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FACULTY OF SOCIAL & HUMAN SCIENCES

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What factors influence the use of a controlling motivational style in the classroom?

by

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ABSTRACT

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WHAT FACTORS INFLUENCE THE USE OF A CONTROLLING MOTIVATIONAL STYLE IN THE CLASSROOM?

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Research has suggested that controlling motivational styles in teachers are related to poorer outcomes for pupils (Assor, Kaplan, Kanat-Maymon, & Roth, 2005). It has been suggested that teachers behave in more controlling ways due to 'pressure from above' (e.g. from school performance standards), 'pressure from below' (e.g. from limited pupil engagement), and 'pressure from within' (e.g. from the teachers' personality traits; Reeve, 2009). The present systematic review analysed 26 papers and confirmed the relevance of these three categories. It was also highlighted that research into pressures from within was inconsistent and largely unreplicated, with the exception of research suggesting that limited self-efficacy was related to increased teacher control. Whilst a considerable amount of research has been dedicated to control in teachers there has been an absence of literature related the teaching styles utilised by Teaching Assistants (TAs). Recent research into the role of TAs has suggested that pupils can become dependent on the high level of support that TAs provide (Blatchford et al., 2009), and the present study aimed to explore whether such dependency could be due to TAs using a controlling motivational style. The study also investigated whether levels of control were related to self-efficacy as well as anxiety. Participants were established dyads of TAs and pupils with learning difficulties who took part in an etch-a-sketch activity in order to examine their interactions, alongside completing measures of negative affect and self-efficacy. The findings suggested that increased TA control was related to diminished pupil academic self-efficacy, which reinforces the impact the pressures from below can have on teaching style. However teacher self-efficacy and child negative affect were not found to impact on TA control. In addition a relationship was identified between TA autonomy supportive behaviours and the child initiating more problem solving behaviour. This further highlights the importance of supporting TAs to use less controlling teaching approaches in order to improve the outcomes for children with learning difficulties.

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DECLARATION OF AUTHORSHIP

I, Chantelle Nattrass, declare that this thesis and the work presented in it are my own and that it has been generated by me as the result of my own original research:

What factors influence the use of a controlling motivational style in the classroom?

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

Signed:

Date: 29th June 2015

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Definitions and Abbreviations

α	Cronbach's Alpha
ASD	Autistic Spectrum Disorder
BPNT	Basic Psychological Needs Theory
EP(s)	Educational Psychologist(s)
Etch-a-Sketch	A mechanical drawing toy with two knobs to draw vertical and horizontal lines
GAD	Generalised Anxiety Disorder
HADS	Hospital Anxiety and Depression Scale
κ	Cohen's Kappa
M	Mean
MDD	Major Depressive Disorder
p	Significance of a test statistic
PCI	Pupil Control Ideology Form
PD	Panic Disorder
PS	Problems in School Inventory
OCCSEFF	Occupational Self-Efficacy Scale
OCD	Obsessive Compulsive Disorder
r	Pearson correlation coefficient
RCADS	Revised Children's Anxiety and Depression Scale
SAD	Separation Anxiety Disorder
SD	Standard Deviation
SDT	Self Determination Theory

SEN	Special Educational Needs
SENCo(s)	Special Educational Needs Co-Ordinator
SEQ-C	Self-Efficacy Questionnaire for Children
SP	Social Phobia
TA(s)	Teaching Assistant(s)

Chapter 1:

Because I said so: What factors influence the use of a controlling motivational style in the classroom?

1.1 Introduction

A key area of interest within education is how teachers can motivate children and young people in their learning. One of the consistent research findings in this area of research has been that more controlling motivational approaches to teaching can limit pupils' motivation, engagement and interest in learning (Skinner and Belmont, 1993; Reeve, Bolt & Cai, 1999; Reeve, Jang, Carrell, Barch, & Jeon, 2004). Controlling teaching styles have also been linked to putting more pressure on pupils, becoming oppositional when pupils express disagreement (Reeve et al., 2004), and neglecting to explain the purpose of what pupils are asked to do but instead expecting compliance simply 'because I said so' (Bondy, Ross, Gallingane, & Hambacher, 2007, p.329). While a considerable amount of research has explored the impact of different motivational styles on learning and achievement in school, little attention has been given to the antecedents or determinants of controlling teaching styles. One review paper examined existing research on the use of controlling teaching styles in teaching, with a focus on understanding their emergence (Reeve, 2009). It highlighted the importance of researchers and educational professionals developing a greater understanding of the reasons underlying the occurrence of controlling motivational styles in the classroom in order to identify ways to encourage more effective teaching methods. This review aims to examine the current literature systematically in order to clearly establish what is already known about the factors which influence teachers' use of controlling motivational styles and to begin exploring what further research is needed.

Background

Within the motivation literature the construct of 'controlling' is described as 'the interpersonal sentiment and behaviour [people] provide to pressure [others] to think,

feel, or behave in a specific way' (Reeve, 2009, p. 159). It is suggested to be one end of a bipolar continuum from highly controlling through to 'autonomy supportive' (Deci & Ryan, 1987, p. 1025) and where the latter describes an individual who works to nurture and develop a natural curiosity and interest in learning by encouraging more independent learning practices (Reeve, Deci, & Ryan, 2004). These two concepts have typically been measured either using questionnaires where individuals report perceptions of their behaviour or by observing interactions. The exploration of the continuum between controlling and autonomy supportive within psychological literature has become an increasing research focus due to the implications it has for engaging and motivating people in a learning environment (Guay, Boggiano, &Vallerand, 2001; Reeve et al., 2004).

The concept of a dichotomy between controlling and autonomy supportive evolved from Ryan and Deci's Self-Determination Theory (SDT; 2000). SDT is a meta-theory concerned with human motivation and personality that consists of several inter-linked theories including Basic Psychological Needs Theory (BPNT; Deci & Ryan, 2012). The foundation of SDT is that humans are active, growth-orientated organisms that are driven to cultivate a coherent sense of self and to integrate themselves into social structures. As such humans have integral needs that they are motivated to satisfy and the BPNT proposes that psychological well-being is predicated on achieving a sense of autonomy, competence, and relatedness. The important role of these needs has been well supported by research in education (Vansteenkiste, Lens, & Deci, 2006) and health care (Ng et al., 2012). Further support has been provided by studies that have compared a range of psychological needs (e.g. self-esteem, pleasure, security) in terms of their importance to human wellbeing (Sheldon, Elliot, Kim, & Kasser, 2001). The findings from these studies have consistently identified autonomy, competence, and relatedness as the most integral of human needs.

The fulfilment of basic psychological needs have been linked to fostering greater intrinsic motivation; that is the 'motivation to voluntarily engage in a task for the inherent pleasure and satisfaction derived from the task itself' (Murayama, Matsumoto, Izuma, & Matsumoto, 2010, p. 20911). Research has indicated that more intrinsically motivated individuals demonstrate greater enjoyment and engagement during tasks, as well as being more likely to continue to engage with learning over time (Wild, Enzle & Hawkins, 1992; Ryan & Deci, 2000). This is an important resource to develop and some studies

suggest that non-supportive conditions (i.e. those characterised by external pressures to perform at a high standard) can undermine this natural propensity for exploration (Deci, Koestner, & Ryan, 1999). Further research suggests that the interpersonal experiences that shape development can lead to individual differences in how intrinsically motivated an individual may become (Deci & Ryan, 1987). For example children who experience more autonomy supportive teaching tend to become more intrinsically motivated and autonomous in their learning (Reeve, Nix, & Hamm, 2003).

Research has highlighted a range of benefits associated with the utilisation of an autonomy supportive approach to motivating children and young people in school. Teachers who have been rated as more autonomy supportive (based on displaying behaviours such as taking pupil views into account and encouraging pupils to make choices about their learning) tend to elicit better grades and task engagement from their pupils (Black & Deci, 2000; Flink, Boggiano, & Barrett, 1990). In addition autonomy support has been linked to other important learning characteristics such as greater creativity and more desire for challenge in their pupils when they are given complex tasks to complete (Deci, Schwartz, Sheinman, & Ryan, 1981; Koestner, Ryan, Bernieri, & Holt, 1984; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005). Beyond learning, autonomy supportive approaches have also been linked to increased child positive affect and sense of satisfaction, as well as reducing levels of anxiety (Black & Deci, 2000; Levesque, Zuehlke, Stanek, & Ryan, 2004; Ryan & Grolnick, 1986).

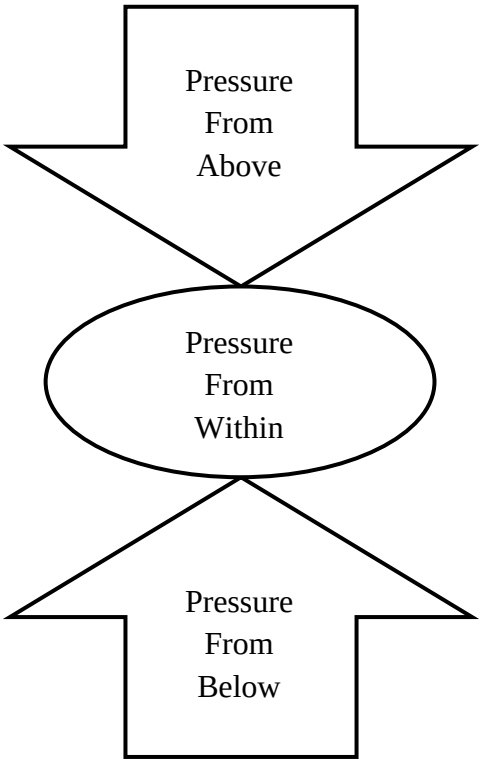
In contrast, more controlling methods of teaching have been linked to diminished initiative and less effective learning, especially when pupils are required to use more creative thinking skills, such as creatively applying maths skills to complex mathematical problems (Grolnick & Ryan, 1987; Utman, 1997; Assor, Kaplan, Kanat-Maymon, & Roth, 2005). Consistent with these findings, a related body of research has examined the impact of controlling parenting on child development. These findings similarly indicate that more controlling parenting strategies are linked to decreased motivation when engaging in tasks together such as homework activities, increased physical aggression and increased anxiety in offspring (Gurland & Grolnick, 2005; Joussemet et al., 2008). Parental control is also considered to limit the development of children's autonomy and leads to reduced self-efficacy as the child perceives the world to be uncontrollable (Bögels & Brechman-Toussaint, 2006). These findings indicate the negative impact the adults'

controlling behaviours can have on children and young people across different developmental contexts. Further research has aimed to understand causal factors that lead to the development of these behaviours in adults.

Understanding the origins of a 'Controlling Motivating Style' in the classroom

Reeve's (2009) review of motivational styles outlined several reasons for teacher controlling behaviours towards pupils in the classroom. Reeve categorised these reasons into three types of pressures put on teachers (see Figure 1): pressure from above (linked to cultural values and performance standards), pressure from below (at the level of the child) and pressure from within (to meet their own desires and goals linked to teaching).

Figure 1. A representation of Reeve's (2009) three-fold framework of the influences on teachers to use controlling motivational styles.



The first two classifications were drawn from Pelletier, Séguin-Lévesque and Legault's (2002) findings which suggested that controlling behaviours in teachers increase when they feel pressure to meet performance standards from above (e.g., from the school's senior leadership team or from government expectations) and are trying to manage children's lack of engagement from below. Reeve (2009) added pressure from within to capture research that has aimed to identify whether there are personality or individual characteristics that are more likely to lead to or elicit increased teacher control in school.

Reeve (2009) suggested that pressure from above was proposed to impact on teachers' motivational styles because (1) Teachers occupy an inherently powerful social role, (2) Teachers harbour the dual burdens of responsibility and accountability, (3) Teachers are aware that controlling is culturally valued, and (4) Teachers sometimes equate control with structure. The fifth reason described by Reeve was related to pressure from below and suggested that (5) Teachers react to pupil passivity during learning activities. Reasons six and seven were related to pressures from within, proposing that (6) Teachers tend to endorse the maximal operant principle (i.e. the belief that a child's motivation will increase in line with the size of the reward they receive), and (7) Teachers may harbour control-oriented personality dispositions.

The current review: aims and objectives

Based on the findings which indicate that using more controlling motivational strategies can have a negative impact on children's learning and general outcomes, it is important to address why it is that such controlling interactions are still used in the classroom. The aim of this review is to build on Reeve's (2009) paper in order to critically examine the existing literature and outline possible factors that lead to or maintain a controlling teaching style. Through using a systematic approach to reviewing the literature this paper will examine the extent to which Reeve's (2009) conclusions regarding these factors are supported by research. The three-fold framework described in Reeve's (2009) paper will be utilised to structure the literature in this review. Pressure from above will be defined as any influence coming from outside of the classroom, either managerial or societal, that impacts on the teacher. Pressure from below will be defined as the influence of the pupils within the classroom on a teacher's behaviour. Pressure

from within will refer to any individual differences such as beliefs or personality factors that are shown to influence controlling motivational styles. The BPNT will form the theoretical underpinning of this literature review, with a specific focus on the impact of autonomy in the classroom.

The implications of identifying factors that underlie teachers' motivational styles are considerable due to the clear benefits of autonomy supportive strategies in the classroom. By identifying key determinants of controlling or autonomy supportive behaviours interventions can focus on the development of good teaching practice within schools, with the broader aim of enhancing the teaching and learning experience for children and young people and increasing academic achievement. It is also possible that there will be some factors that are outside the control of individual teachers and hence the findings of this literature review could have important implications for more systemic changes that could be made in schools. Educational psychologists are well placed within the education system to deliver support to schools in order to increase autonomy supportive behaviours from teaching staff, either through targeted intervention or through systemic change.

In summary, the aims of the present literature review are as follows. (1) To critically and systematically review a broad range of research in order to further explore the impact of teachers employing a more controlling motivational style. (2) To consider whether a systematic literature review supports the factors identified in Reeve's (2009) three-fold framework. (3) To explore any additional or alternative factors that were not identified in Reeve's (2009) paper.

