.

Results from the current study add to the limited existing body of evidence surrounding the use of MI in education, in particular, with primary aged pupils. The effectiveness of MI in the field of health and addictive behaviours are well documented (e.g. Jensen et al, 2011, Hettema et al 2005, Rubak et al, 2005). However, only a handful of studies have focused on its impact on education and of these studies, only one has investigated its use with primary aged pupils. Frey et al (2011) observed that MI has mainly been used with adults and adolescents rather than younger children. They suggested that 'it may be plausible that MI could be utilised with young children with some effectiveness" (p.2). In addition, McNamara (2009) suggested that 'a significant question that is asked regarding the use of MI is can it be used effectively with young children?' (p.86) Evidence from this research appears to support the suggestion that MI can be used effectively with children in years 5/6.

Previous efforts have been made to evaluate the effectiveness of MI with older, secondary aged pupils. Similar to the current study, Atkinson and Woods (2003), reported favourable outcomes for pupils accessing a MI intervention but did not focus on behaviour. The researchers concluded that MI may have a positive impact on pupil motivation, particularly in terms of promoting pupil attendance, achievement and self concept. The evidence from the present study suggests that in addition to Atkinson and Wood's (2003) findings, MI can make a difference to some targeted pupil's classroom behaviour.

The current study supports Atkinson and Cryer's (2015) findings and contributes further to the limited evidence base that suggests that MI can be used effectively with primary aged pupils. Atkinson and Cryer (2015) also implemented a 4 week MI intervention with a primary aged pupil. They found that MI had a significant impact on learning motivation and classroom behaviour and concluded that their research

offers ‘tentative indications that MI techniques may be useful in supporting primary aged pupils’ (p.67). In addition the authors concluded that ‘using a pack of MI-based materials and making appropriate and flexible adaptations to the activities helped to enable positive outcomes for the pupil’ (p.67).

Through implementing the MI intervention with the 6 participants in the current study it became apparent that the approach elicited detailed and important information regarding the pupil’s context and views. This finding supports previous research (e.g. Kittles and Atkinson, 2009, Atkinson and Cryer, 2015) that suggests MI has a role in assessment and could be used effectively as a ‘one-off’ method of gathering children and young person’s views. This is an interesting point as in the current climate it is widely acknowledged that EPs have limited time available to deliver therapeutic interventions (Baxter and Frederickson, 2005). The findings from the current study support previous research which suggests that MI could be used as a ‘casework approach’ alongside the consideration of affective and educational factors in the child’s environment (Kittles and Atkinson, 2009).

McNamara (2007) argues that the effectiveness of MI with younger children is dependent on ‘the therapist’s skills with regard to translating and interpreting the semantic content of MI theory into child friendly language’ (p.209). This point has also been further acknowledged by Atkinson and Cryer (2015). In the current study the researcher found that this was key. The researcher’s participant criteria (see chapter 3) targeted children who had the verbal and cognitive skills needed to access elements of the intervention, this equated to recruiting participant’s who were working at least at a level 4 in Literacy at the start of the research period. Through delivering the MI intervention the researcher found that one of the barriers for engagement with the sessions was the academic level of pupils, primarily focused on pupil’s understanding of the MI activities and, in particular, performing the written aspects of the activities. A number of the participants (in particular Adam and Tony) struggled with the volume of writing need and appeared to withdraw on a number of occasions. It is likely that this could have served as a barrier to the therapeutic process and also interrupted the collaborator relationship which is emphasised in MI. In addition, the participants’ academic difficulties may have increased the opportunities for the facilitator to be perceived as the ‘expert’ which is not acknowledged to be effective MI practice.

5.7 Evaluation of Research Methodology

5.7.1 The use of a Single Case Experimental Design

The current study adopted an A-B single case experimental design in an attempt to explore the effectiveness of a MI intervention for improving the disruptive classroom behaviour of primary aged pupils and extend the previous case study research conducted by Atkinson and Cryer (2015). The study's AB design involved opportunity, over a short baseline, to observe natural trends in behaviour before the introduction of the MI intervention. However, the AB design adopted limits the causal inferences that can be made, and a number of threats to internal validity, previously highlighted in Chapter 3. Barlow et al (2009) argue that it therefore cannot be concluded that the changes observed in the intervention phase occurred solely because of the introduction of the MI intervention, they suggest that this change may have occurred without the introduction of the intervention. In addition, variations in behaviour during the baseline phase were apparent in all cases making it difficult to draw inferences concerning the effectiveness of the MI intervention. Future research may wish to consider use of a multiple-baseline design to address these points. However, this was not practical in the present research due to the time limitations inherent in the study. Nonetheless, this would have increased the strength of the conclusions through enhanced internal validity.

Despite McCormick (1995) suggesting that SCEDs are typically associated with a good level of experimental control which enables them to effectively establish cause and effect there are a number of key limitations in the design used in the current study which will now be discussed.

5.7.2 Stability of Baseline Phases

Barlow et al (2009) argue that evaluation of baseline trend is fundamental to the principles upon which SCEDs operate. The baseline data allows the researcher to gather information about the natural behaviour under study and significantly gives us the opportunity to predict how the behaviour would continue without the intervention (Rizvi and Nock, 2008). According to Barlow et al (2009) a stable baseline must be observed before introducing an intervention if a causal relationship is to be established. Within the current study, time constraints placed on the researcher and ethical considerations surrounding increasing the amount of time participants had to wait to access the MI intervention meant that for some of the participants a stable baseline was not achieved. The researcher recognises the

implications of not establishing a stable baseline and acknowledges that the absence of a clear baseline makes the task of drawing conclusions about the impact of the intervention difficult. Extending the baseline periods in future research of this kind would help to give a better understanding of participants' disruptive behaviour before the introduction of the intervention.

5.7.3 Limitations of Visual Analysis

In the current study data was analysed using visual analysis. The researcher acknowledges the weaknesses with this method, primarily in relation to subjectivity (Kazdin, 2003). As highlighted in chapter 3, SCED data can be analysed using statistical methods, however the data in the current study was likely to violate statistical assumptions meaning this method of analysis was inappropriate. The researcher accepts the limitation of not having any statistical analysis creates, however, it was felt that the visual analysis provides adequate information regarding the effectiveness of the MI intervention. Furthermore, to improve the reliability of the visual analysis the researcher conducted inter-observer agreement checks which produced a high level of agreement.

5.7.4 School Holidays

Due to the timeline of the current study, the 2 week Christmas Holiday fell within the data collection period. For four of the participants (Ben, Oscar, Tony and Chris) the holiday period fell during the intervention period. The researcher acknowledges this as an extraneous variable which may have impacted on the validity of the results. It is possible that the holiday period may have positively impacted upon the participant's behaviour at the beginning of the new school term; this should be taken into consideration when studying the results of the current study.

5.7.5 Researcher Bias

It is acknowledged that researcher bias is a limitation of the current study due to the fact that each of the MI sessions were delivered by the researcher. The implications of this are that the researcher was effectively evaluating her own practice which may have created bias in the results.

The researcher had the option of training Teaching Assistants (TAs) in the MI approach so that they could deliver the intervention to the pupils. However, the researcher was not confident that in the time available the TAs would be able to master the core therapeutic competencies needed to effectively implement the intervention. In addition, due to pragmatic issues, the TAs used in the current study

had limited time available to be able to implement a weekly intervention, and would have required frequent professional supervision in order to implement the intervention ethically.

5.7.6 Threats to Internal Validity Revisited

The table below highlights threats to internal validity (previously highlighted in chapter 3) and how they specifically relate to the current study.

Threat to Internal Validity	Discussion in relation to the current study
History: things have changed in the participant's environment other than the intervention	None of the participants in the current study began any new interventions during the study period. No changes in staff occurred for any of the participants and no major events in school occurred which may have had an impact on the participants response to the intervention.
Maturation: growth, change or development of participant's not related to the intervention	Data in the current study was collected over a period of time and so is vulnerable to the effects of maturation. The researcher was unable to control for this threat however class teachers were given the opportunity to report whether any significant changes had occurred for the participants at the end of the intervention period (when post intervention measures were collected). No significant changes were reported for any of the participants.
Testing: changes occurring as a result of practice and experience on any tests	This threat was reduced in the current study by using an observational measure (so that participants were not required to complete any tests and would not

	experience practice effects). Teaching Assistants did not report any issues relating to testing when collecting the repeated observation measures.
Instrumentation: changes in the way participant's are measured throughout the study period	In the current study the repeated measures were completed by the same member of staff for each participant across both the baseline and intervention period. For the majority of participants observations were completed on the same day (or days) each week although some variations occurred on the time of day measures were taken due to other demands placed on TA time. The author acknowledges this as a limitation of the current study. To ensure that the repeated measures were completed consistently the author met with all TA's frequently throughout both baseline and intervention periods.
Mortality : e.g. participant drop-out	None of the participants dropped out of the current study. The researcher stayed in regular contact with school staff in each of the schools via email, telephone and school visits.
Hawthorne Effect: e.g. participant's changing their behaviour due to their awareness of being observed	Teaching Assistant's did not report that they felt the participant's changed their behaviour due to an awareness of being observed. It is possible that the author's presence (during joint observations) may have altered the participant's behaviour slightly. This should be considered a limitation of the study.