1.2 Method

Three electronic databases were used to conduct this literature search: Web of Science, PsycINFO, and the Psychology & Behavioral Sciences Collection (PBSC). The databases were searched on 29th November and 27th December 2014. The process used to select studies for this review is detailed in Appendix B. The search term used to identify relevant articles was 'controlling teacher OR autonomy support teacher OR autonomy supportive teacher OR control orientation teacher OR control ideology

teacher'. The search terms 'control' and 'controlling' resulted in large numbers of irrelevant literature due to their dual meaning and hence combining the terms with 'teacher' reduced the number of irrelevant articles. Other relevant terms were tried in addition to teacher such as 'educator', 'classroom', and 'teaching' but these did result in identifying any additional relevant articles. Search terms such as 'motivation' were also tried but these proved to be too broad. The initial search in all databases retrieved 1355 papers. This number was then reduced to 541 using the exclusion parameters of each database so that only psychology-based, peer-reviewed journal articles were retrieved that were available in English and included human samples. Books and unpublished works such as dissertations and conference papers were excluded due to nature of this systematic review.

A review of the journal titles produced in the searches resulted in the exclusion of 347 papers. The titles were reviewed based on their relevance to autonomy supportive or controlling teaching methods, or whether there was reference to teacher motivation. Following this the abstracts on the remaining 194 articles were retrieved and read in order to explore whether the papers fell within the scope of the present review. The majority of studies were specific to looking only at the impact of controlling or autonomy-supportive teacher behaviours. These were excluded along with any studies that were exclusively based on psychometric measures, background review papers, articles that could not be retrieved, and duplications. Once all of the abstracts had been reviewed a further 161 articles were excluded (see Appendix B for further details). From the remaining papers, five focused only on the consequences of controlling behaviours and a further four articles only measured interventions to improve autonomy supportive teaching behaviours; these 9 papers were therefore excluded. At the end of this process 24 articles were identified as relevant to understanding the factors underlying the use of either controlling or autonomy supportive teaching behaviours. Furthermore, two additional records were found through looking at the reference lists of papers identified in the database searches and met the inclusion criteria for this review meaning that a total of 26 papers were included. For more information about the papers included in this review including the samples and measures used see Appendix A.

1.3 Results

Twenty Six papers were included in this review and a table detailing the articles that were retrieved is shown in Appendix A. Based on these papers this review will explore factors related to teachers adopting more controlling motivational styles in the classroom. The literature has been categorised according to Reeve's (2009) Three-Fold Framework (outlined above) into the categories of 'Pressure from Above', 'Pressure from Below', and 'Pressure from Within' (p.163). The category of 'Pressures from Within' has been further divided in order to consider papers that have explored the role of self-efficacy on teaching style. Some papers considered factors that fell into multiple categories and hence they have been assigned to an area that best fit the explanation of the research project.

Some of the papers identified in this systematic review originate from early research in the area of pupil control ideologies (Willower, Eidell, and Hoy, 1967). This literature base proposed that teacher behaviours consisted of a dichotomy between two poles which were referred to as custodialism and humanism. It is suggested that custodial teachers believe that pupils must be controlled because they are undisciplined and irresponsible; they do not try to understand pupils' behaviour, but instead focus on what is morally expected (Gordon, Dembo & Hocevar, 2007). In contrast humanistic teachers are suggested to consider the psychosocial factors for pupils' learning and behaviours, with a focus on individualistic approaches and building relationships rather than imposing control (Gordon et al., 2007). There are differences between the concept of custodialism-humanism and the controlling-autonomy supportive dichotomy initially proposed in this review, especially as the focus of the former is primarily on approaches to behaviour management, rather than motivating learning. However Reeve (2009) proposed the following useful conceptualisation for controlling behaviours that can be used to highlight the similarities between the concepts of controlling and custodialism. Specifically, Reeve suggests that:

> 'Three conditions make any approach to motivating students a controlling one: (a) adopt only the teacher's perspective; (b) intrude into students' thoughts, feelings, or actions; and (c) pressure students to think, feel, or behave in particular ways.' (Reeve, 2009, p.160)

According to the three factors described in these quotes custodialism could also be considered to be a controlling motivating style, and hence control ideology literature will be included in this review.

With regards to nationality, 17 of the papers that were retrieved originated from the USA and all of the papers written before 1996 were American in origin. More recent articles are increasingly international and include four from Canada, as well as others from Europe (France, Italy, Sweden, Belgium, Norway), the Middle East (Israel, Jordan) and Asia (South Korea, Singapore), indicating that this area of research is becoming increasingly international.

The methodologies of the papers in this review are largely questionnaire based, with 16 only using questionnaire measures. Three supplemented this information with observer ratings of classroom interactions and one used semi-structured interviews. Six of the papers in this review were based on experimental measures that aimed to examine different factors related to teachers' classroom through experimental research, or alternatively they explored what impact educating teachers about autonomy-supportive practices might have. There were a wide range of questionnaires used across 26 papers but two were particularly prevalent. These were measures of teachers' perspectives on control, the Pupil Control Ideology Form (PCI; Willower, Eidell & Hoy, 1967) and the Problems in School Inventory (PS; Deci, Schwartz, Sheinman, & Ryan, 1981). The PCI is made up of 20 items and it aims to measure how custodial or humanistic teachers are in their management of pupils. This measure has been used in hundreds of studies and internal consistency estimates typically range from .70 to .93 (Woolfolk & Hoy, 1990). The PS uses a selection of eight vignettes to determine how controlling or autonomy-supportive the teachers are when motivating pupils. Deci et al. (1981) found that the internal consistency of the subscales ranged between .63 and .76. Both these questionnaires were widely used in the papers included in this review (PCI=10 papers, PS=8 papers), but only two utilised both which enabled the examination of the extent to which these concepts overlap. Woolfolk, Rosoff and Hoy (1990) found a moderate significant correlation between the two measures (r= -.42, p < .01) as did Woolfolk and Hoy (1990) (r = -.37, p < .01), which suggests that teachers who are more custodial are less likely to adopt an autonomy-supportive teaching style. These findings suggest that the two concepts measured by PCI and PS are distinct but associated with each other.

Pressure from Above

The research examining pressure from above has considered the different cultural factors that influence a teachers' motivating style, ranging from international differences to school level variance. A recent study by Reeve et al. (2014) examined the impact of culture on motivational style by recruiting teachers from eight different cultural groups that varied in collectivism–individualism perspectives. The researchers aimed to find out how varying levels of collectivism-individualism across cultures impacted on teachers' motivating styles. In order to do this they devised a questionnaire made up of vignettes and questions to measure teachers' perspectives on how effective, normative and easy-to implement an autonomy-supportive or controlling motivational style would be. These beliefs were used as predictors, alongside Hofstede, Hofstede & Minkov's (2010) index of national scores for collectivism-individualism, and they were compared to teachers' self-described motivational style. Hierarchical linear modelling illustrated that collectivism-individualism predicted teachers' motivational style and collectivism predicted the belief that controlling behaviours were more normal. The findings also suggested that use of more autonomy supportive strategies were significantly predicted by believed effectiveness and ease of implementation. Interestingly individualism was not related to more autonomy supportive styles (as the authors had predicted) which may suggest that it is not helpful to conceptualise controlling and autonomy support as strict opposites; since these findings indicate that teachers who are not controlling are not inherently autonomy supportive instead. This study highlights the impact of different cultural attitudes at an international level; however it is also important to consider the impact of culture at a national and school level.

Pelletier, Séguin-Lévesque, and Legault (2002) examined a range of cultural factors that might lead teachers to be more controlling in class. They proposed that teachers experience pressures from both above (defined in this paper as teachers having to comply with the national curriculum, colleagues and performance standards at a school level) and below (defined as the impact of perceiving pupils to be unmotivated) which lead to more controlling motivational styles. The researchers measured teachers' intrinsic motivation, their perceptions of pupil motivation, their perceptions of pressure from above and their motivational style. The study utilised structural equation modelling to indicate that decreased ratings of intrinsic teacher motivation were linked to more controlling teaching

behaviours. The study also suggested that the key predictors of lower intrinsic teacher motivation were increased perceptions of pressure from above and of pupils being less motivated.

Rocchi, Pelletier, and Lauren Couture (2013) extended Pelletier et al.'s (2002) work to examine whether their model would extend to other teaching contexts such as basketball coaching. Basketball coaches completed a measure of pressure from above (defined as pressure from colleagues and administration), a measure of their own and their team's motivation and a measure of their controlling-autonomy supportive behaviours. Structural equation modelling provided further support for Pelletier et al.'s (2002) model to highlight that coach motivation mediated the significant relationships between pressure from above (i.e, pressures from colleagues and team administration with regards to the way they taught), pressure from below (i.e. team members motivation) and motivational style. These two studies illustrate the impact that perceptions of different types of pressure can have on teachers' beliefs towards control. While questionnaire measures provide a valuable and reliable indicator of motivational style further studies have considered whether pressures impact on teachers' observable behaviours as well.

Two papers used experimental methods to explore the impact of pressures outside the classroom on teachers' behaviour (i.e. pressures from above). In an early study, Deci, Spiegel, Ryan, Koestner, and Kauffman (1982) recruited 20 male and 20 female psychology undergraduates who were informed that they would be teaching students to solve a spatial relations puzzle. Half of the participants were told that their role was to facilitate the student's learning about the puzzle (instructional group) and the other half were told that they must ensure that the student learnt to solve the puzzle (performance standards group). The students used were not confederates and the teacher talk was rated by six blind observers who were shown to have strong agreement (0.92). Teachers were coded on control, autonomy support, involvement, interest, competency, nervousness, warmth, time granted, emphasis on mastery rather than performance, and likeability. The researchers found a main effect of condition highlighting that teachers who were given performance standards instructions showed more controlling and demanding behaviours in their interactions with students. For example, teachers in this group were found to talk more and to talk in a more demanding or critical

way, as well as allowing students to work alone much less. Interestingly, more controlling teachers were found to show higher rates of praise, but they also used higher rates of criticism and hence it could be suggested that the praise was simply another method of control. Students in the performance standards group completed double the number of puzzles (12.9 versus 6.1) but only 3.1% of the puzzles were completed independently. Furthermore, controlling teachers were rated as being more competent, involved and interested by observers, which may suggest that control is perceived positively in our culture. Whilst no conclusions can be drawn about the students' learning, the limited number of puzzles completed independently by the performance standards group suggests that this method may not have led to developing fully independent learners. Extending this research to a genuine classroom may help to examine the validity of these findings.

Flink, Boggiano and Barrett (1990) extended Deci et al.'s (1982) research by recruiting working teachers and their pupils. Eight teachers were randomly assigned to a pressure condition where they were required to achieve high levels of performance standards, and seven teachers were assigned to the non-pressure condition where they were encouraged to facilitate learning. Teachers completed a measure of their motivational style and children completed a measure of their intrinsic motivation and evaluated their liking for the activity. Teachers then delivered a lesson on an activity which the pupils were required to complete and were assessed on. Pupils in the pressure condition achieved significantly lower scores when assessed on their performance of the activity that had been taught, although their liking for task did not differ between groups. Blind observers rated teachers in the increased pressure condition as demonstrating more controlling behaviour e.g., they provided less provision of choice to pupils along with criticising and praising pupils more. Interestingly pressured teachers were also rated as being more enthusiastic, interested and competent by the adult raters, but these constructs were not measured from the pupil perspective. A strength of this research was that it occurred in a real school setting, so it has high ecological validity. However much like Deci et al. (1982) the researchers relied only on adult ratings of the teachers' effectiveness without gaining the opinions of the children involved.

Based on findings from experimental studies, observers perceived more controlling teachers as more capable. The findings suggest that our culture may place

particular significance on controlling behaviour in a teaching and learning environment. This finding has implications at a school level when there is a general ethos of valuing controlling motivational styles. Further research has examined the impact that the controlling behaviours of colleagues can have on teachers and the ethos of a school.

Vitagliano and Licata (1987) aimed to explore the school culture by looking at the impact of social norms on teaching style. They investigated differences in controlling behaviours between hearing and non-hearing teachers in a large residential school for the deaf. Participants took part in a semi-structured interview and also completed a measure of teaching style for themselves as well as two further versions to reflect their perceptions of typical hearing and deaf teachers. The results showed that deaf teachers rated themselves as more controlling in all measures and that hearing teachers also rated deaf teachers as more controlling. Additionally it was found that deaf teachers perceived other deaf teachers as having had similar control ideologies to themselves, whereas hearing teachers were a more heterogeneous group demonstrating more variety in how controlling they rated themselves and other hearing teachers. This study indicated that controlling teaching styles may be sensitive to social influence, especially within more homogenous groups, suggesting that school communities may be likely to adopt more consistent teaching styles.

The research in this section indicates that culture has an influence on controlling motivational styles, especially in more collectivist societies. The impact of culture was also reflected in the tendency for blind observers of teaching approach to regularly rate more controlling teachers as more competent. The studies discussed in this section highlighted that teachers behaved in more controlling ways when they experienced pressure from government targets, school administration and from their peers. Further research has looked at the impact of pupils on controlling teacher behaviour in order to examine whether teachers experience pressure from sources other than those in authority.

Pressure from Below

Research based on the impact of pressure from within the classroom has largely focused on the effect of teachers' perceptions of their pupils and its link with classroom practices. In an early paper, Willower and Lawrence (1979) recruited primary and

secondary teachers in order to explore the impact of perceptions of student threat (i.e. a teachers' belief that pupils will compromise their status) on teachers' controlling behaviours. Participants completed questionnaire measures of teacher control and a measure of their perceptions of student threat. A significant positive correlation was found for both primary and secondary teachers between controlling teaching style and high levels of perceived student threat. In addition, secondary school teachers reported increased perceptions of student threat and to be more controlling compared with elementary school teachers. These findings suggest that if teachers perceive more student threat they are also likely to report a more controlling teaching style, although only 10% of the variance was explained by perceptions of student threat. Moreover it also suggests that older pupils are perceived as more threatening, which could potentially lead to more adversarial relationships between teachers and pupils in secondary schools. Further research has aimed to extend this finding by exploring teachers' belief in their ability to manage more threatening pupils.

Rydell and Henricsson's (2004) addressed the issue of teachers' perceived level of control over their pupils and how this impacts on their controlling teaching style. A sample of teachers completed three questionnaires measuring their disciplinary strategy preferences (i.e. whether or not teachers used authoritarian strategies to manage difficult situations with pupils), their perceived control of pupils, and their teaching style. The findings suggested that perceived low control over pupils and higher levels of controlling teaching styles were associated with preferences for more authoritarian strategies (i.e. more punitive and forceful approaches), whereas perceived high control and a less controlling teaching style were associated with non-authoritarian strategies. Both perceived control over pupils and control ideology contributed independently to the teachers' choices of different authoritarian or non-authoritarian strategies in hypothetical situations. Observations a year later of 16 of the teachers interacting with children in their classes partially supported the relationships between strategy choices, perceived control and controlling motivational style identified in the questionnaire measures; specifically highlighting that teachers who advocate the use of more authoritarian strategies are likely to act accordingly. These results indicate that low perceived control is linked to more controlling disciplinary strategies in the classroom. Results from these two key papers suggest that perceptions around control and threat may be related; within an

educational context, teachers are more likely to perceive those that they have less control over as more threatening.