5.8 Measures used

5.8.1 Observation Measures

It has been suggested by researchers (e.g. Kratochwill, 1992) that using a direct observation measure can increase the validity of a SCED. For an observation measure to be reliable and valid however, the researcher acknowledges that the design needs to account for a range of possible sources of participant and observer error and bias. To reduce participant error in the current study, efforts were made to complete the observations on the same day (or days) at approximately the same time each week. The researcher acknowledges that this was not always possible due to demands placed on school staff and school timetable conflicts. This limits the validity and reliability of any conclusions that can be drawn about the impact of the MI intervention.

To increase the validity of an observational measure, Horner et al (2005) suggest that the observable behaviour needs to be measured repeatedly, assessed for consistency (using inter- rater agreement) and be of social significance for the participants. In the current study, 20% of the observations were undertaken jointly (by the researcher and school staff). Cohen's kappa indicated a moderate to perfect level of inter agreement which Robson (2011) suggests increases the reliability and validity of observational data. The researcher acknowledges the impact that she may have had on the participants' behaviour when carrying out the joint observations, particularly as she was also delivering the MI intervention. Future research of this kind would benefit from formal inter- rater checks by an external observer to increase the validity and reliability of this data.

Finally, in the current study, due to demands placed on TA time, the observations were completed for 30 minutes either weekly or twice weekly. Future studies may wish to extend this time period in an attempt to capture more incidences of the targeted behaviours, increasing the opportunity for the MI intervention to demonstrate a positive effect.

5.8.2 SDQ

SDQ data was only collected at two points in time (pre and post the MI intervention) which means that no opportunity was provided to observe natural trends over time. The researcher acknowledges the potential impact of other factors not related to the MI intervention and as a result of these accepts that no causal links between changes

observed in the SDQ scores and the MI intervention can be made. It is feasible that changes observed could be related to variables such as history and maturation (described in more detail in chapter 3). In addition, changes observed could also be related to the classroom and school environment.

5.9 Intervention Integrity

In line with the guidance provided by Atkinson (2012) the researcher used the Facilitating Change 2 materials flexibly. Sessions were planned to meet the individual needs of each of the participants and the researcher followed the instructions provided by Atkinson (2012) when presenting the participants with each of the activities. The researcher kept a research log for each participant detailing the activities completed in each session and brief notes highlighting their responses (refer to Appendix 5).

The researcher acknowledges that it would have been beneficial for an independent observer to carry out intervention integrity checks throughout the research period to ensure that the researcher was adhering to the principles of MI and following the instructions provided by Atkinson (2012). This is discussed further later in the chapter.

5.10 Implications for EP Practice

This research has contributed to the literature around the use of MI in education specifically focusing on the responses of six children displaying frequent and observable 'disruptive' classroom behaviour. The current study appears to offer tentative support to the notion that MI can be used effectively with primary aged pupils to target their 'disruptive' classroom behaviour. Evidence of some positive change in participant's behaviour was observed in three cases and this finding was supported by teacher ratings of behaviour, collected using Goodman's (2001) SDQ. This finding is particularly noteworthy due to the limited amount of research evidence that exists regarding the use and impact of MI with primary aged pupils.

As a result of the findings from the current study the researcher has identified a number of implications for EP practice. These will now be highlighted and briefly discussed below:

The use of Therapeutic Interventions

EPs regularly use therapeutic interventions and techniques in their work. For example, Atkinson et al (2011) found that 92% of EPs use therapeutic interventions in their practice. Most noteworthy to the current research, Atkinson et al (2011) also found that MI was the third most used therapeutic intervention. These findings suggest that the findings from the current study will be beneficial and significant to EPs keen to implement MI techniques into their practice.

The Use of a Structured MI Intervention

Further implications for Educational Psychologists are that a structured MI intervention can be used flexibly with primary aged pupils displaying challenging behaviour in schools. The current research suggests that children in this age range have the ability to understand, use and apply MI principles to improve a number of target behaviours. In addition, in the current study the researcher found that detailed information was elicited from each of the participants, particularly around their individual experiences of school (highlighted in Oscar's research log in Appendix 5) As previously discussed, this study indicates that MI techniques can usefully be used as a 'one-off' assessment tool to gather children and young person's views which would effectively contribute to EP casework (Kittles and Atkinson, 2009).

Using MI as Package of Support

The findings of this study suggest that EPs might be encouraged to use a MI approach as part of a package of support, when working with children and young people who are unmotivated in order to promote positive outcomes. EPs have the necessary interpersonal and group skills and psychological knowledge to work alongside children, parents and teachers and support them in a therapeutic manner.

Time Constraints

It is apparent that the time resources needed to implement a MI intervention are significant. In the current study, the researcher faced significant challenges implementing the weekly MI sessions despite having dedicated time for research. The researcher feels that a potential role for the EP could involve offering training, support and supervision to school staff so that they are able to deliver the MI intervention. It is apparent that care would need to be taken to ensure that training in

the approach was comprehensive and that staff had access to regular supervision in order to ensure fidelity to the intervention.

5.11 Future Research

This research presents six case studies and the findings indicate that in certain circumstances, a MI intervention can improve the disruptive classroom behaviour of primary aged pupils. Given the nature of the SCED methodology used in the current study, the extent to which the findings can be generalised to the wider population is limited. Researchers (e.g. Kratochwill et al, 2013) have suggested the reliability and validity of SCED research can be improved by replicating the findings with more cases across a number of different settings. In the current study the findings were replicated across 6 single cases in three different schools and further replication would be beneficial. In addition, the researcher feels that the current study could be extended in a number of ways. These will now be briefly highlighted and discussed below.

Evaluate MI using a Randomised Control Trial (RCT)

To extend the current research and interrogate what it is about MI that appears to lead to positive improvements in primary aged pupil's behaviour it is apparent the use of a more rigorous experimental group design would be beneficial. Robson (2002) argues that an RCT is often considered to be the 'gold standard' experimental design due to the fact that they "provide the best evidence for effectiveness, for whether something 'works'" (Robson, 2002, p. 116). The researcher acknowledges that to generalise the findings observed in the current study it would be beneficial for an RCT to be conducted investigating the use of MI, alongside other therapeutic interventions in comparison to a control group.

Evaluate the Efficacy of the Intervention when Delivered by School Staff

To further ascertain whether MI is an effective intervention for improving the behaviour of primary aged pupils it would be useful to investigate the outcomes for pupils when the intervention is delivered by school staff. Atkinson and Ameusu (2007) suggested that MI techniques may be more successful when used by school staff who have a pre-existing relationship with the young person. It is likely that if school staff were to implement a MI intervention they would need thorough training

on MI and associated principles, training on the delivery of therapeutic interventions and access to supervision so they have the opportunity to ask questions, problem solve and improve their practice.

Investigate the Relationship with the Facilitator

As highlighted in Chapter 2, a large amount of research evidence has been commissioned investigating the importance of therapeutic relationships during counselling sessions. For example, as previously discussed Lambert and Barley (2002) found that common process factors account for 30% of the variance in treatment outcomes. In addition, Assay and Lambert (1999) found that collaboration with clients accounted for 30% of client change. This finding is interesting as it indicates that the relationship with the counsellor is key and not just the techniques or intervention being used. This finding has implications for the current research and future research and where other practitioners (e.g. school staff) are facilitating the MI intervention. It is therefore possible that different practitioners might not produce the same outcomes because of differences in rapport established between themselves and the pupil. In the current study it is not possible to conclude that the positive impact of the MI intervention occurred as a result of a 'therapeutic intervention effect' and not a 'therapist effect' as the MI sessions were all delivered by the research. Future research should therefore examine the impact of delivering the intervention via a range of different practitioners, pupils and settings in order to address this limitation.

In addition, to address a limitation of the current research, future studies should seek to conduct thorough fidelity checks when implementing a MI intervention. These checks would help to observe the extent to which a practitioner adheres to the principles of MI (express empathy, support self-efficacy, roll with resistance and develop discrepancy) and fidelity to the guidance offered within the Facilitating Change 2 programme. It would also be beneficial for future research to investigate the therapeutic skills the practitioner applies during the delivery of MI and the extent to which these skills facilitate the intervention.

Evaluate the Use of MI for Children with Low Cognitive Ability

The current study highlighted that despite being assessed by class teachers as being of average or above average ability a number of the participants struggled to complete activities that required higher order thinking or responses to open ended questions. In addition, three of the participants found the writing demands in some of

the activities difficult to manage. It would be useful for future research to assess whether the MI materials used could be adapted to working with children with lower cognitive ability. This would have implications for both the use of MI in education and in EP casework as the approach would then be suitable for a wider range of children and young people.

Supplementary Qualitative Data

A SCED design was used in an attempt to evaluate whether MI could successfully reduce the frequency of disruptive classroom behaviour, despite the methodological weaknesses inherent in this approach, the research design successfully enabled the researcher to address this question. The researcher acknowledges however, that it would be beneficial if future research could supplement quantitative data with further qualitative information to provide a richer picture regarding the effectiveness of the intervention. For example, conducting interviews or focus groups with both class teachers and parents may help capture information and data on views that was not gathered in the SCED design. This could add rich information to the existing MI evidence base about the factors that support the effective implementation of an MI intervention.

5.12 A Unique Contribution

The findings from the current study add to the currently limited evidence base around the effectiveness of MI in educational settings. In addition, the study is the first to investigate the use of MI with primary aged pupils using a fixed single case experimental design. To the researcher's knowledge, this is the first research which has focused purely on investigating whether MI can be used to improve the behaviour of primary aged pupils. To investigate this both SCED data and pre and post measures were taken.

The current research provides tentative evidence that in certain circumstances, MI can reduce the frequency of disruptive classroom behaviour with carefully selected children. This finding is useful for practitioners as the current study highlights the type of cases that a MI intervention may be suitable for, providing a link between research and EP practice.

5.13 Researcher Reflections

The aim of the current study was to investigate whether MI could effectively be used to improve the disruptive classroom behaviour of primary aged pupils. The researcher wanted to ascertain the impact that a MI intervention could have on observable disruptive behaviours and triangulate this with pre and post measurement data.

Completing this research highlighted to the researcher the difficulties with planning and implementing research within 'real-world' settings such as schools. The researcher had a number of issues to contend with during the study including negotiating TA's timetables, monitoring the number of observations the TAs were able to complete and negotiating with school staff regarding a suitable point in the timetables to extract each participant for their weekly session.

A further reflection surrounds the importance of adhering to the underlying principles associated with therapeutic interventions such as MI. Atkinson's (2012) Facilitating Change 2 intervention provides detailed information and guidance regarding how the intervention should be delivered and gives detailed instructions on how to administer each of the activities. Therefore extensive training and supervision and caution may be needed if therapeutic interventions are to be delivered by school staff who have limited knowledge of counselling and therapeutic techniques.

The researcher acknowledges that, although the findings from the current study suggest that MI can be used effectively to improve the disruptive behaviour in a targeted primary aged pupil population; more robust research is needed to improve the generalisability of the results. Nonetheless, the findings of this research contribute positively to the evidence base surrounding the use of MI with primary aged pupils and has identified some useful next steps for practice and future research in this field.

Chapter 6: Conclusion

This study evaluated whether a 4/5 week MI intervention could be used to improve primary aged pupils' disruptive classroom behaviour. Outcomes from the SCED showed that in three of the cases there was a decrease in overall 'disruptive behaviour' after the MI intervention was introduced.

The study also compared measures of behaviour at two points in time (before and after the MI intervention). Class teachers completed Goodman's (1997) SDQ and total difficulties scores were shown to reduce for each of the participants. In addition, a reduction in scores was observed for each participant on both the conduct and hyperactivity scales.

When considering outcomes, several key limitations to the study's design and implementation should be considered including researcher bias, missing SCED data due to school holiday periods and methodological weaknesses associated with an AB SCED.

Despite its limitations, this study provides tentative findings that MI can be used effectively with primary aged pupils to improve their disruptive classroom behaviour. However, there is clearly a need for further research to replicate these findings in different circumstances, across different settings and a wider population of pupils and practitioners, adopting more rigid experimental designs before firmer conclusions can be drawn and generalised to the wider population. In addition, further exploration of the key therapeutic skills used when implementing interventions such as MI and how successful these skills are in terms of facilitating the process would be beneficial.

References

Alberto, P.A. and Troutman, A.C. (1999) *Applied Behavioural Analysis for teachers.* Merrill Upper Saddle River. NJ.

Atkinson, C. (2005). *Facilitating Change - CD ROM: Using Motivational Interviewing techniques to help young people explore their behaviour*. Bath: Sodapop

Atkinson, C. (2013). *Facilitating Change 2: Motivational Interviewing using the Menu of Strategies (CD: ROM).*Bath: Sodapop.

Atkinson, C., & Amesu, M. (2007). Using solution-focused approaches in motivational interviewing with young people. *Pastoral Care in Education*, *25*(2), 31-37.

Atkinson, C., & Woods, K. (2003). Motivational interviewing strategies for disaffected secondary school students: A case example. *Educational Psychology in Practice*, *19*(1), 49-64.

Atkinson, C., Squires, G., Bragg, J., Muscutt, J., & Wasilewski, D. (2011). Facilitators and barriers to the provision of therapeutic interventions by school psychologists. *School Psychology International*, *35*(4), 384-397.

Association of Teachers and Lecturers (2010). *Association of Teachers and Lecturers Press Release – Annual Conference.* (Online) available at https://www.atl.org.uk/Images/29%20March%202010%20%20ATL%20Behaviour%20Survey%20%20-%20Annual%20Conference%20-%20final.pdf (Accessed 25th November 2015)

Association of Teachers and Lecturers (2011) *Boys' behaviour at school is still more challenging than that of girls, but the behaviour of both is getting worse ATL Press Release London: ATL* (Online) available at https://www.atl.org.uk/Images/15%20April%202011%20-%20Boys%20behaviour%20still%20more%20challeging%20than%20girls%20but%20behaviour%20of%20both%20is%20getting%20worse%20-%20ATL%20annual%20conf%20final.pdf (Accessed 29th November 2015)

.

Audrain-McGovern J, Stevens S, Murray PJ, Kinsman S, Zuckoff A, Pletcher J. (2011) The efficacy of motivational interviewing versus brief advice for adolescent smoking behaviour change. *Pediatrics*, 128, 101-11.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.

Barlow, D., Nock, M., & Hersen, M. (2009). *Single Case Experimental Designs: Strategies for Studying Behaviour Change* (3rd ed.). Boston: Pearson.

Baxter, J., & Frederickson, N. (2005). Every child matters: Can educational psychology contribute to radical reform?. *Educational psychology in Practice*, *21*(2), 87-102.

Bean, M. K., Powell, P., Quinoy, A., Ingersoll, K., Wickham, E. P., & Mazzeo, S. E. (2015). Motivational interviewing targeting diet and physical activity improves adherence to paediatric obesity treatment: results from the MI Values randomized controlled trial. *Paediatric obesity*, *10*(2), 118-125.

Boekaerts, M. (1994). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. *Learning and instruction*, *7*(2), 161-186.

Britt, E., Hudson, S. M., & Blampied, N. M. (2004). Motivational interviewing in health settings: a review. *Patient education and counselling*, *53*(2), 147-155.

Brody, A. E. (2009). Motivational interviewing with a depressed adolescent. *Journal of Clinical Psychology*, *65*(11), 1168-1179.

Brossart, D. F., Parker, R. I., Olson, E. a, & Mahadevan, L. (2006). The relationship between visual analysis and five statistical analyses in a simple AB single-case research design. *Behavior Modification*, *30*, 531–63.

Broussard, C., & Northup, J. (1997). The use of functional analysis to develop peer interventions for disruptive classroom behavior. *School Psychology Quarterly*, *12*(1), 65.

Cameron, R. J. (2006). Educational psychology: The distinctive contribution. *Educational Psychology in Practice*, *22*(4), 289-304.

Cohen, L., Manion, L., & Morrison, K. (2009). *Research Methods in Education* (6th ed.). Oxon: Routledge.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-Experimentation: Design and Analysis Issues for Field Settings*. Chicago: Rand McNally.

Covington, M. V. (1992). *Making the grade: A self-worth perspective on motivation and school reform*. Cambridge University Press.

Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual review of psychology*, *51*(1), 171-200.

Crosbie, J. (1993). Interrupted time-series analysis with brief single-subject data. *Journal of Consulting and Clinical Psychology*, *61*, 966–974.

Cryer, S. (2012). Exploration of the use of Motivational Interviewing with disengaged primary aged children. (Unpublished Doctoral Thesis). University of Manchester. Retrieved from: https://www.escholar.manchester.ac.uk/api/datastream?publicationPid=uk-ac-man-scw:205371&datastreamId=FULL-TEXT.PDF

Cryer, S., & Atkinson, C. (2015). Exploring the use of Motivational Interviewing with a disengaged primary-aged child. *Educational Psychology in Practice*, 37–41

DeProspero, A., & Cohen, S. (1979). Inconsistent visual analyses of intra-subject data. *Journal of Applied Behaviour Analysis*, *12*(4), 573-579.

Davoli, A. M., Broccoli, S., Bonvicini, L., Fabbri, A., Ferrari, E., D'Angelo, S.,& Rossi, P. G. (2013). Paediatrician-led motivational interviewing to treat overweight children: An RCT. *Paediatrics*, *132*(5), 1236-1246.

Department for Education and Skills (2005). *Primary National Strategy. Focusing on Solutions: A Positive Approach to Improving Behaviour*. London: HMSO.

Evans, J., Harden, A., & Thomas, J. (2004). What are effective strategies to support pupils with emotional and behavioural difficulties (EBD) in mainstream primary schools? Findings from a systematic review of research. *Journal of Research in Special Educational Needs*, *4*(1), 2-16.

Flattum, C., Friend, S., Neumark-Sztainer, D., & Story, M. (2009). Motivational interviewing as a component of a school-based obesity prevention program for adolescent girls. *Journal of the American Dietetic Association*, *109*(1), 91-94.

Frey, A. J., Cloud, R. N., Lee, J., Small, J. W., Seeley, J. R., Feil, E. G., ... & Golly, A. (2011). The promise of motivational interviewing in school mental health. *School Mental Health*, *3*(1), 1-12.

Frey, A. J., Lee, J., Small, J. W., Seeley, J. R., Walker, H. M., & Feil, E. G. (2013). The Motivational Interviewing Navigation Guide: a process for enhancing teachers' motivation to adopt and implement school-based interventions. *Advances in School Mental Health Promotion*, *6*(3), 158-173.

Garner, P. W. (2010). Emotional competence and its influences on teaching and learning. *Educational Psychology Review*, *22*(3), 297-321.