Researchers have further considered the impact of pupil motivation on approaches to teaching, as demonstrated by two of the papers already discussed (Pelletier et al., 2002; Rocchi et al., 2013). Pelletier and Vallerand (1996) used a teaching paradigm in which male undergraduates were assigned the role of supervisors and asked to teach male high school students to complete a spatial relations puzzle. Ten supervisors were falsely informed that their student was intrinsically motivated (i.e. they enjoy this task), ten were falsely informed that their student was extrinsically motivated (i.e. they find this task boring but would like the monetary reward) and ten were given no information about their student. The supervisors were given time to become familiar with the puzzle and then spent 20 minutes supporting a high school student to complete the puzzle. At the end of the teaching session the students were given a period of free choice to either keep interacting with the puzzle or engage in another activity.

The controlling or autonomy supportive behaviours employed by the supervisors were rated by the undergraduates themselves, the high school students and external observers. The results showed that the ratings for the two experimental groups were different to those of the control group, suggesting that perceptions of student motivation did impact on teaching styles. Specifically, supervisors who were told that their student was more extrinsically motivated were considered to be more controlling by all three groups, compared to the supervisors told that the students were intrinsically motivated. Students taught by supervisors who believed their student was intrinsically motivated spent significantly more time interacting with the puzzle during the free choice period and reported more intrinsic interest in the task. These results indicate that teacher perceptions of pupil motivation can impact on the way that they teach, even within a short space of time. Future research should explore whether student behaviour impacts on teacher behaviour regardless of the expectations they were given.

Sarrazin, Tessier, Pelletier, Trouilloud, and Chanal (2006) developed on the findings of Pelletier and Vallerand's (1996) study by using a more naturalistic design. The focus of this study was on the impact that actual teacher expectations of pupil motivation have on teacher use of controlling behaviours, with the researchers hypothesising that teachers would behave in a more controlling way towards pupils they expected to have

less motivation. Participants were seven Physical Education (PE) teachers and their secondary pupils. The pupils were required to complete a questionnaire to measure their intrinsic motivation towards sport. Six PE lessons were then observed and coded by two blind observers in order to explore the verbal interactions between teachers and individual pupils. Teachers were asked to complete a questionnaire after the first lesson to indicate their expectations for each pupil in the class with regards to how much effort they expected each pupil to exert and how autonomously they would behave. Findings indicated that 4.6% of all teacher-pupil communications were rated as autonomy supportive and 37.22% being rated as controlling. In addition, the results indicated that the frequency of communication was negatively related to teacher expectations; suggesting that pupils who were expected to be more motivated received fewer teacher utterances. Further results indicated that when teachers had a negative perception of pupil motivation they used more controlling utterances, controlling questions, and negativity. Pupil ratings of their own motivation were not related to teacher behaviour. Overall, the results suggest that pupils who were perceived as less motivated elicited more controlling behaviours from teachers in the lesson. Moreover, across the two studies, the results highlight that an important determinant of teacher behaviour is their expectations of pupils, rather than the pupils' own beliefs about their motivation.

The research discussed in this section so far has focused on the impact of teacher perceptions, but there has been little exploration of the effect of pupil behaviour. In one study, Skinner and Belmont (1993) aimed to explore whether there was a reciprocal relationship between teachers' controlling behaviour and pupil engagement. They asked teachers to report on their interactions with individual pupils and pupil reports of their interactions with the teacher, which were completed in the autumn and spring terms within one academic year in order to explore the effect of student engagement over time. Time-lagged path analyses indicated that students' emotional and behavioural engagement significantly predicted teacher interactions with pupils over time. Lower levels of student engagement were related to decreased teacher involvement, and teachers were found to become more neglectful, coercive and inconsistent between the two time points with pupils who were less engaged. These findings indicate that pupils who are disengaged elicit teacher responses that further undermine their motivation. Teacher involvement was also found to be an important predictor of pupils' engagement,

suggesting that teachers' direct interactions with a pupil have a significant impact on how that individual will engage with their work over time.

Taken together this series of studies highlights that perceptions of pupils can impact on teacher behaviour in the classroom. The results across several studies indicate that teacher perception of pupil motivation is more relevant than the pupils' own beliefs about their own motivation. The research further suggests that teacher perceptions are not fixed; they adapt to pupil behaviour in the classroom. However the research discussed here has not explored the impact of wider beliefs held by teachers on controlling behaviours. Further papers have examined the impact of beliefs and a range of other individual characteristics in determining more controlling motivational styles.

Pressure from Within

A considerable number of studies since the 1960s have focused on individual characteristics associated with more controlling teaching styles. Some papers have looked at more descriptive factors (e.g. political views and level of education), while others have aimed to draw out specific personality traits (e.g. creativity and conscientiousness), or teacher beliefs more generally (e.g. the belief that skills should be mastered).

The following three papers highlight some individual factors that are related to the increased risk of teachers developing a more controlling approach in the classroom. Early research worked with teachers to examine the factors related to control (Leppert and Hoy, 1972). They measured a range of demographic factors, as well as using a measure of personality and a measure of teaching style. Regression analyses indicated that the significant predictors of control were gender (i.e. being male), increased teaching experience, level of education, being a secondary teacher, larger class sizes, orderliness, egotism, and a preference for non-intellectual hobbies.

Reeve, Bolt, and Cai (1999) conducted three studies to examine the validity of the Problems in School Inventory (PS; Deci, Schwartz, Sheinman, & Ryan, 1981) which measures controlling teaching style. These studies included a critical evaluation of the instrument as well as comparisons to observations and other self-report measures. As

part of the third study a range of demographic factors were measured from a sample of 46 teachers. Much like the previous study correlations indicated that being male was related to a more controlling teaching style, but a conservative political ideology was also linked to control.

Cai, Reeve, and Robinson (2002) further examined the factors related to controlling teaching styles through a sample of home educators, school teachers, and pre-service teachers. Participants completed a measure of teaching style and a selection of questions related to demographics, political views, religious affiliation, frequency of church attendance and education. The results suggested that being a home school teacher, being male, and frequent church attendance all individually and uniquely predict a controlling teaching style. Lower levels of education, teacher certification and conservative political views were not significant predictors, although they did correlate with a controlling teaching style like the other three predictor variables. However it is important to acknowledge that the sample were largely protestants from a small area in southern USA, which suggests that these results may be unrepresentative of educators more generally.

The findings of earlier research support Cai et al.'s (2002) more recent results. Halpin, Halpin, and Harris (1982) considered whether specific personality traits predicted controlling teaching styles. Participants were education students who completed measures of control, personality and self-esteem. The personality traits that correlated significantly to high levels of control were 'affected by feelings', 'conscientious', 'sober', 'practical', 'shy', 'reserved', 'tense', 'apprehensive', and 'low self-esteem'. In this case personality traits were measured on a continuum between two characteristics (e.g. expedient versus conscientious).

Two further early papers investigated personality characteristics and teaching style. Halpin, Goldenberg, and Halpin's (1973) recruited a sample of undergraduate students to explore whether creativity was linked to less controlling approaches. All participants completed two measures of creativity and a measure of teaching style. Both measures of creativity correlated negatively with control, demonstrating that higher creativity was related to lower rates of controlling teaching behaviour. Although the significant correlations were weak, the hypothesis that more creative pre-service teachers are less controlling was supported by the data. Brenneman, Willower, and Lynch (1975) also

considered the relationship between control and specific personal characteristics; self-acceptance and the acceptance of others. Teachers completed measures of self-acceptance, acceptance of others and teaching style. The results suggested that the acceptance of others was moderately and significantly related to a less controlling approach, but the correlations with self-acceptance were not significant. The authors suggested that maybe teachers are already relatively high in self-acceptance which is why there was not sufficient variation in the sample to demonstrate a significant relationship. Further analysis highlighted that a lower education level and increased teaching experience may also be related to teacher control. Overall the findings suggested that controlling teachers are less accepting of others, which may be related to other findings that such teachers consider pupils to be more threatening.

Building on these studies, Reeve (1998) has argued that an orientation towards autonomy may in itself be a personality characteristic which predicts an autonomy-supportive motivating style. He conducted two studies to explore the idea of autonomy orientation and recruited pre-service teachers in order to examine the personality characteristics of individuals with differing motivational styles. The participants completed a measure of controlling motivational style and a measure of how autonomous or controlled their orientation towards tasks tends to be. Reeve found a significant correlation between a more autonomous nature and a less controlling motivating style. In addition, further analysis found that both an autonomous orientation and gender had a significant and independent effect on motivating style; with female students and those reporting an autonomy orientation being less likely to adopt a controlling motivating style. The authors concluded that the magnitude of the correlation between autonomy orientation and motivating style may be low because autonomy orientation is only a theoretical characteristic. However all of the previous studies have indicated only weak or moderate relationships between personality characteristics and control, which may suggest that personality can only explain a small part of why people develop controlling teaching behaviours.

Gordon, Dembo, and Hocevar (2007) adopted a different approach to exploring the personal factors associated with more controlling teacher behaviours. They focused on whether teachers' own learning behaviours (i.e. whether the individual is focused on the mastery of skills or on their performance of skills) and their ability to self-regulate

their learning might influence their motivational style. Teachers completed measures of self-regulation, learning behaviours, and control in the classroom. The authors used structural equation modelling to show that self-regulation predicted mastery orientation to learning, which in turn predicted teachers' level of control. This result suggests that less controlling teachers are better able to self-regulate their learning and that this relationship is mediated by the drive to master the skills that they learn. This implies that more self-regulated teachers are likely to focus their classes on achieving mastery in their learning rather than good scores using less controlling behaviours.

The last two studies in this section address the impact of teachers' views on their motivating style. Across three studies Pierro, Presaghi, Higgins, and Kruglanski (2009) expanded on the impact of self-regulation by splitting it into two main orientations, assessment (critically evaluating the potential routes towards a goal) and locomotion (regulating one's movement towards a goal). Study one involved teachers from six Italian schools who completed a measure of locomotion/assessment orientation and motivating style. The analysis indicated a positive and significant relationship between a controlling motivational style and an assessment orientation. In the second study teachers were split into locomotion and assessment conditions. Participants in the locomotion condition were asked to write about times when they moved towards a goal and those in the assessment condition were asked to write about times when they utilised critical evaluation skills when working towards a goal. Following this experimental manipulation teachers completed a measure of motivating style. Consistent with the first study, participants in the assessment orientation condition were found to demonstrate a more controlling approach to teaching compared to those in the locomotion condition; again indicating that more controlling teachers tend towards evaluation rather than action when working towards goals. This second study is important because it indicates that regardless of an individual's natural self-regulation orientation, being put in a situation that elicits an assessment orientation can then lead to a more controlling teaching style. Hence whilst this study aimed to look at individual characteristics it actually highlighted an issue that may need to be considered in terms of school culture.

Roth and Weinstock (2013) tested the proposition that epistemological views (i.e. an individual's belief about the nature of knowledge) were related to teachers' motivating style. They recruited teachers, who completed an epistemological beliefs questionnaire

(e.g., a measure of whether they viewed knowledge as subjective or objective). Pupils completed a measure of their teacher's autonomy-supportive or controlling behaviours, as well as a measure of their own motivation. The data was analysed using Krull and MacKinnon's (1999) procedure for testing multilevel mediation models. They found that teachers with more objectivist epistemologies (a belief that knowledge is objective and certain) as opposed to relativist epistemologies (a belief that knowledge is subjective and without absolute truth) were rated as more controlling by their pupils, although these results were only marginally significant. The results further indicated that pupils' perceptions of motivational styles mediated the relationship between teachers' objectivist epistemologies and higher levels of extrinsic motivation in pupils. This suggests that teachers with less sophisticated epistemological views tend to have pupils that are more extrinsically motivated, if they employ a more controlling teaching style.

This group of studies represents a range of different personal characteristics related to more controlling teaching behaviour, including descriptive characteristics (i.e. being male, less educated and having conservative political views), personality traits (e.g. egotism and diminished creativity) and personal beliefs (e.g., believing in learning for performance and the objectivity of knowledge) . The results indicated a range of weak to moderate associations with teacher control. In contrast to these disparate findings there were a larger number of studies related to teacher self-efficacy and these are highlighted below.

Self-Efficacy

An early study by Wallen, Travers, Reid and Wodtke (1963) examined the relationship between teachers' confidence in their ability and links to control in the classroom. Teachers from five city schools and two suburban schools were rated on their behaviour and utterances by observers during three lessons and ratings were correlated with responses to a questionnaire measure that explored teachers' need for achievement, affiliation, control, and recognition. Ratings of self-confidence correlated positively with emotional warmth but correlated negatively with need for control, suggesting that those who use more controlling behaviours may be less confident in their teaching ability. Positive correlations were also identified between questionnaire ratings

of control, behavioural ratings for control and the use of controlling statements, indicating good agreement between observation and questionnaire measures.

Barfield and Burlingame (1974) developed this area of research by looking specifically at self-efficacy and its relationship with controlling teacher behaviour. This study also considered the impact of Socioeconomic Status (SES) and school type on teacher control. It included teachers from nine schools, three of which were classified as being from a low SES area, three from a middle SES area and three from a high SES area. Teachers completed measures of teaching style and self-efficacy. The results indicated that low teacher self-efficacy was significantly related to higher levels of control. This study also highlighted that teachers were significantly more controlling in low SES schools compared to middle and high SES schools. The authors suggest that this finding may be due to lower SES schools implementing 'a punishment centred bureaucracy' (p.11), however it is also possible that higher SES schools are able to attract teachers with higher self-efficacy and a less controlling teaching style.