Gast, D. L., & Spriggs, A. D. (2010). Visual analysis of graphic data. *Single subject research methodology in behavioural sciences*, 199-233.

Gilder, D. A., Luna, J. A., Calac, D., Moore, R. S., Monti, P. M., & Ehlers, C. L. (2011). Acceptability of the use of motivational interviewing to reduce underage drinking in a Native American community. *Substance use & misuse*, *46*(6), 836-842.

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of child psychology and psychiatry*, *38*(5), 581-586.

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(11), 1337-1345.

Guba, E. G., & Lincoln, Y. S. (2000). Epistemological and methodological bases of naturalistic inquiry. In *Evaluation models* (pp. 363-381). Springer Netherlands.

Hettema, J., Steele, J., & Miller, W. (2005) Motivational Interviewing. Annual Review of Clinical Psychology, 1, 91-111.

Hersen, M., & Barlow, D. H. (1976). Single case experimental designs: Strategies for studying behavior change. New York: Pergamon Press.

Heyvaert, M., & Onghena, P. (2014). Randomization tests for single-case experiments: State of the art, state of the science, and state of the application. *Journal of Contextual Behavioural Science, 3,* 51–64.

Hohman, M., Pierce, P., & Barnett, E. (2015). Motivational Interviewing: An Evidence-Based Practice for Improving Student Practice Skills. *Journal of Social Work Education*, *51*(2), 287-297.

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71,* 165–179.

Houle, T. T. (2009). Statistical Analyses for Single-Case Experimental Designs. In D. H. Barlow, M. K. Nock, & M. Hersen (Eds.), *Single Case Experimental Designs: Strategies for Studying Behaviour Change* (3rd ed.). Boston: Pearson Education.

Iarussi, M. M. (2013). Examining How Motivational Interviewing May Foster College Student Development. *Journal of College Counselling*, *16*(2), 158-175.

Jensen, C. D., Cushing, C. C., Aylward, B. S., Craig, J. T., Sorell, D. M., & Steele, R. G. (2011). Effectiveness of motivational interviewing interventions for adolescent substance use behavior change: a meta-analytic review.*Journal of consulting and clinical psychology*, *79*(4), 433.

Juhnke, B. A., Juhnke, G. A., Curtis, R. C., Thompson, E. H., Coll, K. M., Yu, F., ... & Mullett, A. (2013). Using Motivational Interviewing With School-Age Bullies: A New Use for a Proven, Evidence-Based Intervention. *Journal of School Counseling*, *11*(14), n14

Horvath, A. O. (2006). The alliance in context: Accomplishments, challenges, and future directions. *Psychotherapy: Theory, Research, Practice, Training*,*43*(3), 258.

Karver, M. S., Handelsman, J. B., Fields, S., & Bickman, L. (2006). Meta-analysis of therapeutic relationship variables in youth and family therapy: The evidence for different relationship variables in the child and adolescent treatment outcome literature. *Clinical psychology review*, *26*(1), 50-65.

Kazdin, A. E. (1976). Statistical analyses for single-case experimental designs. *Single-case experimental designs: Strategies for studying behaviour change*, 265-316.

Kazdin, A. E. (1982). *Single-case research designs: Methods for clinical and applied settings*. New York: Oxford University Press.

Kazdin, A. E. (1984). Acceptability of aversive procedures and medication as treatment alternatives for deviant child behaviour. *Journal of Abnormal Child Psychology*, *12*(2), 289-301.

Kazdin, A. E. (2003). *Research Designs in Clinical Psychology* (Fourth.). Boston: Allyn and Bacon.

Kittles, M., & Atkinson, C. (2009). The usefulness of motivational interviewing as a consultation and assessment tool for working with young people. *Pastoral Care in Education*, *27*(3), 241-254.

Kleinginna, P., Jr., & Kleinginna A. (1981). A categorized list of motivation definitions, with suggestions for a consensual definition. *Motivation and Emotion, 5*, 263-291.

Knight, K. M., McGowan, L., Dickens, C., & Bundy, C. (2006). A systematic review of motivational interviewing in physical health care settings. *British journal of health psychology*, *11*(2), 319-332.

Kratochwill, T. R., Hitchcock, J. H., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education*, *34*, 26–38.

Krupnick, J. L., Sotsky, S. M., Simmens, S., Moyer, J., Elkin, I., Watkins, J., & Pilkonis, P. A. (1996). The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: findings in the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of consulting and clinical psychology*, *64*(3), 532.

Lambert, M. J., & Barley, D. E. (2001). Research summary on the therapeutic relationship and psychotherapy outcome. *Psychotherapy: Theory, research, practice, training*, *38*(4), 357.

Lambert, M. J., & Barley, D. E. (2002). Psychotherapy relationships that work: Therapist contributions and responsiveness to patients. *Research summary on the therapeutic relationship and psychotherapy outcome*, 17-32.

Lau, S., & Roeser, R. W. (2002). Cognitive abilities and motivational processes in high school students' situational engagement and achievement in science. *Educational Assessment*, *8*(2), 139-162.

Lawendowski, L. A. (1998). A motivational intervention for adolescent smokers. *Preventive medicine*, *27*(5), A39-A46.

Lewis, T. F., & Osborn, C. J. (2004). Solution-focused counseling and motivational interviewing: A consideration of confluence. *Journal of Counseling & Development*, *82*(1), 38-48.

Liem, A. D., Lau, S., & Nie, Y. (2008). The role of self-efficacy, task value, and achievement goals in predicting learning strategies, task disengagement, peer relationship, and achievement outcome. *Contemporary Educational Psychology*,*33*(4), 486-512.

Lundahl, B. W., & Burke, B. L. (2009) The effectiveness and applicability of motivational interviewing: A practice-friendly review of four meta-analyses. Journal of Clinical Psychology: In session, 65, 1232-1245.

Lundahl, B., Moleni, T., Burke, B. L., Butters, R., Tollefson, D., Butler, C., & Rollnick, S. (2013). Motivational interviewing in medical care settings: a systematic review and meta-analysis of randomized controlled trials. *Patient education and counselling*, *93*(2), 157-168

MacKay, T. A. W. N. (2007). Educational psychology: The fall and rise of therapy. *Educational and Child Psychology*, *24*, 7-13

Maehr, M. L., & Zusho, A. (2009). Achievement goal theory. *Handbook of motivation at school*, 77-104.

McCambridge, J., & Strang, J. (2004). The efficacy of single-session motivational interviewing in reducing drug consumption and perceptions of drug-related risk and harm among young people: results from a multi-site cluster randomized trial. *Addiction*, *99*(1), 39-52.

McCormick, S. (1995). What is single-subject experimental research? In S. B. Neuman & S. McCormick (Eds.), *Single-Subject Experimental Research: Applications for Literacy*. Newark: International Reading Association.

McNamara, E. (2009) *Motivational Interviewing: theory, practice and applications with children and young people*. Ainsdale: Merseyside, Positive Behaviour Management.

McNamara, E. (2014) *Motivational Interviewing: theory, practice and applications with children and young people II: Issues and further applications*. Ainsdale: Merseyside, Positive Behaviour Management

Mertens, D. M. (2015). *Research and Evaluation in Education and Psychology* (Fourth.). London: SAGE Publications.

Miller, W. R. (1983). Motivational interviewing with problem drinkers. *Behavioural psychotherapy*, *11*(02), 147-172.

Miller, W. R., & Rollnick, S. (2002) Motivational Interviewing: preparing people for change. New York: Guilford Press.

Miller, W. R., & Rollnick, S. (2009). Ten things that motivational interviewing is not. *Behavioural and cognitive psychotherapy*, *37*(02), 129-140.

Morgan, D. L., & Morgan, R. K. (2008). *Single-case research methods for the behavioral and health sciences*. Sage publications.

Neill, S. (2001). *Unacceptable Pupil Behaviour: A Survey Analysed for the National Union of Teachers: Y The University of Warwick, Institute of Education, Teacher Research & Development Unit*. University of Warwick, Institute of Education, Teacher Research and Development Unit.

Norcross, J. C. (2002). *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients*. Oxford University Press.

Ofsted (2014) *Below the radar: low-level disruption in the country's classrooms*, Ofsted, September 2014 [online]. Available at bit.ly/YGOF2014 (Accessed 15th January 2016)

Parker, R. I., Vannest, K. J., & Brown, L. (2009). The improvement rate difference for single-case research. *Exceptional Children*, *75*, 135–150.

Parker, R. I., Hagan-Burke, S., & Vannest, K. (2007). Percentage of all non-overlapping data (PAND) an alternative to PND. *The Journal of Special Education*, *40*(4), 194-204.

Parsonson, B. S., & Baer, D. M. (1978). The analysis and presentation of graphic data. *Single-subject research: Strategies for evaluating change*, 105-165.

Powell, S.(2004). *A systematic review of how theories explain learning behaviour in school contexts*. EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

Prochaska, J. O., & DiClemente, C. C. (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, research & practice*, *19*(3), 276.

Reichardt, C. S., & Rallis, S. F. (1994). The relationship between the qualitative and quantitative research traditions. *New Directions for Program Evaluation*, *1994*(61), 5-11.

Renwick, F., & Spalding, B. (2002). Research Section:'A Quiet Place'Project: an of Early Therapeutic Intervention within Mainstream Schools. *British Journal of Special Education*, *29*(3), 144-150.

Rizvi, S. L., & Nock, M. K. (2008). Single-Case Experimental Designs for the Evaluation of Treatments for Self-Injurious and Suicidal Behaviours. *Suicide and life-threatening behaviour*, *38*(5), 498-510.

Robson, C. (2002). *Real World Research* (3rd ed.). Chichester: Wiley.

Rollnick, S., Heather.N., Bell, A. (1992). Negotiating behaviour change in medical settings: The development of brief motivational interviewing. Journal of Mental Health. 1, 25-37.

Rollnick, S., & Miller, W. R. (1995). What is motivational interviewing?.*Behavioural and cognitive Psychotherapy*, *23*(04), 325-334.

Rubak, S., Sandbæk, A., Lauritzen, T., & Christensen, B. (2005). Motivational interviewing: a systematic review and meta-analysis. *British Journal of General Practice*, *55*(513), 305-312.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, *25*(1), 54-67.

Shirk, S. R., & Karver, M. (2003). Prediction of treatment outcome from relationship variables in child and adolescent therapy: a meta-analytic review.*Journal of consulting and clinical psychology*, *71*(3), 452.

Siegel, S., & Castellan, N. J. (1988). Nonparametric statistics for the behavioral sciences (2nd ed.). Boston: McGraw-Hill.

Smith, J. D. (2012). Single-case experimental designs: a systematic review of published research and current standards. *Psychological Methods*, *17*, 510–550.

Snape, L., & Atkinson, C. (2015). Exploring and challenging pupil disaffection: an evaluation of a motivational interviewing-based intervention delivered by paraprofessionals. *Pastoral Care in Education*, 1-14.

Soderland, L.L., Nordqvist, C., Angbratt, M., Nilsen, P. (2008) Applying motivational interviewing to counselling overweight and obese children. *Health Education Research*, 24(3), 442-449.

Stallard, P., Udwin, O., Goddard, M. & Hibbert, S. (2007). The availability of cognitive behaviour therapy within specialist child and adolescent mental health services (CAMHS): A national survey. Behavioural and Cognitive Psychotherapy, 35(4), 501-505.

Stoiber, K. C., & Waas, G. A. (2002). A contextual and methodological perspective on the evidence-based movement within school psychology in the United States. *Educational and Child Psychology*.

Tober, G. (1991). Motivational interviewing with young people. *Motivational interviewing: preparing people to change addictive behaviour*, 248-259.

Van Roy, B., Veenstra, M., & Clench-Aas, J. (2008). Construct validity of the five-factor Strengths and Difficulties Questionnaire (SDQ) in pre-, early, and late adolescence. *Journal of Child Psychology and Psychiatry*, *49*(12), 1304-1312.

.VanBuskirk, K. A., & Wetherell, J. L. (2014). Motivational interviewing with primary care populations: a systematic review and meta-analysis. *Journal of behavioural medicine*, *37*(4), 768-780.

Walpole, B., Dettmer, E., Morrongiello, B. A., McCrindle, B. W., & Hamilton, J. (2013). Motivational interviewing to enhance self-efficacy and promote weight loss in overweight and obese adolescents: a randomized controlled trial. *Journal of paediatric psychology*, *38*(9), 944-953.

Watkins, C., & Wagner, P. (2000). *Improving school behaviour*. Sage.

Wells, H., Jones, A., & Jones, S. C. (2014). Teaching reluctant students: using the principles and techniques of motivational interviewing to foster better student–teacher interactions. *Innovations in Education and Teaching International*, *51*(2), 175-184.

Wheldall, K., & Merrett, F.E. (1988). Which classroom behaviours do primary school teachers say they find most troublesome? *Educational Review*, 40, 13–17.

Wilson, S; Benton, T; Scott, E and Kendall, L (2007) London Challenge: survey of Pupils and Teachers 2006 Department for Education and Skills Research Report. Accessed via: http://publications.education.gov.uk/eOrderingDownload/RR823.pdf

Wong, E. M., & Cheng, M. M. (2013). Effects of motivational interviewing to promote weight loss in obese children. *Journal of clinical nursing*, *22*(17-18), 2519-2530.

World Health Organisation (2003). Caring for children and adolescents with mental health disorders. Geneva: WHO.

Yeo, L.S. & Choi, P.M. (2011). Cognitive-behavioural therapy for children with behavioural difficulties in the Singapore mainstream school setting. *School Psychology International*, 32(6), 616–631.

Appendix 1

Aims and Overview of the Facilitating Change 2 Intervention

Atkinson's (2012) Facilitating Change 2 materials have been designed to be used flexibly depending on the needs of the individual. The information presented below highlights the aims of each of the different sections of the intervention and describes the activities that will be completed with a typical participant.

Section 1: Opening Discussion

Aims:

- To build rapport with the young person
- To collect information about the young person in context
- To find out information about the young person's preferences and achievements.

To record this information in a way appropriate for both the researcher and the young person, activity sheets will be used as prompts.

Activity 1a(i) Skills Profile

The young person will be shown a sheet with lots of different skills. They will be asked to circle the ten words/phrases that describe them best.

Activity 1a(ii)

During this activity the young person will be encouraged to plot their responses from activity 1a(i) onto a skills profile which has been divided up into different categories. The purpose of this activity is to look at the areas in which the young person is particularly 'smart'.

Activity 1b(i)

This activity, following on from the skills profile, aims to elicit further information from the young person. The young person will be presented with an 'opening discussion sheet' which prompts them to identify/discuss:

- What they do at school
- What they do in their spare time
- Their family

- Their friends
- Their likes and dislikes

Activity 1b(ii)

This sheet provides the young person with the opportunity to discuss or record other areas that are not covered on the first sheet.

Section 2: A typical day/my lessons

Aims:

- To continue to develop rapport with the young person
- To find out information about the young person's life, in or outside of school
- To discuss factors that may be contributing to their difficulties.
- To identify if the young person is unconcerned about aspects of their behaviour.

Activity 2a(i)

To complete this activity the young person will be asked to remember a really good day (not necessarily at school). Using activity sheet 2a(i) as a prompt the young person will be asked to describe the day right from the time they get up in the morning.

Activity 2a(ii)

Using activity sheet 2a(ii) the young person will then be asked to think of a recent day that was not so good. They will then be asked to describe the day right from the beginning.

When both activity 2a(i) and 2a(ii) sheets have been completed they will be placed side by side and the young person will be asked to consider the differences between the good and not so good days.

Note: if the young person finds it difficult to identify a good/not so good day, the time period can be shortened (e.g. describe a good morning, a good lesson etc).

Activity 2b(i)

Using an activity sheet the young person will be asked to circle different lessons in turn, according to whether it is a 'good lesson' an 'ok lesson' or a 'not so good

lesson'. When the young person has completed this activity they will be asked to identify which of the 'good lessons' is their favourite. This will be recorded on activity sheet **2b(ii).** The same will be completed for the young person's least favourite lesson.

Activity 2b(iii)

The young person will be asked to explore their behaviour from a third party perspective. They will be asked to imagine how their behaviour would look to someone watching a video of them in their favourite and least favourite lesson. If the young person finds this difficult the following prompts will be used:

- What sort of things would you be doing in the lesson?
- How would you be getting on with the teacher?
- What sort of tasks would you be doing?
- How would you be feeling?

Section 3: The good things and the less good things

Aims:

- To find out important information about behaviour that might be of concern to the young person.
- To allow the young person to explore their behaviour and identify potential problem areas.
- To ascertain the young person's readiness for change. .

During this session the researcher will provide examples of a behaviour for which there may be good things and less good things (e.g truanting from school). The researcher will then work with the young person to identify the good things and the less good things about a behaviour that they display.

Note: if the young person has raised this either directly/indirectly the following script will be used: e.g. "last week you mentioned about your (problem behaviour). I wonder if we could explore this a little bit more".

If the concern has been expressed by a third party this will be handled sensitively. A possible script might be "part of the reason we've been meeting is that some of your teachers are worried about your (problem behaviour) and the effect it might be having on your time at school. Would it be ok to talk a little bit about it today?"

If the young person is still resistant at this point this strategy is unlikely to be appropriate and may damage rapport. Instead it will be suggested by the researcher that this discussion will be returned to at a later time.

Activity 3a

Using this sheet the young person will be asked "what are some of the good things about (problem behaviour)?" These responses will then be recorded on the activity sheet. The young person will then be asked "what are some of the less good things about (problem behaviour)?"

Activity 3b

This is a scaling activity which encourages the young person to think about change. The young person will be asked to mark on a scale how much they are wanting to change their behaviour and how difficult they think this change would be. This activity can then be repeated during further sessions and any changes in motivation can be discussed.

Section 4: Providing information

Aims:

- To provide potentially useful information in a sensitive manner
- To help develop a young person's knowledge/concern about a particular problem.

Note: unlike other strategies 'Providing information' is not a stand alone activity, instead it will be used when an opportunity is spotted by the researcher (e.g. when the young person raises a query or expresses concern about the impact of their behaviour).

Information will be provided in a neutral/non personal way (e.g. what other people have done rather than the young person themselves). After any information has been given the young person will be asked what they think of the information that has been provided and whether there is any more information/support that would be helpful to them.

An optional activity sheet will be used if applicable to record this discussion.

Section 5: The future and the present

Aims:

- To support the young person in identifying future aspirations and lifestyle preferences.
- To discuss how current patterns of behaviour may impinge on these chosen goals.
- To identify how the young person can be supported in working towards their future plans.