The previous two studies have looked at how self-efficacy beliefs are related to other factors. The following papers highlight that self-efficacy is a complex construct to understand in the context of teaching. Woolfolk and Hoy (1990) explored the structure of efficacy and its relationship to teacher control. Participants were pre-service teachers at an American university who were required to complete measures related to teacher efficacy, control ideology (i.e. custodialism and humanism), motivational style, and their feelings about bureaucracy. Efficacy was split into teaching efficacy (i.e. the belief that teaching can impact on pupil achievement) and personal efficacy (i.e. the belief in one's ability to impact on pupil achievement). The results indicated that teaching efficacy was negatively correlated with control, but that personal efficacy was not related to teacher control. Regression analyses further identified a significant main effect of teaching efficacy and an interaction between personal efficacy and control. This suggests that when teachers have high levels of teaching efficacy, then higher levels of personal efficacy are related to a less controlling teaching style. However when teachers have low teaching efficacy, then higher levels of personal efficacy are related to more controlling teaching styles. This paper suggests that belief in oneself is not sufficient to reduce controlling teaching behaviours, but that teachers must also believe in the impact that

teaching can have on children's outcomes. The findings also suggest that self-efficacy is multi-dimensional and measurements should aim to capture its diverse components.

Woolfolk, Rosoff and Hoy (1990) extended these findings by further exploring how self-efficacy relates to teacher control. 55 teachers completed measures of self-efficacy, control ideology, motivational style and pupil motivation. Correlations between variables suggested that increased personal efficacy was linked to lower levels of control, and that teachers who believed more strongly that teaching could be successful (teaching efficacy) were more autonomy supportive. Multiple regression analyses indicated that only teaching efficacy was a significant predictor of decreased control. These findings provide further support for Woolfolk and Hoy's (1990) conclusion that increased teaching efficacy has a significant impact on reducing teachers' controlling behaviours.

Leroy, Bressoux, Sarrazin, and Trouilloud (2007) provided further evidence for the importance of self-efficacy by measuring the impact that self-efficacy has on factors that may contribute to more controlling behaviours, such as pressures from above and teachers' implicit theories about academic ability. Data was taken from the *Evaluation Bilan Ecole* (Overall School Evaluation) project commissioned by the French Ministry of Education which took data from teachers of children aged 10-11. These teachers were required to complete questionnaire measures of self-efficacy, motivational style, perceived pressure from above, and beliefs about academic ability, as well as providing some demographic information. Path analyses suggested that greater self-efficacy was related to a more autonomy supportive ideology. Findings also indicated that entity theory (i.e. beliefs that academic ability is a fixed trait) and perceived pressures from above have a significant negative impact on autonomy supportive behaviours. Seniority in terms of years of experience, had a significant positive impact on autonomy supportive teaching style, whereas the impact of incremental theory (i.e. beliefs that academic ability can be modified with effort) on autonomy support was mediated by self-efficacy. This finding implies that when teachers subscribe to an incremental theory ideology they are also likely to be more autonomy supportive if they have a greater sense of self-efficacy.

Overall this study adds more support to the literature which suggests that self-efficacy has a significant impact on the motivational style that teachers adopt. The research in this section has also highlighted that beliefs about the impact of teaching can be more important than a teachers' belief in their own teaching ability with regards to

developing more autonomy-supportive teaching behaviours. Furthermore, the findings suggest that a teacher's beliefs about the malieability of academic ability can be an important factor in determining controlling teaching styles.

1.4 Discussion

Controlling motivational styles have been linked to decrease pupil engagement and to diminish the quality of the teaching and learning experience for pupils (Grolnick & Ryan, 1987; Utman, 1997; Skinner & Belmont, 1993). However, research has consistently indicated that controlling motivational styles in teachers are prevalent within classrooms. Work has been undertaken to identify those factors that are important in understanding the presence of these behaviours. Reeve (2009) developed a conceptual framework which suggested that pressures placed on teachers to motivate pupils in more controlling ways could be characterised as coming from above (i.e. national and school level performance expectations), below (i.e. perceptions of pupils and pupil behaviours), and within (i.e. personal characteristics and beliefs). The research reviewed in this paper supports this conceptualisation of the pressures that lead to more controlling motivational styles, but this model does not necessarily encapsulate the complexities of research findings into issues such as culture and self-efficacy.

At a cultural level the research suggests that controlling behaviours are valued as an indicator of more competent teaching (Flink et al., 1990; Ryan et al., 1982) and that these behaviours are considered normal within more collectivist societies (Reeve et al., 2014). At a school level the findings indicate that controlling behaviours increase when teachers experience more pressure from above in the form of the curriculum and performance standards (Pelletier et al., 2002; Rocchi et al., 2013), as well as the pressure to adapt in line with other teachers in the school (Vitagliano & Licata, 1987). The research also suggests that controlling motivating styles are also more prevalent in schools with older pupils (Leppert & Hoy, 1972; Willower & Lawrence, 1979) and schools based in lower socioeconomic areas (Barfield & Burlingame, 1974).

Class level pressures include teachers' perceptions of how difficult it is to control pupils and pupils who are perceived as more difficult to control seem to elicit more

controlling responses (Rydell & Henricsson, 2004). Perceptions of low pupil motivation has been linked to increased controlling behaviours (Sarrazin et al., 2006), and diminished pupil engagement has also been related to more teacher control (Skinner & Belmont, 1993).

There is a considerable amount of research on individual pressures related to controlling motivational styles, and much of it focuses on completely independent factors with very little replication. Based on the studies reviewed individual pressures could be classified into individual risk factors, personality traits, and beliefs. The research suggests some of the individual risk factors of controlling teaching behaviours include being male, having a lower level of education, holding conservative political views and regularly attending church (Leppert & Hoy, 1972; Reeve et al., 1999; Cai et al., 2002). Many of these factors were highlighted across studies, lending support to their validity. There are also a wide range of personality traits that have been related to control in teachers including diminished creativity and being less accepting of others (Halpin et al., 1973; Brenneman et al., 1975). Halpin, Halpin, and Harris (1982) identified eight different personality traits that were related to controlling teaching behaviours, but no further evidence could be found that supported the importance of these traits. It is also notable that much of the research in this area has found relatively weak relationships between personality and motivating style which may indicate that these are not the most important predictors of teacher behaviour.

Finally there are a range of beliefs that have been associated with classroom teaching style. Increased control has been linked to objectivist epistemologies (i.e. the more simplistic belief that knowledge is objective), assessment orientations (i.e. goal focused behaviour that is based on evaluating possible options), entity theory beliefs (i.e. the belief that academic ability is fixed and not affected by effort), and achievement teaching beliefs (i.e. the belief that learning is about achieving tasks rather than fully mastering skills). However one question not addressed by the research in this area is whether the beliefs associated with controlling motivational styles are typically related to other factors such as lower levels of education or poor self-efficacy. Within this review additional attention was given to the impact of self-efficacy on controlling teaching behaviours due to the high number of studies that highlighted the significant impact that self-efficacy has on teacher control. It was suggested that self-efficacy includes a belief in

one's own ability to teach but that teaching efficacy can also have a significant and independent impact on motivating style.

Overall these findings suggest that teachers are more likely to adopt a controlling motivational style in the classroom if they are experiencing increased pressure from school administration to ensure that their pupils succeed; if their pupils are less engaged or are perceived as difficult to control; and if the teacher has a decreased sense of personal self-efficacy as well as a limited belief in teaching efficacy. Research has also linked a range of risk factors, personality traits and beliefs with control, but this review has not identified any papers that have replicated any of these findings. Finally it should be highlighted that some of the findings discussed in this paper have suggested that control is a trait that is valued by society as it seems to be linked to competency, which suggests that figures in positions of authority such as teachers may be more likely to behave in more controlling ways.

Future Directions for Research

Several papers in this review found that observers rate more controlling teachers as more competent (Flink et al., 1990; Ryan et al., 1982). This is an interesting and unexpected finding. Further research should focus on exploring the reliability of this finding across different samples as well as trying to highlight why this phenomenon may occur. Such research could also consider the potential implications for this finding in terms of exploring whether a cultural bias towards control impacts behaviour in different job roles within society.

When considering the papers that explored pressures from within, it is clear that these relied heavily on correlational analyses rather than considering cause and effect. The findings often suggested that internal determinants only had a small impact on control, but the research in this field is quite disparate which makes it difficult to draw conclusions about its relevance. A more focused approach to the impact of personality traits and personal beliefs that emphasises replication of findings and non-correlational designs would have a significant impact on helping researchers to understand this complex area of research.

Skinner and Belmont's (1993) research indicated that teacher control had a reciprocal effect on pupil engagement, which fits with previous findings that have linked control to pupils demonstrating diminished initiative (Grolnick & Ryan, 1987). Such findings have important implications for the impact of paraprofessionals in the school classroom (i.e. teaching assistants), since recent research has suggested that pupils who work closely with a teaching assistant tend to be less engaged with their learning and more dependent on support (Blatchford et al., 2009). Further research could explore whether teaching professionals more broadly, including those in a support role, utilise more controlling motivational styles. Such research should explore whether these controlling behaviours are a function of pressures from below (as suggested in the teaching literature) and if they lead to less pupil engagement.

Implications for Practice

Based on the research highlighted in this review there are several clear implications for practice. At a more systemic level, school leadership teams can be educated about the negative impact that pressurising teachers can have on the quality of teaching and on pupil achievement. The results of the review also suggest that school leadership teams should work to develop teacher self-efficacy, both in terms of belief in themselves, but also to develop and reinforce the belief that teaching can have a positive impact on the lives of the pupils. Moreover, interventions should aim to establish whether self-efficacy can be increased in professionals with a teaching role in school and whether increases would enable teachers to feel more able to manage potentially difficult classes in order to improve their own practice.

The research further suggests that educating teachers in the importance of autonomy supportive approaches (i.e. developing a natural interest in learning by encouraging more independent learning practices and adopting a more nurturing approach) is an important step in developing better quality teaching in the classroom. Deci (1995) emphasised that adopting an autonomy supportive motivational style was dependent on personality type, limited feelings of pressure, and development of autonomy supportive skills. Some research has focused on the impact of educating teachers on the importance of autonomy support and follow up observations have

indicated a significant increase in autonomy supportive teaching behaviours (Reeve et al., 2004; McLachlan & Hagger, 2010). This set of findings has implications for professionals such as Educational Psychologists (EPs) as they are well placed to deliver high quality training to teachers in order to further develop the teaching found in classrooms. Based on the findings of this review training should emphasise that control is not linked to competence; but rather that good quality teaching encourages pupil autonomy, pupil effort and the mastery of skills rather than focusing on grades.

Chapter 2:

An exploration of the impact of self-efficacy and child negative affect on the controlling motivational style of Teaching Assistants

2.1 Introduction

Between 2000 and 2012 the number of full-time equivalent Teaching Assistants (TAs) has almost trebled to 232,000 (DfE, 2013). This rise reflected the increased government focus on inclusion and the associated increase of children with learning difficulties attending mainstream schools (Kalambouka, Farrell, Dyson & Kaplan, 2007). It is widely assumed that the higher numbers of TAs in classrooms are beneficial for pupils' learning; but it is also acknowledged that working practices are varied (Blatchford, Russell, & Webster, 2012). Traditionally the TA role has been one of a parent-helper who acted as an assistant to the teacher in order to carry out a range of classroom tasks. However, TAs are increasingly expected to be more directly involved in working with individual pupils by scaffolding learning for children with Special Educational Needs (SEN) and running interventions. Despite the increased presence and reliance on TAs in the classroom, they are still reported to have low levels of education, poor rates of pay, and limited role specific training (Russell, Blatchford, Bassett, Brown, & Martin, 2005; Blatchford et al., 2012).

As a result of the introduction of TAs and the perpetual changes in their role, researchers have considered the impact of TAs on the classroom. Early studies suggested that the introduction of TAs into classrooms improved literacy and numeracy results compared to previous years where there was no additional adult support (Frelow, Charry, & Freilich, 1974; Loos, Williams, & Bailey, 1977). In addition, the presence of TAs has led to positive results in terms of their impact on pupil behaviour, teacher workload and interventions run by TAs (Blatchford et al., 2009; Farrell, Alborz, Howes & Pearson, 2010). Some more recent research similarly suggests that the presence of TAs in the classroom improves the quality of teaching (Lee, 2002; Ofsted, 2002), but there has been a more recent emergence of studies which suggest that TAs do not contribute as positively to

pupils' academic achievements as teachers frequently believe (Blatchford, Martin, Moriarty, Bassett, & Goldstein, 2002; Blatchford et al., 2009). For example, Gerber, Finn, Achilles, & Boyd-Zaharias (2001) and Blatchford et al. (2002) conducted large scale studies to look at the impact of class size on learning and found that classes with TAs did not achieve more highly. Further researchers have argued that TAs have more of a negative impact on individuals rather than the entire class.

Blatchford et al. (2009) published the results of a five year government funded research project that aimed to investigate the impact of TAs on pupil's with SEN. Across a sample of 153 mainstream primary and secondary schools they found a negative relationship between the amount of TA support and the academic progress that individual pupils made. This effect was significant, even after controlling for factors such as prior attainment and SEN. Furthermore research has suggested that TAs' levels of education and their experience do not correlate with children's attainment (Blatchford, Russell, Bassett, Brown, and Martin, 2004). Instead, it has been proposed that the negative relationship found between the amount of TA support and a child's academic progress could be linked to several other issues. Firstly, children allocated a high amount of time with a TA have been found to spend less time with teachers and peers (Blatchford et al., 2009; Webster & Blatchford, 2013). Secondly, findings have suggested that children supported by TAs often receive less appropriate teaching strategies such as being spoon-fed answers, being spoken to by two adults at once during input, and being asked to complete tasks that the TAs have made considerably easier (Blatchford et al., 2009). Lastly, it has been suggested that TAs tend to focus on task completion rather than the mastery of learning, which can impact on the quality of learning (Blatchford et al., 2009; Rubie-Davies, Blatchford, Webster, Koutsoubou, & Bassett, 2010). A mastery approach to learning has been linked to increased self-efficacy, a tendency to persist with more complex tasks and the use of more effective cognitive strategies (Midgley, 2002), whereas a task completion approach has been linked to pupils becoming more dependent on help from those supporting them (Moyles & Suschitsky, 1997; Blatchford et al., 2009; Ofsted, 2004). This may indicate that when TAs are deployed by teaching staff to keep a child on-task and to complete a piece of work, they are seen to have succeeded if the work is completed regardless of whether much learning has taken place.