Activity 5a

The young person will be presented with activity sheet 5a, this will be used as a prompt to encourage the young person to think about their future. The young person will be asked to think about a behaviour that is causing concern and then to think about what might happen as a consequence of the behaviour occurring (this could be positive or negative). The young person will then be asked to plot an alternative pathway for if the behaviour were to change.

Activity 5b

This activity can be used in conjunction with activity 5a. It encourages the young person to think about their future. It focuses on relationships, jobs, lifestyle and hobbies. The young person will be asked to pick a date in the future (e.g. 5 years ahead) and will be asked to think about where they feel they would like to be at that time if things were to go well for them.

Section 6: Exploring concerns

Aims:

- To help the young person to identify and explore any concerns they may have about their behaviour.
- To allow the young person to consider the behaviour in question in relation to the Model of Stages of Change.
- To allow the researcher the opportunity to listen carefully to the young person's concerns and to try and 'nudge' the young person forward, perhaps to a different stage of change.

Drawing on previous discussions the young person will be asked to identify a behaviour that might be causing them some concern. This behaviour will then be recorded on **activity sheet 6a.** This sheet encourages the young person to think about other people who might be concerned about the behaviour e.g. adults, family, friends. The concerns that these other people might have will then be recorded in thought bubbles presented on activity sheet 6a.

Activity 6b

The young person's statements from activity 6a will be transferred on to the boxes on activity 6b(ii). The young person will then be asked to rank each of the statements from 0, which means 'Not important at all' right through to 5, which means 'Very important'. The young person will be asked to place each of the statements on the scale. The young person and the researcher will then look at the concerns together and each will be explored further with the young person using questions such as "why is this such an important concern?", "what concerns you most about that?" or "is there anyone else who would share this concern?"

Activity 6c

This activity introduces the young person to the Wheel of Change. The researcher will explain that this diagram shows that people go through a series of stages when trying to change their behaviour. the researcher will tell the young person that they have an activity to help them become familiar with the 'wheel' and the stages of change. The researcher will read aloud a case study (which features either male or female characters). The young person will be asked to listen to the story all the way through and think about the young person and the stages of change. The young person will be encouraged to think about and identify the stage that the fictional character is at at different points in the story.

Activity 6d

The young person will be asked to have a look at the Wheel of Change. The researcher will then read a number of statements and the young person will be asked to think about where, in each case, the young person might be in relation to the Wheel of Change.

Section 7: Help with decision making

Aims:

- To revisit the young person's skill set (explored during session 1) and explore how these skills may be useful in promoting the young person's self-efficacy and self-esteem.
- To allow the young person who has expressed an interest in changing their behaviour to think about goals and sub goals (goals that help the main goal to be achieved) that might be useful.
- To offer the young person who might wish to change their behaviour an effective strategy for doing so.
- To offer the young person who has intention of change an opportunity to spot signs of possible 'relapse' and to put in place a plan in case resolutions to change break down.
- To allow the researcher the opportunity to listen carefully to the young person's concerns and to try and 'nudge' the young person forward, perhaps to a different stage of change.

Activity 7a

The skills profile completed during session 1 will be shared again with the young person. Activity 7a asks the young person to identify something they enjoy doing (this will be recorded in a column on the sheet). The young person will then be asked to identify some of the skills they need when participating in this activity (these will be recorded in column 2). In the third column the young person will be asked to identify why these are important within the context of the preferred activity. Next, the researcher will record what other strengths and resources the young person needs to demonstrate these skills (recorded in column 4).

Activity 7b

This activity encourages the young person to think about the concerns they have explored in previous sections and to try and think of a goal they would like to achieve. The young person is asked to explore ways in which they could achieve this goal. This information is recorded on a 'target' (activity 7b worksheet). The young person will be asked to identify potential sub goals which might enable them to achieve their overall goal.

Activity 7c

This activity explores in more detail strategies that the young person could put in place to enable them to achieve their goal. The young person will also be encouraged to think about how they will gain the opportunity to practice or rehearse their identified strategies.

Activity 7d

This activity is designed for young people who have been able to implement some sort of behaviour change. It offers them the opportunity to review the progress they have made in relation to goals and also how to move to the next stage of change and how to avoid relapse. The activity has three versions. Activities 7d(i) and 7d(ii) can be used as one off review activities. These will enable the young person to identify how they are doing and also asks them to identify what might happen if they were to slip back and also what might need to happen for them to move forward.

Activity 7d(iii) is a scaling sheet that can be used on a regular basis to monitor how the young person is getting on in relation to achieving their goals.

Activity 7e

The purpose of this activity is to put a plan in place in case the young person 'relapses' and returns to their previous behaviour. The young person will be reminded that change can be a long and difficult process and that completing this activity is giving them an opportunity to think about what might be useful to them. The young person's goals will be listed at the top of the page and a number of questions/prompts will be worked through. These prompts include:

- How am I starting to slip back?
- Who will I let know and how will I tell them?
- If things go a bit wrong with trying to change what would I like to happen?

Activity 7f

Note: this activity will only be appropriate to complete if the young person has relapsed.

Activity 7f consists of a prompt sheet which aims to encourage the young person to reflect upon reasons for their relapse. These prompts include:

- What happened when I relapsed?
- What am I doing to stop things from getting worse?
- What are other people doing to stop it getting worse?
- Who can help and how?

Appendix 2

School Information Letter

School of Psychology

Information Sheet

***Title of Project*:** Is Motivational Interviewing an effective intervention for improving the classroom behaviour of primary aged pupils?

***Insert Ethics Approval Number or Taught Project Archive Number**:*

***Researcher**:* Charlotte Mahon

***Supervisors**:* Nick Durbin

***Contact Details**:* Nick.Durbin@nottingham.ac.uk lpxcm9@nottingam.ac.uk

Dear Head teacher,

My name is Charlotte Mahon and I am a Trainee Educational Psychologist currently on placement in Derby City whilst I complete my Doctorate level training at the University of Nottingham. As part of my university research I am hoping to set up and run a project around the use of Motivational Interviewing (MI) in primary school settings.

Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is Motivational Interviewing (MI)?

MI is a counselling technique that is person-centered and aims to motivate people to change their behaviour. A unique aspect of the approach is that it is based on the

assumption that many individuals who enter therapy are not at a stage where they are ready to change their behaviour. MI does not assume that a person is ready to change their behaviour on entry to therapy, instead it focuses on encouraging a person to explore their ambivalence towards change.

What would the research involve?

I would like to deliver a 6 week MI intervention in your school on a 1:1 basis. These sessions would be weekly and last for approximately 40 minutes. To evaluate the effectiveness of this intervention I would like to record weekly observational measures of participants class room behaviour.

The weekly MI sessions will involve participant's completing a number of activities focused on building a rapport, collecting information on the participant's likes and dislikes, exploring their behaviour and discussing strategies for change. A thorough overview of each of the planned sessions will be shared with school staff should you agree to participate in the research.

How many participants will be required?

I am looking to recruit approximately 6 participants from three local primary schools.

The participants should...

- Be in year 5
- Show disruptive behaviour **frequently** (e.g. more than once every 15 minutes)
- Display disruptive, observable classroom behaviour during lessons
- **Not** have a diagnosis of an Autistic Spectrum Condition
- Not have severe learning difficulty
- Be responsive to 1:1 working.

If you feel that you have some children in year 5 who would benefit from this intervention and who meet the inclusion criteria I would like to carry out a semi-structured interview with their class teacher to ascertain their suitability for the intervention. After this initial stage, if appropriate, I will contact parents and invite them to an information sharing session where any questions can be asked and if

parents are happy informed consent can be gained for their child to participate in the research.

The MI will be delivered by myself. To evaluate the efficacy of the intervention a weekly observational measure will be taken. This will involve completing an individual observation schedule which will contain a number of pre-coded behaviours. If these behaviours are observed during the observation period they will be recorded on the sheet. I am hoping that for efficiency and consistency this weekly measure could be completed by school staff. I will oversee this process and provide full training. I also hope to carry out some joint observations with other members of the Educational Psychology Team to offer support to school staff.

I would also support the class teachers of the children who participate in the research to complete a short behaviour screening questionnaire at two points throughout the data collection period.

When would the intervention need to start?

I am hoping to start collecting data during the Summer term. The research design I plan to implement is a Single Case Experimental Design. This design involves a baseline period (approximately 6 weeks) where the participants receive no intervention but the weekly observational measure will be taken. The purpose of this baseline period is to gather a set of stable data points so the efficacy of the MI intervention can be assessed when it is introduced. At the end of the baseline phase the intervention phase is introduced. This is when the participants will receive the weekly MI sessions alongside the weekly observational measure. It is envisaged that your schools involvement in the research will end during the final week of the summer term. The research will take place for a total of 12 weeks.

Participation in this study is totally voluntary and you are under no obligation to take part. You are free to withdraw at any point before or during the study. All data collected will be kept confidential and used for research purposes only. It will be stored in compliance with the Data Protection Act.

I hope this letter has provided you with an overview of my research and what I would like to do. If you have any issues or questions please do not hesitate to contact

me. I am happy to come into school to talk to you/relevant school staff further at a convenient time for you.

I look forward to hearing from you soon.

Charlotte Mahon

Trainee Educational Psychologist

Contact details:

Email: lpxcm9@nottingham.ac.uk

If you have any complaints about the study, please contact:

Stephen Jackson (Chair of Ethics Committee)

stephen.jackson@nottingham.ac.uk

Appendix 3

Semi Structured Interview

Staff member's name:

Staff member's role:

Child discussing:

Child's class:

Introduction (to be spoken by the researcher)

Hi, my name is Charlotte Mahon and I am a Trainee Educational Psychologist currently on placement in (insert placement authority) whilst completing my Doctorate training at the University of Nottingham. As part of my university research I am hoping to set up and run a research project around Motivational Interviewing in primary school settings. Motivational Interviewing has been shown to be an effective intervention for improving school attendance, behaviour and engagement with learning in secondary school settings but to date there is no published research examining its effectiveness within primary school setting. I am hoping to examine whether a 5 week motivational interviewing intervention can improve disruptive classroom behaviour (calling out, refusing to engage in learning tasks etc). I am hoping to do this through the use of a weekly observational measure and a behaviour screening questionnaire which will be completed by all participants' class teachers both before and at the end of the intervention period.

Through initial discussions with your schools SENCO, Head Teacher and EP Child A has been identified as a potential participant for this research. The purpose of this interview is to gather information about Child A, specifically around their behaviour in class, in order for me to ascertain their suitability to be involved in the research. If appropriate, this information will be used for me to create an individual observation schedule for Child A around specific target behaviours. I plan to triangulate the information you give, with my own observations and information gathered from school documentation and held by the Educational Psychology Service. As Child's A class teacher I would really value your contribution to this research.

Interview Questions

1) How does Child A generally behave in class? Can you describe his behaviour in detail?

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2) When do these behaviours most often occur in school? (Particular lessons, unstructured times, lunchtimes etc.)

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3) How frequently do these disruptive behaviours occur?

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4) How long has Child A been behaving like this?

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5) Is child A currently receiving any additional support to help to manage their behaviour?

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6) Generally, does Child A have positive relationships with adults in school?

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.....
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7) What literacy level is Child A currently working at?

.....

8) Do you think Child A will be responsive to 1:1 working with an unfamiliar adult?

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.....

9) Finally, do you have any concerns about Child A engaging in the research?

.....
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.....
.....

At the end of the interview interviewer to feedback a summary of the information that has been provided and check with the interviewee that they have understood what they have said correctly.

Appendix 4

Example Observation Schedule

Childs name:

Year group:

Observer:

<u>The following behaviours will be the focus for this observation</u>

- Shouting out (using the code SO)
- Distracting peers (using the code DP)
- Arguing with school staff (using the code AS)
- Refusing to complete learning tasks (using the code R)

Day and time to be observed each week: Friday's, 9.45-10.15

Length of observation: Record every **two minutes** for the 30 minute period. Please record the codes of any of the above behaviours observed.

Time	Behaviour observed (code)	Comments (optional)
2nd minute	SO, R	
4th minute	R	
6th minute	DP, SO	
8th minute	R	
10th minute	AS, DP	
etc		

Appendix 5

Research Log Example

Participant's Name: Oscar

Session Number	Activities Completed	Responses/Comments
1	1a (i) Words that describe me 1a (ii) My Skills Profile 1b (i) Opening discussion 2a (i) A good day 2a (ii) A not so good day	Oscar was happy to come out of class and work with the researcher. He presented as being quiet and shy but did engage well with all activities presented to him today. Initially Oscar struggled to think of a not so good day, possibly because he was not prepared at this point to admit that at times he gets into trouble for his behaviour.
2	2b (i) My lessons 2b (ii) Favourite and least favourite lessons 2b (iii) What would someone see? 3a The good things and the less good things 3b Weighing things up	Oscar appeared more relaxed and chatty today. He spoke freely about the lessons he enjoys and the lessons he feels are 'boring'. Oscar was also able to identify what it is about particular lessons that he enjoys (e.g. working with peers, being practical, group work) The 'what would someone see' activity was very enlightening as Oscar was able to express that he knows he can misbehave in his least favourite lessons and could effectively make comparisons between his 'good' lessons and his 'not so good lessons' Oscar found it difficult to identify 'the good things and

		the less good things' about his behaviour (focusing on shouting out and talking in class). Researcher queries whether this is due to his cognitive/verbal/language skills? This task did require some higher order thinking. Needed a lot of facilitation to complete this activity.
3	3c Scaling – thinking about change 5a The future and the present 5b Looking to the future 6a Exploring concerns	Oscar appeared more confident today. He reported that he had had a good week but had been sent out of class twice for 'poor behaviour'. Oscar indicated that currently he would place himself at 5 (out of 10) regarding wanting to change his behaviour. Oscar appeared to enjoy the 'looking to the future' activities and responded well to these. Oscar found the 'exploring concerns' activity challenging, particularly in terms of identifying concerns adults might have. Due to lack of awareness or reluctance to admit concerns?
4	6c (i) The Wheel of Change 6c (ii) Jordan's Story 6d (i) Ready for change cards 7a Using my skills 7c My strategy 6d (i) How am I doing?	Oscar responded positively to the wheel of change and engaged with Jordan's story, asking questions and identifying the different stages Jordan was at throughout the story. Sorted change cards quickly and confidently and could articulate why he had placed cards in the different stages.

		Oscar was able to come up with 3 strategies independently (working towards the goal 'to get more work done') and with support could suggest what might happen if he was able to consistently use these strategies. Oscar identified that he believes he is at stage 5 of the change model (maintaining) and could tell the researcher what he felt might happen if he began to slip back and how this might make him feel.
5	Reviewed activity 6 c and Jordan's story. Reviewed activity 7c (my strategy) 7d (ii) How am I doing? 7d (iii) How am I doing- Monitoring goals 7e Just in case (a plan) 7f Stopping and thinking (just highlighted this to Oscar, we did not complete it)	Oscar remembered the change model and Jordan's story. Oscar highlighted that he was happy with his strategies and did not want to make any amendments. Oscar indicated that he feels as if his behaviour has improved since Oscartmas and that he is much better behaved now than he was in year 4. Oscar rated himself as a 10 (out of 10) regarding how he is currently doing regarding change. Oscar needed a lot of facilitation to complete activity 7e but did have a number of ideas regarding how he would know if he began to slip back (e.g. feeling unhappy, an increase in warnings, not doing any

		work) We discussed activity 7f and linked it back to the Change model to highlight that change is difficult and that relapse is likely. Oscar reported that he would complete this activity with his class teacher if he felt that his behaviour was slipping back.

Appendix 6

Ethical Approval Letter

SJ/WB

Ref: 641R

Wednesday, 1 April 2015

Dear Charlotte Mahon & Nick Durbin,

Ethics Committee Review

Thank you for submitting an account of your proposed research 'Is Motivational Interviewing an effective intervention for improving the behaviour of primary aged pupils?'

That proposal has now been reviewed and we are pleased to tell you it has met with the Committee's approval.

However:

Please note the following comments from our reviewers;

The School consent form is still not referred to in letter to school – would seem polite to request that they complete it. The format of the consent form itself is not entirely appropriate – questions need to be tailored to the context (e.g. "I agree for MY SCHOOL to take part in the study"; "I agree for THE data from this study…")

The wording of the pupil consent form could be a bit more age appropriate – (i.e. the following may be rather complex "I give permission for my data from this study to be shared with other researchers provided that my anonymity is completely protected.")

Final responsibility for ethical conduct of your research rests with you or your supervisor. The Codes of Practice setting out these responsibilities have been published by the British Psychological Society and the University Research Ethics Committee. If you have any concerns whatever during the conduct of your research then you should consult those

Codes of Practice. The Committee should be informed immediately should any participant complaints or adverse events arise during the study.

Independently of the Ethics Committee procedures, supervisors also have responsibilities for the risk assessment of projects as detailed in the safety pages of the University web site. Ethics Committee approval does not alter, replace, or remove those responsibilities, nor does it certify that they have been met.

Yours sincerely

Professor Stephen Jackson

Chair, Ethics Committee

Appendix 7

Parent Consent Form

The University of Nottingham

UNITED KINGDOM · CHINA · MALAYSIA

School of Psychology

Information Sheet

***Title of Project*:** Is Motivational Interviewing an effective intervention for improving the classroom behaviour of primary aged pupils?

Insert Ethics Approval Number or Taught Project Archive Number:

Researcher: Charlotte Mahon

Supervisors: Nick Durbin

Contact Details: Nick.Durbin@nottingham.ac.uk lpxcm9@nottingam.ac.uk

Dear Parent/Guardian,

I am a Trainee Educational Psychologist undertaking a Doctorate in Applied Educational Psychology at the University of Nottingham. As part of the course I am undertaking supervised research, the focus of which is evaluating the effectiveness of a Motivational Interviewing (MI) intervention for improving behaviour in school.

The MI intervention will last for a period of 4/5 weeks. Each session will last for approximately 40 minutes and will be delivered weekly by myself in school. The sessions will consist of a number of discussion and practical activities which aim to encourage young people to think about what they are good at in school and also situations that they find difficult. The aim of the intervention is to encourage a young person to think about their behaviour and how it could be changed to potentially improve their experience of school.

I would like to invite you to an information sharing session on..... There will be an opportunity for you to ask any questions you may have, before being asked to provide consent for your child to be involved in this intervention aimed at improving their classroom behaviour. By attending this session you are not committing to your

child participating in the study. If you do permit your child to participate in the study you do have the right to withdraw them from the research at anytime without reason, even if the consent form has been signed.