The suggestion that TAs may increase pupils' dependency raises the possibility that TAs may use a more controlling teaching style with the individual pupils they work with. A controlling teaching style (Deci & Ryan, 1987) involves staff applying pressure to pupils in order to encourage them to think and behave in a particular way which focuses primarily on compliance (Reeve, 2009). The use of more directive or controlling styles have been associated with lowered pupil motivation and engagement, as well as pupils taking less initiative in their learning (Skinner and Belmont, 1993; Utman, 1997; Reeve, Jang, Carrell, Barch, & Jeon, 2004). The contrast to a controlling approach would be the use of more autonomy supportive teaching strategies. Autonomy support involves staff nurturing a natural interest in learning through providing rationale for requests, recognising the pupil's feelings, offering choice, and encouraging initiative (Mageau & Vallerand, 2003; Reeve, Deci, & Ryan, 2004). Such an approach to teaching encourages independence and the exploration of ideas, rather than emphasising the importance of doing what is required by a member of teaching staff.

The concept of autonomy supportive and controlling motivational styles emerged from Ryan and Deci's Self-Determination Theory (SDT; 2000); a meta-theory concerned with human motivation. One of the foundational components within this framework is the Basic Psychological Needs Theory (BPNT; Deci & Ryan, 2012); the notion that humans have three fundamental needs which they strive to fulfil in order to achieve a sense of wellbeing. These needs are autonomy, competency and feeling related to others. Support for BPNT has been highlighted in a range of fields, including education and healthcare, indicating that psychological needs satisfaction is linked to increased autonomous motivation (Sheldon, Elliot, Kim, & Kasser, 2001; Vansteenkiste, Lens, & Deci, 2006; Ng et al., 2012).

BPNT proposes that motivation will vary depending on how autonomous or controlled the behaviour is, how competent the individual feels in relation to the behaviour, and whether the individual feels related to others or isolated. In line with this theory, educational research has suggested a clear link between autonomy supportive teaching and increased pupil motivation (Guay, Boggiano, & Vallerand, 2001; Reeve, Nix, & Hamm, 2003). Studies have further highlighted that pupils who experience autonomy supportive teaching tend to achieve better grades, think more creatively and experience

lower levels of anxiety with regards to school work (Black & Deci, 2000; Koestner, Ryan, Bernieri, & Holt, 1984; Grolnick & Ryan, 1987).

While autonomy supportive teaching has been shown to be particularly beneficial for pupils, studies have found that many teachers use and value more controlling methods (Vitagliano & Licata, 1987; Sarrazin, Tessier, Pelletier, Trouilloud, & Chanal, 2006). Researchers have suggested that this may be due to autonomy support requiring considerable time and psychological availability, both of which are diminished when an individual is under pressure (Joussemet, Landry & Koestner, 2008). Reeve (2009) reviewed the literature in order to examine why more controlling motivational styles are frequently used in schools. He highlighted that teachers experienced particular pressure from three sources; national and school level performance expectations (labelled as 'pressure from above'); personal characteristics or beliefs that were more aligned with maintaining control over pupils (labelled as 'pressure from within'); and poor pupil engagement and behaviour (labelled as 'pressure from below').

'Pressure from above' has been shown to be an important factor in evoking controlling approaches in teaching staff. Research has suggested that teaching staff are rated as more competent by others when they exhibit higher levels of control whilst interacting with pupils (Deci, Spiegel, Ryan, Koestner, & Kauffman, 1982; Flink, Boggiano & Barrett, 1990). Furthermore studies have indicated that teachers experience pressure to behave in controlling ways because of national curriculum expectations, school performance standards and the pressure to conform with peer teaching styles (Vitagliano & Licata, 1987; Pelletier, Séguin-Lévesque, & Legault, 2002; Rocchi, Pelletier, & Lauren Couture, 2013).

Previous research into 'pressure from within' has highlighted that less controlling teachers tend to believe that learning should be focused on mastery rather than performance, that knowledge is subjective rather than objective; and they place more value on autonomy in their work (Reeve, 1998; Gordon, Dembo, & Hocevar, 2007; Roth & Weinstock; 2013). Further studies have suggested links between teacher control in the classroom and personality traits such as egotism, low self-esteem, and a lack of creativity (Leppert & Hoy, 1972; Halpin, Goldenberg, & Halpin, 1973: Halpin, Halpin, & Harris, 1982).

It is only in relation to self-efficacy (i.e., an individual's belief in their ability to teach) that research has illustrated a consistent positive relationship with teacher control (Wallen, Travers, Reid, & Wodtke, 1963; Barfield & Burlingame, 1974; Leroy, Bressoux, Sarrazin, & Trouilloud, 2007). Further findings extend this research to suggest that belief in the impact of teaching (referred to as teaching efficacy) may be an even more important predictor of lower levels of control (Woolfolk & Hoy, 1990; Woolfolk, Rosoff & Hoy, 1990).

With regards to 'pressure from below' (Reeve, 2009), several studies have looked at associations between teacher perception of pupils as difficult to control or unmotivated and pupil engagement. Studies indicate that teachers are more likely to behave in a controlling manner if they perceive pupils to be threatening or difficult to control (Willower & Lawrence, 1979; Rydell & Henricsson, 2004) or less motivated and engaged (Pelletier & Vallerand, 1996; Sarrazin, Tessier, Pelletier, Trouilloud, & Chanal, 2006; Skinner & Belmont, 1993). One study also found that more controlling teachers tended to use higher rates of praise; suggesting that praise can be used by teachers to encourage pupils to behave in a specific way (Deci, Spiegel, Ryan, Koestner, & Kauffman, 1982). These findings have important implications for TAs as motivation and engagement have been highlighted as key areas of concern for them in their work with individual pupils who have SEN (Mackenzie, 2011; Higgins & Gulliford, 2014). However, the literature has not considered the influence of factors such as child self-efficacy on teacher control in the same way it has considered the impact of teacher self-efficacy. This is a concern as pupil self-efficacy is highly linked to academic motivation (Schunk, 1991; Zimmerman, Bandura, & Martinez-Pons, 1992) and hence lower levels of self-efficacy might lead to teachers experiencing more pressure from below due to lower levels of pupil motivation.

The research discussed in relation to pressure from above, within, and below demonstrates a broad range of factors that may pressurise teaching staff to develop more controlling approaches to teaching pupils. These papers were primarily based on teachers, but this is likely due to the absence of research on other members of teaching staff, such as TAs. However, the three types of pressure highlighted as leading to increased control in the classroom also seem to be relevant to TAs, who have been shown to experience pressure from above (e.g. teacher expectations) and pressure from below

(e.g. difficulties with pupil engagement) (Higgins & Gulliford, 2014). In addition, if personal characteristics (e.g. low self-efficacy) are considered to influence teachers using controlling teaching styles, then these should also impact on other education staff. Despite this, there is currently no research exploring whether TAs are utilising more controlling teaching styles with the individual pupils they work with or what factors may be influencing their use of such approaches. Additionally, it may be that TAs experience different types of pressure as their role can be quite different to that of a teacher, especially due to the amount of time they spend with individual children rather than a whole class. For this reason comparisons could be drawn between a TA and a parent, particularly as TAs are described as having a more 'motherly approach' compared to teachers (Blatchford et al., 2009, p. 86). TAs themselves have described their role as being more nurturing than a teacher whilst still being education based; 'I'm not the class teacher and I'm not her mum – so I'm that person in between' (Webster & Blatchford, 2013, p. 47).

Educational research into adults utilising controlling approaches towards children has primarily focused on controlling teaching methods towards a whole class. By contrast the controlling parenting literature has largely focused on the interactions between a parent and a child. Controlling parenting styles have been linked to a range of externalising and internalising behaviours in offspring, such as aggression and anxiety (Joussemet et al., 2008; Soenens & Vansteenkiste, 2010), whereas autonomy supportive parenting has been linked to greater academic achievement and better parental attachment (Turner, Chandler and Heffer, 2009; Whipple, Bernier & Mageau, 2010). In a similar way to the controlling teacher literature, research into the determinants of controlling parenting has also focused on the pressures experienced by parents, emphasising that factors which increase stress or anxiety seem to be linked to increased control. These stressors have typically been divided into three types; social contextual factors such as low socio-economic status or stressful life events (Conger, Patterson, & Ge, 1995; Grolnick, Weiss, McKenzie, & Wrightman, 1996); child behaviours such as oppositional behaviour, self-regulatory difficulties or decreased child motivation (Gurland & Grolnick, 2005; Joussemet et al., 2008); and individual factors such as high anxiety about the child, ego-involvement in a child's performance or a desire for one's child to

remain dependent on them (Grolnick, Gurland, DeCourcey, & Jacob, 2002; Gurland & Grolnick, 2005; Soenens, Vansteenkiste, & Luyten, 2010). Interestingly, it could be argued that these categories mirror Reeve's (2009) pressures for above, within, and below.

Parental control has typically been associated with excessive regulation of a child's activities, intrusive behaviour, and discouraging children's independent problem-solving (Bögels & Brechman-Toussaint, 2006). Theoretically, this could be assumed to limit a child's development of autonomy and competency, as well as making the world feel less controllable, which could result in the child experiencing increased anxiety. Additionally, research has suggested that a key component of controlling parenting is instilling anxiety into their offspring in order to increase compliance (Soenens & Vansteenkiste, 2010). However, a considerable amount of literature seems to suggest that it is offspring anxiety which serves as a better predictor of controlling parenting rather than parental anxiety (Hudson & Rapee, 2002; Moore, Whaley, & Sigman, 2004; Van Der Bruggen, Stams & Bögels, 2008). High levels of child anxiety appear to increase parental control because the parent attempts to control the environment in order to make it less stressful but the parent also becomes less emotionally sensitive due to the demanding nature of their child (Bögels & Brechman-Toussaint, 2006).

Based on the literature discussed it seems that both parental and educational fields of research place a significant emphasis on the pressure or stressors experienced by adults, which can lead them to develop more controlling ways of interacting with children. Controlling motivational styles have been specifically linked to attributes such as low self-efficacy and child-specific anxieties, as well as high levels of parental anxiety (Grolnick et al., 2002; Leroy et al., 2007; Van Der Bruggen et al., 2008). However, the anxiety levels of teaching staff have not yet been considered as a possible predictor of a controlling teaching style. Additionally, education research has not looked specifically at the impact of individual child characteristics on teaching style as it has focused primarily on whole class teaching. Yet the present study is concerned with the determinants of control in TAs, and their role tends to be largely based around individual work with a specific child. Because of this it is important to consider the parenting literature, which has explored individual child characteristics and has consistently highlighted the impact of child anxiety. If more anxious children are eliciting a higher level of control from the TAs

they work with then this could have a considerable impact on their educational outcomes as they may be more likely to become dependent on adult support.

The present study

Research that has considered the interactions between TAs and the children they work with is lacking, especially with respect to issues such as the emergence of dependency. Some researchers have proposed that children with SEN are not offered sufficient autonomy in the classroom and that TAs can take more control over the work they complete. Moreover, there has been no exploration of whether controlling behaviours characterise interactions between TAs and the children they work with or what might determine this style of interaction.

The present study firstly aimed to explore whether TAs exhibit controlling motivational styles in their work with pupils. The literature on the impact of TAs suggest that pupils can become quite dependent on TAs and hence this study aimed to consider whether this might be due to the use of more controlling teaching methods or even the use of less autonomy supportive methods. A second aim of the present study was to investigate what impact more controlling teaching strategies might have on a pupil, with regards to their approach to a task. Previous education and parenting research has suggested that increased control is linked to less motivation, persistence and more limited autonomous problem-solving skills. Hence it was important to consider whether this was also true of TA-pupil interactions. Finally, this study aimed to explore possible determinants of controlling motivational styles in TAs, specifically focusing on pressures from below and pressure from within. The parenting literature has focused on individual child characteristics and has suggested that child anxiety is a significant predictor of parental control. Based on such findings, this study aimed to explore whether child anxiety might also predict TA control during an individual interaction. TA anxiety was also measured in order to examine if this impacted on TA control, as parent anxiety has been linked to parental control. With regards to pressure from within, the teacher literature suggests that self-efficacy is one of the few consistent predictors of controlling behaviours towards pupils. Based on this finding, the present study focused on TA self-

efficacy as a possible predictor of TA control, and in addition, pupil's self efficacy was also explored.

It was hypothesised that (1) Increased control would be associated with lower levels of self-efficacy and higher levels of child negative affect. We further proposed that any association between TA control and negative affect would be moderated by self-efficacy and it was hypothesised that (2) self-efficacy would moderate the relationship between controlling behaviours and negative affect.

2.2 Method

Participants

Twenty two local head teachers were approached to take part in this project and 13 gave consent for their school's involvement. However 14 dyads dropped out over the course of the project and hence only 10 schools were involved in data collection. Participants were drawn from schools of differing geographical and socioeconomic areas, ranging from small, affluent village schools to large urban schools situated in more deprived areas.

The data was collected using a volunteer sample of 20 TA-child dyads. The sample consisted of 11 boys and 9 girls aged 7-11 (mean age = 8y8m, SD = 1.24) of mainstream primary schools in the South East of England who received at least 15 hours of TA support each week due to identified learning difficulties. Of those children who took part 11 were considered to have moderate learning difficulties, 6 children were diagnosed with Autistic Spectrum Disorder (ASD) in combination with learning difficulties, 2 had been identified as having a severe language impairment which impacted significantly on their learning, and 1 child had a diagnosis of Downs Syndrome. TAs (N = 20, mean age = 49.50, SD = 6.60) were all female. The TA-Child dyads had been working together between 1 and 4 years.

Teaching Assistant Measures

TA background questionnaire. TAs completed a background questionnaire that included questions related to their job role, qualifications and how much time they spend with the child each week. Thirteen items formed a scale assessing the TA's perceived subject knowledge relative to teachers in a range of different areas including English, art and SEN (see Appendix G). This scale measured items on a 4-point likert scale from 1 (much less than teachers) to 4 (greater than teachers). The total scores had a range of 13-52 and the 13 items were shown to be a consistent measure in the present study (α = .93) with higher scores indicating a higher level of perceived subject knowledge compared to teachers.

Anxiety and Depression. The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) was used to assess TAs' negative affect. This scale consists of 14 questions; seven for the depression subscale and seven for the anxiety subscale. Participants are asked to rate their agreement with each item (e.g. I feel tense or wound up) using a 4 point Likert scale ranging from 0-3 (range = 0-21 in each subscale and higher scores indicate higher levels of negative affect). Scores between 0 and 7 suggest a normal level, 8-10 indicate a mild level, and scores above 11 are considered to show a moderate to high level of anxiety or depression. The HADS is a well-used screening measure and it has been shown to have good construct validity (anxiety subscale α = .83, depression subscale α = .82) in an extensive review of the literature (Bjelland, Dahl, Tangen Haug, & Neckelmann, 2002). In this study the anxiety subscale of the HADS reached a good level of internal consistency (α = .78), but the depression subscale did not score very highly (α = .36).