Please may you complete the consent form below outlining if you are able to attend the information session being held on..... and return it to the school office.

If you are unable to attend the information session but are still interested in your child participating please indicate below and I can contact you to offer an alternative time to share the information.

I look forward to meeting you.

Yours Sincerely,

Charlotte Mahon

Trainee Educational Psychologist

Contact details: lpxcm9@nottingham.ac.uk

If you would like to discuss the content of this letter with a member of school staff please contact (insert staff name) using the details below (insert email address).

If you have any complaints about the study, please contact:

Stephen Jackson (Chair of Ethics Committee)

stephen.jackson@nottingham.ac.uk

Consent form

Please delete as applicable

I am/am not able to attend the session on.....

If unable to attend I am interested/not interested in my child participating in the research and do/do not wish to be contacted to arrange another time to share the information.

Signed: Date:

I do not wish to attend the information session but **give permission** for my child to participate in the intervention. ☐

I understand that I have the right to withdraw my child from the research at any point. ☐

I understand that all information and data collected throughout the research period will be kept securely and will remain confidential. ☐

Signed: Date:

I have explained the study to the above participant and he/she has agreed to take part.

Signature of researcher: Date:

***Title of Project*:** Is Motivational Interviewing an effective intervention for improving the classroom behaviour of primary aged pupils?

Insert Ethics Approval Number or Taught Project Archive Number:

***Researcher**:* Charlotte Mahon

Supervisors: Nick Durbin

Contact Details: Nick.Durbin@nottingham.ac.uk lpxcm9@nottingam.ac.uk

Having attended the information session on (insert date) I understand the purpose of the above the research and the procedure involved.

Please tick the appropriate boxes and sign below.

I have read and understood the information sheet. ☐

I have been given the opportunity to ask questions about the study. ☐

My questions have been answered satisfactorily. ☐

I give permission for my child's data from this study to be shared with other researchers provided that their anonymity is completely protected. ☐

I give permission for my child to participate in the research. ☐

I understand that I have the right to withdraw my child from the research at any time. ☐

I understand that all information and data collected throughout the research period will be kept securely and will remain confidential. ☐

Signed.....

Date.....

I have explained the study to the above participant and he/she has agreed to take part.

Signature of researcher: Date:

Appendix 8

School Consent form

***Title of Project*:** Is Motivational Interviewing an effective intervention for improving the classroom behaviour of primary aged pupils?

Ethics Approval Number or Taught Project Archive Number:

***Researcher**:* Charlotte Mahon lpxcm9@nottingham.ac.uk

***Supervisor**:* Nick Durbin Nick.Durbin@nottingham.ac.uk

Please tick the boxes if you agree and sign below.

I have read and understood the information sheet ☐

I have had the opportunity to ask questions about the study ☐

My questions have all been answered satisfactorily ☐

I am happy for the researcher to approach highlighted Parent(s)/carer(s) and pupils ☐

I understand that I have the right to withdraw our school from the research at any point ☐

I understand that only information agreed with the participating pupils will be shared with school staff at the end of the intervention period. ☐

I give permission for my data from this study to be shared with other researchers provided that my anonymity is completely protected. ☐

I agree to take part in the study ☐

Signed ……..

Print Name……

I have explained the study to the above participant and he/she has agreed to take part.

Signature of researcher: Date:

Appendix 9

Staff Consent Form

Title of Project: Is Motivational Interviewing an effective intervention for improving the classroom behaviour of primary aged pupils?

Ethics Approval Number or Taught Project Archive Number:

Researcher: Charlotte Mahon lpxcm9@nottingham.ac.uk

Supervisor: Nick Durbin Nick.Durbin@nottingham.ac.uk

As part of my research I would like to conduct a semi structured interview which each potential participant's class teacher. The purpose of this is to gain a better understanding of potential participants' behaviour and suitability for the research.

Once participants have been identified as being suitable to take part I will ask class teachers to complete a short behaviour screening questionnaire. I will ask class teachers to complete the same questionnaire at the end of the intervention period.

As highlighted in the information for schools sheet (see separate document) I would also like school staff to complete a weekly observation measure (with support from myself and other members of the Educational Psychology team). I will provide full guidance and training in completing this measure once consent has been provided.

Please tick the boxes and sign below.

I have read and understood the information sheet. ☐

I have been given the opportunity to ask questions. ☐

These questions have been answered satisfactorily. ☐

I give my consent to participate in the above research by completing a semi-structured interview and a short questionnaire at the beginning and end of the research period. ☐

I agree to support the researcher by completing a weekly observation measure. ☐

I understand that my responses will be reported in the researcher's Doctoral Thesis. ☐

I understand that I have the right to withdraw from this research at any time. ☐

I give permission for my data from this study to be shared with other researchers provided that my anonymity is completely protected. ☐

Signed.....

Date:.....

I have explained the study to the above participant and he/she has agreed to take part.

Signature of researcher: Date:

Appendix 10

Pupil Consent Form

***Title of Project*:** Is Motivational Interviewing an effective intervention for improving the classroom behaviour of primary aged pupils?

Insert Ethics Approval Number or Taught Project Archive Number:

Researcher: Charlotte Mahon

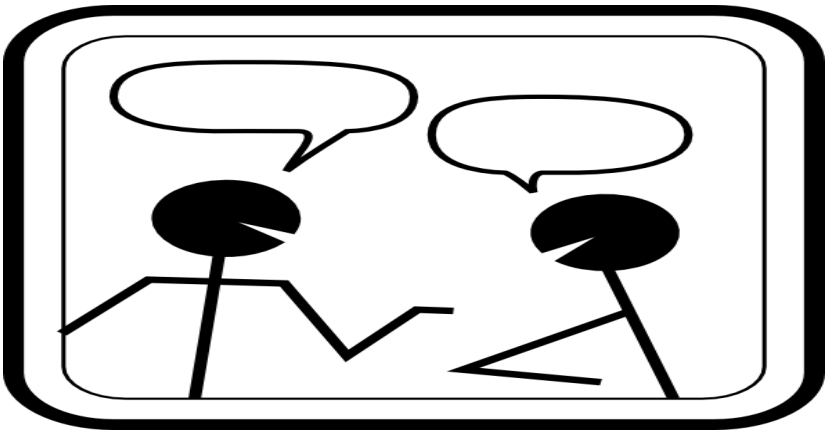
Supervisors: Nick Durbin

Contact Details: Nick.Durbin@nottingham.ac.uk lpxcm9@nottingam.ac.uk

Motivational Interviewing

What is Motivational Interviewing (M.I.)?

M.I is a way of talking to somebody that helps them to understand themselves better.



What does M.I. involve?

M.I. involves working together to help you to understand yourself even more. There are a number of different activities that we will complete together. Together we can look at what is happening now and what you might want to happen in the future for you.

What will we be doing?

We will be working together once a week for between 5 and 6 weeks. Our sessions will be on the same day each week and will last for approximately 40 minutes. I will use all the information that I collect in a research project that I am doing at University. The information will not use your name or your school so nobody will know it is you.

During our sessions we will be completing a number of different activities together. These activities will help me to get to know you better, find out what you like about school and things that you might find a bit tricky. We will also complete some work focusing on your behaviour and ways in which this could be changed.

If you would like to talk about this intervention with a member of school staff please speak to (insert staff name).

You DO NOT have to take part in this research project and even if you sign that you want to take part, you can change your mind at any time (even if it is near the end).

Let's take a few minutes to think of any questions you might have about what we will be doing....

If you would like to take part, please sign the form below

Pupil Consent form

If you are happy to come out of class and do some work with me please tick the boxes if you agree with them and sign on the line below.

1. I have read the information sheet about the study and have had the chance to think about the information. ☐
2. I have had the chance to ask questions. ☐
3. My questions have been answered satisfactorily. ☐
4. I understand that I can decide to not take part in the study at any time and that I don't have to give any reason for when I do. ☐
5. I agree to the information gathered being written up as part of the researcher's university studies. ☐
6. I give permission for my data from this study to be shared with other researchers provided that my anonymity is completely protected. ☐

I agree to take part in the above project.

Name of participant:

Signature:

Date:

I have explained the study to the above participant and he/she has agreed to take part.

Signature of researcher: Date:

Appendix 11

Typical Participant Debrief Letter

Dear P1,

Thank you very much for working with me over the last 6 weeks. This letter is to summarise what we did.

We talked about a lot of skills and strengths that you have. These were *caring, friendly and being funny*. You also told me that you are really good at *playing sports, particularly football and tennis.*

We talked about school and what you like and dislike. We talked about lessons you enjoy and lessons you find more difficult. You told me that you love *Art and Music lessons but don't enjoy numeracy and science because they are tricky and boring*. We talked about where you would like to be in 10 years' time and you told me that you would like to be really good at *playing sports and would maybe like to be a PE teacher.* You also said that you would like a job where you could *earn lots of money so you could go on lots of holidays and buy your family nice presents at Christmas*.

You felt that the best chance to have a lifestyle like that would be *if you did well at school*. You said that meant trying your best, even when lessons got a *bit boring.*

Thank you once again for working with me *participant 1*. I hope you have found our sessions together useful. Good luck!

Researchers contact details

Charlotte Mahon

Trainee Educational Psychologist

~~L~~pxcm9@nottingham.ac.uk

Key adult in school contact details

(Insert name of staff and relevant contact details)