TA Self-Efficacy. The shortened Occupational Self-Efficacy scale (OCCSEFF-8; Schyns & Von Collani, 2002) measures one's self-efficacy in relation to their job and is made of 8 items (e.g. I feel prepared to meet most of the demands in my job.) Participants are asked to rate their agreement on a 6 point Likert scale ranging from 1

("completely true") to 6 ("not at all true"). The total score can range from 8-48 with high scores suggesting lower levels of self-efficacy. Schyns and Von Collani (2002) research suggests that the mean score is 20 (SD = 6.10), with a good level of internal consistency (α = .88). In this study the OCCSEFF-8 reached a high level of internal consistency (α = .92).

TA Control. The Etch-A-Sketch Observational Paradigm (Ginsburg & Grover, 2007) is a cooperative learning challenge that requires an adult and a child to work together in order to create a series of three images on an Etch-A-Sketch board. One of the participants controls the left knob, which draws horizontal lines, and the other uses the right knob that is used to draw vertical lines. Participants are asked to draw the images as accurately as possible and they are informed that their interactions creating the final image will be recorded so that this task can be coded.

The procedure and video analysis used was based on Ginsburg and Grover's (2014) revised child anxiety prevention study coding manual. This method was adapted by excluding several of the coding categories that had been developed for a parent sample as these were felt to be inappropriate to the working relationships between TAs and children. Seven adult behaviours were coded: control, warmth, anxiety, doubts concerning the child's competency, autonomy support, problem solving, and efficacy. Seven of the child's behaviours were also coded: warmth, anxiety, off-task behaviour, non-compliance, self-criticism, problem solving and efficacy. Table 1 provides a brief description of each behaviour category but further coding details can be found in Appendix I. For each scale the scores could range from 0 (never present) to 4 (present most of the time), and the scales were coded for each minute of the interaction up to 5 minutes (generating a possible score range for each behaviour from 0 – 20). Some of the interactions took longer than the allocated time and hence only the first five minutes were coded. All of the tapes were coded by one researcher, but the first three tapes were reviewed jointly alongside a second researcher in order to ensure the ratings were reliable and consistent. The agreement between researchers on these first three tapes was strong ($\kappa = .726$, $p<.01$).

Table 1: *A brief description of the behaviours that observers coded for during the etch-a-sketch interaction task.*

	Description
TA Control	Presence of intrusive commands to direct child's behaviour, unsolicited help, or over involvement in the task.
TA Warmth	TA expresses positive emotions toward child including praise, words and gestures of endearment, and affectionate gestures.
TA Anxiety	TA makes anxious, fearful or perfectionistic statements, expresses self-doubt, or seeks reassurance.
TA Doubts	TA asks about or expresses doubts about the child's competency.
TA Efficacy	TA expresses confidence and/or competence beliefs in self and/or child and communicates that TA and child are in control over outcomes.
TA Autonomy Support	TA accepts the opinions/problem solving strategies of the child. TA allows the child to make decisions.
TA Problem Solving	TA facilitates problem solving strategies and aids the child to approach the task in a positive way.
Child Warmth	Child expresses positive emotions toward TA including praise, words and gestures of endearment, and affectionate gestures.
Child Anxiety	Child makes anxious or fearful statements, seeks reassurance, or acts perfectionistically.
Child Off Task	Child is off task or removed from the task. Child may be turned away and maintain little eye contact.
Child Non-Compliant	Child does not comply with TA commands.
Child Self-Critical	Child takes responsibility for any negative events or outcomes such as saying "I'm no good".
Child Efficacy	Child expresses confidence and/or competence in self and/or TA and communicates that TA and child are in control over outcomes.
Child Problem Solving	Child suggests or engages in positive behaviours to solve or complete the task at hand.

Child Measures

Child's Anxiety and Depression. Parents, Teaching Assistants and children were asked to complete the shortened Revised Children's Anxiety and Depression Scale (RCADS

25; Ebesutani et al., 2012), which is adapted from the widely use RCADS (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000). This measure requires the participant to rate their agreement with each item on a scale from 1 ("never") to 4 ("always"). The RCADS 25 is made up of six subscales: Generalised Anxiety Disorder (GAD), Separation Anxiety Disorder (SAD), Social Phobia (SP), Panic Disorder (PD), Obsessive Compulsive Disorder (OCD), and Major Depressive Disorder (MDD). The total score on the 10 item depression subscale has a range of 10-40, with scores above 18 suggesting a clinical level of depression. The 15 item total anxiety subscale is made up of the other 5 subscales, which each contribute 3 items. The total anxiety score ranges from 15 to 60 and a score of 29 or above indicates a clinical level of anxiety. The 10-item depression scale (α = .80) and 15-item anxiety scale (α = .86) have demonstrated good reliability based on a sample of 1060 pupils (Ebesutani et al., 2012). In the current study TA responses for the shortened RCADS indicated good consistency in terms of the overall anxiety (α = .77) and depression scales (α = .73), and with some variability across individual anxiety subscales (GAD α = .83, SAD α = .52, SP α = .60, PD α = .40, OCD α = .37). Similarly, reliability for total anxiety (child report) was good (α = .74), and there was some variability across subscales (GAD α = .35, SAD α = .43, SP α = -.23, PD α = .79, OCD α = .73, Depression α = .45). The focus in the current study was on the overall anxiety and depression scores, but specifically on anxiety.

Child's Self-Efficacy. The Self-Efficacy Questionnaire for Children (SEQ-C; Muris, 2001) was completed by the children and TAs in this sample. It contains 24 items (e.g. how well can you pay attention during every class?) that can be divided into three subscales consisting of 8 items each. The three subscales are academic self-efficacy, social self-efficacy, and emotional self-efficacy. Participants rate their agreement with each item on a five point Likert scale from 1 ('not at all') to 5 ('very well'). The range for total scores is 24-120 (8-40 for each subscale) with high scores suggesting higher levels of self-efficacy. Studies suggest that the average score range may be 70-77, and that the scale has good internal consistency (α = .88) (Muris, 2001; Muris, 2002). In the current study this scale showed good internal consistency for both TAs (α = .91) and children (α = .91), both overall and in terms of the subscales; academic self-efficacy (TA α = .88, Child

α = .76); social self-efficacy (TA α = .84, Child α = .79); and emotional self-efficacy (TA α = .78, Child α = .87). The current study focused on overall and academic self-efficacy.

Procedure

Ethical approval was received from the University of Southampton prior to commencing this project. Specific attention was given to managing issues around deception, emotional responses to being filmed and supporting the children's understanding considering their special educational needs. For the purposes of recruitment the lead researcher approached the head teachers of all suitable schools within the local borough in order to gain consent for their school's participation. Of the 22 schools approached, 13 head teachers agreed to take part. Information about the study and consent forms were then sent to parents/carers and TAs via the schools once the SENCo had identified appropriate children. At this point a considerable number of TAs were concerned about taking part due to concerns about filming, but dropout rates seemed highly related to whether the SENCo was willing to reassure TAs about the nature of the filming and the confidentiality of the videos. TAs who agreed to take part were given a link to a set of online questionnaires along with their consent form and were asked to complete them prior to taking part in the task. The online questionnaires were presented in the following order: TA background questionnaire, OCCSEFF-8, HADS, SEQ-C, and RCADS 25. Parents/carers were sent the parent version of the RCADS and were asked to return it along with the consent form to the school[1]. See Table 2 for further detail about the completion of the various questionnaire measures.

On the day of the task the researcher was given access to a quiet and private room within the primary school in order to carry out the data collection. The researcher began by reading through the information sheet with the child and summarising key information in order to ensure a good level of understanding, since many children who participated did not have a functional reading level. The child was then given the opportunity to

[1] Of 20 parents who were asked to complete the RCADS only three returned the questionnaire; this measure was not therefore analysed in the current study.

discuss the project and ask any questions before being asked whether they would agree to take part. Once the child gave informed assent the TA-child dyads were asked to participate in a standardised play situation using an Etch-a-Sketch; a toy that allows pictures to be drawn by means of two knobs that control the drawing of either a horizontal or vertical line. Each dyad was given three images to copy according to a provided template. These images had to be copied collaboratively through the TA being given the use of one of the knobs and the child the use of the other one. The explanation provided to the participants was brief and objective based to emulate the type of instructions teachers often give to TAs during lessons.

The whole activity lasted 5-15 minutes and it was videotaped in order to be later coded. Due to the practicalities of the environments used to carry out this study the researcher remained in the room whilst the participants took part in the activity but instead engaged in separate activities and was unresponsive to the interactions between the TA and child.

Following the activity the researcher worked with the child in order to explain the SEQ-C and RCADS 25. Each item was read to the child and the researcher regularly checked for understanding, providing standard explanations of words or phrases if the child was unsure. This proved difficult for some of the more abstract concepts included in

Table 2: *Distribution of questionnaire measures to be completed by different participants*

	Child	*TA*	*Parent*
Background Questionnaire		✓	
Hospital Anxiety and Depression Scale		✓	
Occupational Self-Efficacy Scale		✓	
Revised Children's Anxiety and Depression Scale - Shortened Version	✓		
Revised Children's Anxiety and Depression Scale - Parent Version		✓	✓
Self-Efficacy Questionnaire for Children	✓	✓	

the RCADS 25, especially with regards to panic disorder and obsessive compulsive disorder. One child demonstrated a considerable lack of understanding when trying to complete the questionnaire measures and hence this was discontinued and the scores were not included. The TA and child were then fully debriefed. The child was given a certificate and a choice of an item of stationery to thank them for their engagement and the TAs were given a gift card for their participation.

2.3 Results

Descriptive statistics and correlational analyses were carried out to explore the data set. Full correlational matrices can be found in Appendix K. Much of the data was normally distributed, but histograms (see Appendix J) and other measures of distribution suggested that the following variables were not; how much time the dyads spent together each week; how many years the dyads had been working together; the TA's knowledge rating; TA measures of anxiety and depression on the HADS; and observational measures of TA control, TA efficacy, child anxiety and child efficacy. Nonparametric measures were used to analyse these variables.

TA Descriptive Statistics. We asked TAs (N=20) to complete a background questionnaire to indicate their level of expertise compared with teachers. The mean knowledge rating was low, demonstrating that TAs do not perceive that their subject knowledge is comparable to teachers. Occupational self-efficacy scores were lower than research has suggested is typical for the population (i.e., mean in the current sample was 16.65, compared with a typical mean of 20) and these scores were not found to correlate with any other measures so were excluded from further analysis. TAs' reports of their own anxiety and depression fell within the normal distribution for the general population; see Table 3.

Table 3: *Descriptive statistics for TA's (N=20) ratings of their knowledge compared to teachers. TA measures of self-efficacy, symptoms of anxiety, and symptoms of depression.*

TA Questionnaire	M	SD	Score range
Subject Knowledge	23.45	7.78	13-52
Self-Efficacy	16.65	5.47	8-48
Anxiety	3.90	3.13	0-21
Depression	1.20	1.20	0-21

Child Descriptive Statistics. Table 4 shows that child reported symptoms of anxiety and depression were higher than those reported by the TA for the child. Correlations suggest that TA and child measures of negative affect were not related. Similarly the self- efficacy subscales completed by TAs and children themselves did not correlate. Only academic self-efficacy was included in the correlational analyses due to the focus of this research on the educational environment.

Coded Behaviours. Many of the behaviours that were measured occurred infrequently across the sample and hence there was not sufficient variability to analyse these scales (including TA Doubts, Child Off Task, Child Non-Compliant, and Child Self-Critical; see Table 5 for more detail). Only low levels of control were observed compared to the high levels of problem solving behaviour and autonomy support. Child behaviours were observed less frequently than those for TAs.

Background Measures. Several significant correlations were identified between variables highlighted by the TA background questionnaire. TAs' knowledge ratings increased the longer they had worked as a TA ($r = .57$, $p < .01$) and older TAs had been a TA for a longer period of time ($r = .65$, $p < .01$). TAs who had worked with a child with SEN for more years rated themselves as more knowledgeable compared to teachers ($r = .58$, $p < .01$). TAs rated the child as more academically self-efficacious if they spent more time together each week ($r = .47$, $p < .05$) and if they rated themselves as less anxious ($r = .47$,

$p < .05$). In the observation task, TAs were more controlling ($r = -.47$, $p < .05$) and warm ($r = -.57$, $p < .01$) towards children that they spent less time with each week.

Questionnaire Measures. Table 6 provides information on the correlations between scales within measures and across measures by reporter (TA, Child, or Observation). All scales within questionnaires were highly correlated, demonstrating a good degree of internal consistency. Significant positive correlations were found between measures of child anxiety and depression within reporter (e.g., for TA and also for the child report), which suggests that the scales measured similar constructs. There were no correlations between reporters (TA and chil) on child anxiety and depression. A negative correlation was found between TA anxiety and TA perceptions of the child's academic efficacy ($r = -.47$, $p < .05$).

The TA measure of occupational self-efficacy was found to correlate positively with TA anxiety ($r = .54$, $p < .05$) and TA depression ($r = .44$, $p < .05$). Also, children's ratings of their depression was negatively related to TA's knowledge rating ($r = -.51$, $p < .05$) and TA depression ($r = -.68$, $p < .01$).

Table 4: *Descriptive statistics for child (N=20) and TA (N=20) report of child self-efficacy, child symptoms of anxiety and depression.*

	Child Measure		TA Measure	
	M	SD	M	SD
Academic Self-Efficacy	28.25	9.36	21.95	6.14
Social Self-Efficacy	23.85	9.59	24.65	6.34
Emotional Self-Efficacy	21.30	10.30	23.55	4.61
Total Self-Efficacy	73.40	26.72	70.15	14.56
Anxiety	16.95	8.76	7.60	4.71
Depression	10.75	4.74	7.05	3.49

Table 5: *Descriptive statistics for all behaviours that were coded by observers.*

	M	SD	Score Range
TA Control	1.20	1.47	0-5
TA Warmth	9.75	4.83	1-18
TA Anxiety	2.30	1.69	0-7
TA Doubts	0.45	0.76	0-2
TA Efficacy	1.40	1.39	2-17
TA Autonomy Support	9.25	4.95	2-17
TA Problem Solving	8.10	4.44	0-5
Child Warmth	5.30	4.52	0-15
Child Anxiety	1.75	2.17	0-6
Child Off Task	0.20	0.89	0-4
Child Non-Compliant	0.15	0.37	0-1
Child Self-Critical	0.10	0.45	0-2
Child Efficacy	1.00	1.26	0-4
Child Problem Solving	7.40	4.88	0-17

Note: Higher scores indicate more incidents of the behaviour over a 5 minute period. Due to a lack of variability several behaviours were excluded from the correlational analyses. These variables were TA Doubts, Child Off Task, Child Non-Compliant, and Child Self-Critical.

Associations between key variables. Further analyses explored the associations between questionnaire measures and the behaviours coded during the etch-a-sketch task (see Table 6). In line with the initial hypotheses TAs who rated the child as less academically self-efficacious behaved in a significantly more controlling manner during their interaction (r = -.46, p < .05). Also, children who were rated as more anxious by TAs demonstrated more efficacy based behaviours in the joint task. Some other correlations were found between questionnaire measures and the interactive task scales. TAs who perceived the child to be more depressed tended to use more efficacious behaviour towards them, and TAs who perceived the child to be more anxious seemed to elicit more efficacious behaviour from the child.

During the interactive task TAs who were more controlling also demonstrated significantly higher levels of problem solving behaviour. In contrast, more autonomy supportive behaviour in TAs was related to more problem solving behaviours from the child. Children who were observed to be more anxious were also found to behave significantly more warmly towards the TA, whereas TAs who were observed to be more anxious correlated with children who used more problem solving behaviour. There was also a relationship between reduced child efficacy in the task and increased TA problem solving behaviours.

Table 6: Two-tailed correlations between measures of anxiety, depression, and behaviours coded during the etch-a-sketch task.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Child self-report measures													
1. Anxiety	1												
2. Depression	.67**	1											
TA measures													
3. Child's Anxiety	.05	.00	1										
4. Child's Depression	-.03	.08	.62**	1									
Coded Behaviours													
5. TA Control$_s$	-.05	-.14	-.32	-.25	1								
6. TA Anxiety	.07	.10	-.06	-.05	.34	1							
7. TA Efficacy$_s$	.33	.36	.40^	.49*	-.40	-.13	1						
8. TA Autonomy Support	.15	.30	.40^	.03	-.34	.05	.29	1					
9. TA Problem Solving	.01	.13	-.28	-.38	.59**	.20	-.32	.05	1				
10. Child Warmth	-.03	.07	.44	.37	.09	.04	.21	.33	.07	1			
11. Child Anxiety$_s$	.05	.19	-.01	.04	.15	.37	.10	.18	.39	.51*	1		
12. Child Efficacy$_s$	.15	-.02	.44*	.14	-.31	.29	.07	.17	-.54*	.17	.00	1	
13. Child Problem Solving	.33	.23	.29	-.14	-.14	.50*	.05	.62**	.02	.20	.32	.31	1

Note: *(N = 20 TA-child dyads),* ^ = p≤.10, * = significant at p≤.05, ** = significant at p≤.01, $_s$ = Spearman's Rank Order Correlation

2.4 Discussion

The aim of this research was to explore whether controlling TA behaviours would be related to self-efficacy and negative affect in the children they work with. Exploratory correlational analyses indicated that TA control was positively associated with child reported academic self-efficacy, but no direct relationship was found between TA control and child or TA reported negative affect. However significant relationships were found between TA perceptions of child anxiety and the efficacy based behaviours exhibited by the child; specifically children who were perceived as more anxious demonstrated more efficacious behaviour during the interactive task. Other relationships between key variables highlighted by this study included a significant positive relationship between TA control and TA problem solving behaviours, which may suggest that problem solving which is initiated by the TA is also a measure or indicator of control. This interpretation is supported by further links between high levels of TA problem solving and children exhibiting lower levels of efficacy during the interaction task. The findings also indicated a significant relationship between TA autonomy support and evidence of the child problem solving, lending support to the proposition that autonomy support is an adaptive teaching strategy. These results were supplemented by further associations in the interaction task linked to the typical amount of time spent each week between the child and the TA. Increased time together was related to TA perceptions of the child as more academically self-efficacious, and less time was associated with TAs exhibiting more controlling behaviour and more warmth towards the child. These findings suggest that as a TA and child spend more time together the TA will perceive the child as more academically competent and hence will utilise a less controlling teaching style.

The TA Role

Research has suggested that children who spend a considerable amount of time with TAs tend to become dependent on receiving adult support in order to engage with their learning (Moyles & Suschitsky, 1997; Blatchford et al., 2009; Ofsted, 2004). It was suggested that this difficulty with autonomous learning could be linked to TAs using a more controlling teaching style as opposed to employing an autonomy supportive approach. In the present study children who received at least 15 hours of support each

week were recruited in order to ensure that they fitted within the scope of previous research into TAs working with children who have SEN (Blatchford et al., 2009). Some control was observed to be used by TAs, but considerably higher levels of autonomy support were seen in the interaction. Increased autonomy support was linked to increased child problem solving, which fits with findings from previous research about pupil creativity in complex tasks (Koestner et al., 1984). High levels of TA problem solving behaviour were also observed and additionally this was related to higher levels of control. This finding may suggest that, whilst TAs were not overly controlling, they frequently controlled the problem solving process and this behaviour was related to lower child efficacy during the task. Neither TA control nor TA problem solving were linked to child problem solving which fits with previous research suggesting that teacher control can lead to diminished initiative in pupils (Utman, 1997). However, child problem solving was linked to TAs demonstrating more uncertainty or anxious behaviours. This could suggest that when TAs are less controlling and more uncertain this allows space for children to be more autonomous in their learning.

Determinants of Control in Teaching Staff

Reeve (2009) suggested that it is the pressure that teaching staff experience which leads them to employ more controlling teaching styles. He categorised this pressure as coming from three directions; from above; from within; and from below. The current research project focused specifically on the latter two categories when considering the pressures placed upon TAs. In relation to pressure from within, research has suggested a significant link between high levels of teacher self-efficacy and lower levels of control in the classroom (Wallen et al., 1963; Barfield & Burlingame, 1974; Leroy et al., 2007). However this study was not able to corroborate this finding as there was no relationship between questionnaire measures of TA self-efficacy and other relevant measures. This may be a reflection of the current study employing an occupational self-efficacy measure as opposed to a specific teaching efficacy scale, or it may simply be related to the small number of participants recruited. However, some more tentative trends towards significance were found for TAs' efficacy in the task. A qualitative assessment of the data suggests that TA's more efficacious behaviours were correlated with less controlling TA behaviours, which fits with the previous teacher research discussed above. The data also

suggested a relationship between TAs' efficacy and their assessment of the child as being less emotionally self-confident. This suggests that efficacy based behaviour can be used to build children's confidence. The finding fits with the significant relationship found between TA efficacy and their perceptions of higher child depression, but interestingly there also appeared to be a relationship between TA efficacy and TA perceptions of higher child anxiety. Whilst these findings were not statistically significant, the small sample used in this study limited the power of the research and hence it is helpful to consider whether data that is trending towards significance reinforces the significant correlations that were found in the data. Based on this, it may be that there is a relationship between increased TA self-efficacy and lower level of controlling behaviour but this will need to be further investigated by researchers.

By comparison, the findings of the current study do suggest that TAs experience pressure from below to behave in a more controlling manner. Increased TA control was linked to lower levels of child self-report academic self-efficacy, suggesting that children who have less confidence in their ability may elicit more control from teaching staff. This finding was further supported by a trend towards significance in the relationship between children's problem solving behaviours and positive ratings of their own academic self-efficacy. In addition, lower levels of child efficacy in the task were linked to increased TA problem solving, which was also linked to control. The literature has not explored the direct impact of child self-efficacy on teacher control, but self-efficacy has been linked to increased academic motivation (Schunk, 1991), and pupil motivation has been identified as a determinant of control in the classroom (Skinner and Belmont, 1993).

Determinants of Control in Parents

The parenting literature has also been concerned with the impact of and reasons for controlling behaviour towards children and it has similarly been suggested that parents face pressures from above, within and below. With regards to pressures from below the research has indicated a strong link between increased child anxiety and increased control in parents. The current study aimed to test the proposition that child anxiety might also have a significant impact on teaching staff, especially in the case of TAs who frequently work in a one-to-one capacity with the child much like a parent would.

However this study did not find a link between these two variables, although it should be noted that the anxiety of participants in this study did not meet the clinical threshold. Trends towards significance in the data did indicate that children's anxious behaviour correlated with higher levels of TA problem solving. As TAs' problem solving behaviours were found to be highly related to control, this may indicate that there is a relationship between child anxiety and control but this study failed to capture this due to low power. Another trend in the data suggested a link between more autonomy supportive teaching styles and TAs perceiving children as more anxious. This may be indicative that it is the child's anxious behaviour that elicits control, separate from the adult's perceptions. Yet it may also suggest a lack of relatedness between the different measures of anxiety used in this study.

A relationship was found between TA anxiety and TA ratings of the child's emotional self-efficacy. This type of informant discrepancy has frequently been recognised in research as adults with increased mental health difficulties (particularly parents) tend to rate children's mental health as more of concern compared to other informants (De Los Reyes & Kazdin, 2005). Such a pattern of responses may also go some way to explaining the relationship found between TA report of child anxiety and the measure of child efficacy during the task. It may be that the TA's report of increased child anxiety was a reflection of their own anxious feelings and hence the child employed more efficacy based strategies to manage the adult's anxiety.

Limitations and Future Directions for Research

During the data collection process, considerable difficulties were experienced with regards to recruitment. A high drop out of both schools and TAs was experienced, as well as a smaller and expected rate of withdrawal by parents. This may mean that there was some attrition bias within the sample, which could mean that some of the less self-confident and possibly more controlling TAs did not take part. School's tended to explain their withdrawal from the research by explaining that no TAs had volunteered for the study. This emphasised the importance of approaching schools personally for this type of research rather than using more general school advertisement strategies. With regards to TA drop-out, this typically seemed to be related to anxiety about being filmed and the

possibility of their performance being shared with others. It may have been helpful to have placed more emphasis on the confidential nature of the information collected and that only the main researchers would view the tapes. However these facts were clearly included in the information provided and a large proportion of TAs admitted to not having read the sheet. This further emphasises how crucial it is to work with a specific member of staff with responsibility for managing the TAs in the school, as within this study it was frequently such staff members who reassured TAs about what would be required and the limited nature of the filming.

Because of the difficulties with recruitment there were several limitations that may have impacted on the quality of this piece of research. Firstly the small sample of just 20 participants meant that it was difficult to generalise the findings to the wider TA population. The sample size also likely impacted on the limited findings of the statistical analyses, especially as the restricted number of relationships identified meant that regression modelling techniques could not be employed to identify specific predictor variables. Future research could consider using some of the well-validated questionnaire measures of control in teaching staff (Deci, Schwartz, Sheinman, & Ryan, 1981; Reeve, Bolt, & Cai, 1999) or classroom observational designs in order to avoid such difficulties. This may also enable researchers to see more representative levels of TA control as participants may be less impacted on by the social desirability bias inherent with filmed activities.

Another factor that this study did not address was the impact of the child's learning difficulties on the amount of controlling behaviour exhibited by the TAs. This is important to consider as there were some anecdotal differences observed during the interaction task. Firstly most of the children with ASD took far more control during the task which meant that their TAs tended to simply follow the child's lead. By comparison the child with Down's syndrome found the task significantly more difficult than any of the other participants and hence the TA had to take a lot more control as the task was well beyond the child's independent capabilities. The aim of this study was to recruit a more homogenous group of MLD pupils but this proved difficult due to the limited numbers of available children and the unusually high prevalence of ASD in the local area. Future research should carefully consider the demographics of the children they are recruiting or

possibly include measures of the child's academic ability in order to control for this confounding factor.

The ages and learning difficulties of the children within this sample may also have impacted on the validity and reliability of the child measures of self-efficacy and anxiety that were chosen. The SEQ-C measure of self-efficacy was a less well-known questionnaire but it was appealing due to its ability to consider efficacy within three domains; academic, emotional, and social. The results on this measure suggested good reliability and the children's anecdotal comments indicated a relatively clear understanding of the concepts measured. Yet there were various Americanisms used in the items that seemed to be confusing for the children, which was managed through the researcher using a set of standardised definitions for often misunderstood terms. Overall, whilst there were some difficulties with this measure it appeared to provide a valid representation of self-efficacy. By contrast, the RCADS-25 was chosen as it is a widely used measure of child negative affect. The questionnaire measures anxiety based on five different anxiety disorders, which includes generalised anxiety disorder, separation anxiety disorder, social phobia, panic disorder, and obsessive compulsive disorder. Based on anecdotal comments during the assessments the children seemed familiar with the concepts of general worry as well as separation and social anxieties. However, they did not always seem to fully understand items related to panic disorders or obsessive compulsive difficulties, such as comments such as their parents are always telling them to clean their hands or that they sometimes feel shaky when they're outside in the cold. Whilst the researcher tried to address such comments they seemed to demonstrate a more general lack of understanding of these two complex concepts, which does call into question the validity of these two subscales with the sample used.

Finally, there are some other methods of analysis that could have been used in this study in order to gain an alternative perspective on the data collected. A quantitative method of analysis was chosen as this was an exploratory study, which aimed to find out whether there would be measurable amount of TA control and if any child factors, such as self-efficacy or anxiety, might predict controlling behaviour. However, as the interactive task was filmed the activity could have also been analysed qualitatively to look at the relationships between the dyads. The data analysis used was also reflective of previous studies that used the Etch-A-Sketch Observational Paradigm. However, an alternative

approach in order to bolster the number of results could have been pooling the data across related scales. This may have meant that the results were less limited by the small sample size. However, this appeared to be the first time that an etch-a-sketch observation procedure was used with education staff, and TAs specifically. An analysis of the individual factors allowed for a more detailed assessment of where relationships might lie in order to inform future research in this area.

Impact

This study provides some initial exploration into the field of TA control and highlights some key relationships, such as those between TA control and child academic self-efficacy and also between TA autonomy support and child problem solving. The design of this research meant that causation could not be investigated, but as an early study in the field of motivational styles in TAs these findings contribute some interesting perspectives and could inspire future research in this area.

Within education settings, the findings of this research should highlight the importance of providing training to TAs around the use of more autonomy supportive strategies in the classroom. These strategies should emphasise the importance of encouraging children to actively problem solve rather than relying on TAs to initiate this behaviour. The findings also suggest that developing the relationship between a TA and child is important as TAs behave in a more controlling manner towards children they spend less time with. Finally this research reinforces the importance of developing children's academic self-efficacy, because when self-efficacy is low it is likely to elicit more control from staff. Educational Psychologists and other education-based professionals are well placed to advise staff on supporting children's self-efficacy and to provide interventions focused on building children's confidence in their ability to learn.

Conclusion

The present research study focused on identifying possible factors that might contribute to teaching assistants using a controlling motivational style in their work with

children who experience difficulties with learning. The main finding was that increased TA control was linked to lower levels of child academic self-efficacy. This relationship suggests that TAs may experience pressure from below to behave in a more controlling way when a child is less confident in their academic ability. Increased TA control was also linked to increased TA problem solving, suggesting that when adults take the lead with a complex task they may be controlling the situation and hence limiting the child's involvement. One other key finding was that TA autonomy support was related to increased child problem solving, which illustrated that encouraging pupils to learn more independently can have a positive impact in relation to how they approach a task. Overall the results of this study reinforce the importance of employing autonomy supportive approaches in the classroom. Additionally these findings highlight that an important aspect of developing the role of teaching assistants may be to provide further education around the risks of using a controlling teaching style and the possible negative impact this can have on the outcomes for children with learning difficulties.

Appendices

Appendix A Table of Literature Review Articles

	Author	Country	Sample Size	Sample Type	Ages of children taught	Measures
1	Wallen, Travers, Reid, & Wodtke (1963)	USA	118	Teachers	5-12	• Observer ratings of teacher behaviour during a lesson • Teacher Preference Schedule (Stern, Masling, Denton, Henderson, & Levin, 1960)
2	Leppert & Hoy (1972)	USA	934	Teachers	5-14	• Activities Index (Stern, 1970) • Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967)
3	Halpin, Goldenberg, & Halpin (1973)	USA	99	Education Undergrads	-	• Torrance Tests of Creative Thinking – Verbal Form B (Torrance, 1966) • What Kind of Person Are You Test (Torrance, 1962) • Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967)
4	Barfield & Burlingame (1974)	USA	275	Teachers	5-18	• SES background of school • Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967) • Teacher Efficacy Scale (Gibson & Dembo, 1984)
5	Brenneman, Willower, & Lynch (1975)	USA	276	Teachers	Not included	• Self-Acceptance and Acceptance of Others Form (Berger, 1952) • Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967)
6	Willower & Lawrence (1979)	USA	373	Teachers	5-18	• Student Threat Form (Lawrence, 1977) • Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967)
7	Deci, Spiegel, Ryan, Koestner, & Kauffman (1982)	USA	40	Psychology Undergrads	-	• Observer ratings of two experimental groups

Appendix A

	Author	Country	Sample Size	Sample Type	Ages of children taught	Measures
8	Halpin, Halpin, & Harris (1982)	USA	110	Education Undergrads and Postgrads	-	• Sixteen Personality Factor Questionnaire – Form A (Cattell, Eber & Tatsuoka, 1970) • Tennessee Self-Concept Scale (Fitts & Roid, 1964) • Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967)
9	Vitagliano & Licata (1987)	USA	118	Hearing and Non-Hearing Teachers	5-18	• Semi-Structured Interview • Three versions of the Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967) to measure perceptions of different types of teacher
10	Flink, Boggiano, & Barrett (1990)	USA	15 267	Teachers Pupils	9-10 -	• Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1981) • In the Classroom Questionnaire (Harter, 1981) • Pupil performance on a task • Pupil evaluation of liking for task*
11	Woolfolk & Hoy (1990)	USA	182	Pre-service Teachers	-	• Teacher Efficacy Scale (Gibson & Dembo, 1984) • Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1981) • Work Environment Preference Schedule (Gordon, 1970) • Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967)
12	Woolfolk, Rosoff, & Hoy (1990)	USA	55	Hebrew School Teachers	11-13	• Teacher Efficacy Scale (Gibson & Dembo, 1984) • Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1981) • Teacher Perception of Student Motivation Scale* • Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967)

	Author	Country	Sample Size	Sample Type	Ages of children taught	Measures
13	Skinner & Belmont (1993)	USA	14 144	Teachers Pupils	8-11 -	• Reports of teacher-pupil interactions completed by teachers and pupils completed in the fall term and then the spring term
14	Pelletier & Vallerand (1996)	Canada	30 30	Psychology Undergrads High School Pupils	- -	• Observer ratings of teacher – pupil language interactions • Questionnaire measure to assess participants' perceptions of the interactions during a teaching task completed by the Undergrads and High School Pupils*
15	Reeve (1998)	USA	Study 1: 142 Study 2: 159	Pre-service Teachers Pre-service Teachers	- -	• Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1981) • General Causality Orientations Scale (Deci & Ryan, 1985) • Study 2 also used a questionnaire to examine post-experimental views*
16	Reeve, Bolt, & Cai (1999)	USA	Study 1: 550 Study 2: 61 pairs Study 3: 46	Pre-service Teachers Pre-service Teachers Teachers	- - 5-11 or 14-18	• Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1981) • In Study 2 Observer ratings of teacher behaviour during lessons and a post-session questionnaire* were also used • In Study 3 How I Teach and Motivate a Disengaged Student Questionnaire* was also used.
17	Cai, Reeve, & Robinson (2002)	USA	223	Teachers, Home Educators & Pre-service Teachers	-	• Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1981) • Questions about personal characteristics*

Appendix A

	Author	Country	Sample Size	Sample Type	Ages of children taught	Measures
18	Pelletier, Séguin-Lévesque, & Legault (2002)	Canada	254	Teachers	6-18	• Constraints at Work Scale* • An adaption of The Academic Motivation Scale (Vallerand, Pelletier, Blais, Briere, Senecal, & Vallieres, 1992) • Work Motivation Inventory (Blais, Lachance, Vallerand, Briere, & Riddle, 1993) • Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1981)
19	Rydell & Henricsson (2004)	Sweden	86	Teachers	6-9	• Disciplinary Strategy Preferences Vignettes based on the Parental Discipline Interview (Scarr, Pinkerton & Eisenberg, 1991) • Control of Child Behaviour Scale, a subscale of the Parental Locus of Control scale (Campis, Lyman & Prentice-Dunn, 1986) • Measure of Teacher Orientation based on Granström's work on teaching characteristics (1996) • Observer ratings of Teacher Behaviour in 16 of the 86 classrooms
20	Sarrazin, Tessier, Pelletier, Trouilloud, & Chanal (2006)	France & Canada	7	PE Teachers	11-15	• Observer ratings of Teacher Behaviour • Sport Motivation Scale (Pelletier et al., 1995) • Observer ratings of teacher-pupil interactions • Questionnaire measuring teachers perceptions of students' motivation in the completed lesson*
21	Gordon, Dembo, & Hocevar (2007)	USA	109	Teachers	5-18	• Measure of self-regulation based on Miller, Greene & Montalvo (1996) and Gredler & Garavalia (2000)*

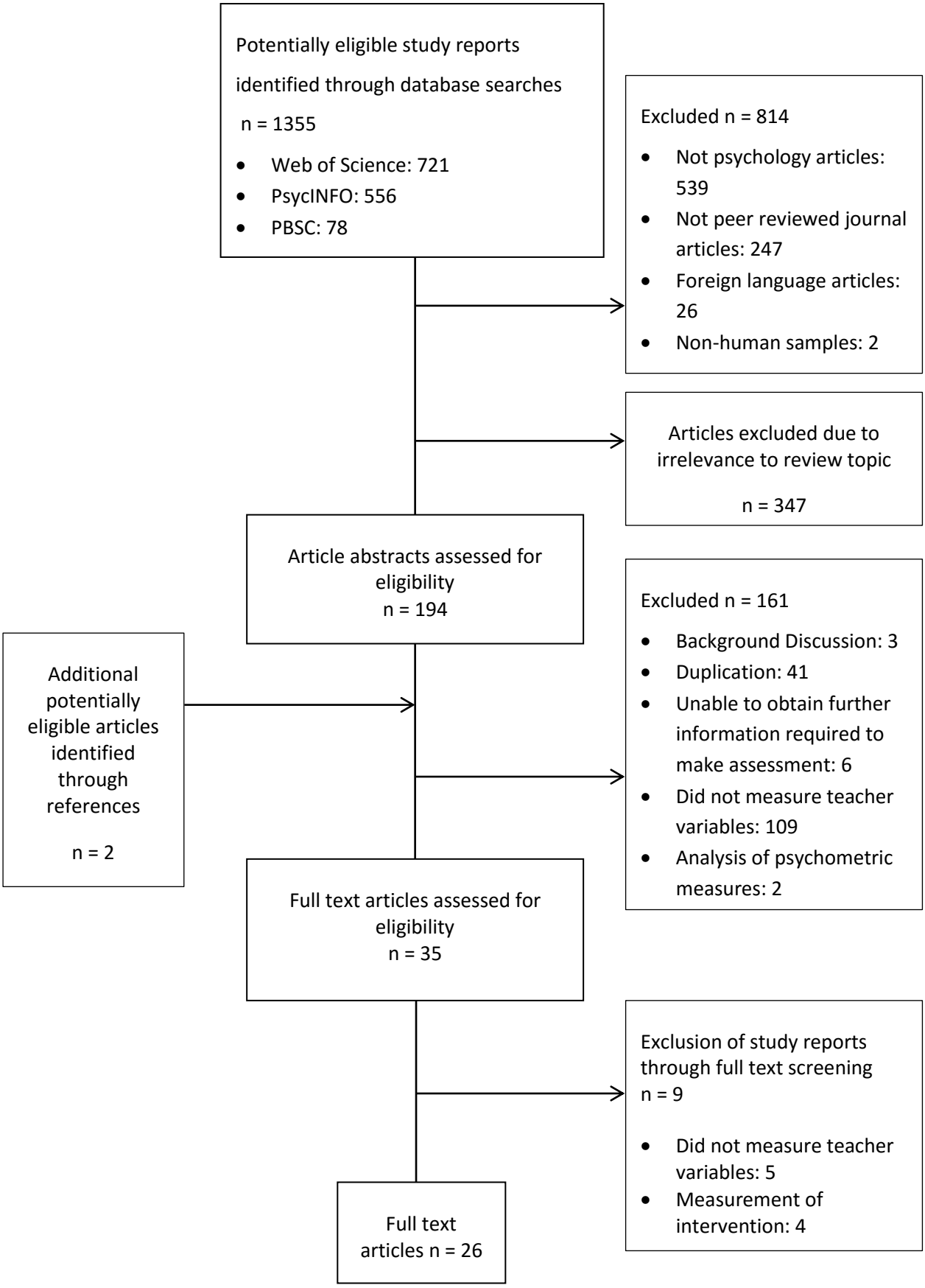
	Author	Country	Sample Size	Sample Type	Ages of children taught	Measures
						• Two scales of the Patterns of Adaptive Learning Scale (Midgley et al., 1997) • A modified version of the Pupil Control Ideology Form (Willower, Eidell & Hoy, 1967)
22	Leroy, Bressoux, Sarrazin, & Trouilloud (2007)	France	298	Teachers	10-11	• Teacher Efficacy Scale (Gibson & Dembo, 1984) • Abridged version of the Nature of Ability Beliefs Questionnaire (Sarrazin et al., 1996) • Constraints at Work Scale (Pelletier et al., 2002) • Adaption of the Learning Climate Questionnaire (Williams & Deci, 1996)
23	Pierro, Presaghi, Higgins, & Kruglanski (2009)	Italy & USA	Study 1: 378 Study 2: 96 Study 3: 190	Teachers Teachers High School Pupils	14-19 14-19 -	• In Studies 1 and 3 Locomotion and Assessment Scales (Kruglanski et al., 2000) were used • In Studies 1 and 2 Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1981) was used. • In Study 2 a personal memories task was used • In Study 3 an adapted version of the Learning Climate Questionnaire (Williams & Deci, 1996) was used.
24	Rocchi, Pelletier, & Lauren Couture (2013)	Canada	303	Youth Basketball Coaches	-	• Modified version of the Constraints at Work Scale (Pelletier, Séguin-Lévesque, & Legault, 2002) • Revised Sport Motivation Scale (Pelletier, Rocchi, Vallerand, Deci, & Ryan, 2013) • Modified version of the Work Motivation Scale (Tremblay, Blanchard, Taylor, Pelletier, & Villeneuve, 2009)

Appendix A

	Author	Country	Sample Size	Sample Type	Ages of children taught	Measures
						• Shortened version of the Interpersonal Behaviours Scale (Beaudry & Pelletier, 2008)
25	Roth & Weinstock (2013)	Israel	23 622	Teachers High School Pupils	12-14 -	• Teachers completed an epistemological beliefs questionnaire (Hofer, 2000) • Pupils completed the Autonomy Supportive Teaching Scale (Roth, Kanat-Maymon, & Bibi, 2011) and a questionnaire measuring their motivation based on Ryan and Connell's (1989) work
26	Reeve et al. (2014)	Belgium (98), Israel (111), Israeli Bedouins (123), Jordan (99), South Korea (74), Norway (124), Singapore (106) & USA (80)	815	Teachers	3-18	• Vignettes to measure teachers' motivational style* • Questions to measure motivating style*

Note: *****Measures created for the purpose of the study.

Appendix B Flow Chart of Study Selection Process



Appendix C Research Governance and Ethics Committee Approval

University of
Southampton

Chantelle Nattrass
School of Psychology,
University of Southampton,
Southampton,
Hampshire.
SO17 1BJ

Date: 29th October 2014

Dear Chantelle,

Professional Indemnity and Clinical Trials Insurance

Project Title: An exploration of the moderating role of self-efficacy to understand associations between over control in teaching assistants and child negative affect.

ERGO Ref: 11068

Participant Type	Number of participants	Participant age group
Healthy volunteers	33	Adults
Healthy volunteers	33	Minors

Thank you for submitting the completed questionnaire and attached papers.

Having taken note of the information provided, I can confirm that this project will be covered under the terms and conditions of the above policy, subject to written informed consent being obtained from the participating volunteers or their parent, guardian, next of kin as appropriate.

If there are any changes to the above details, please advise us as failure to do so may invalidate the insurance.

Mrs Jenny King
Senior Insurance Services Assistant

Tel: 023 8059 2417
email: jsk1n08@soton.ac.uk
Finance Department, University of Southampton, Highfield Campus, Southampton SO17 1BJ U.K.
Tel: +44(0)23 8059 5000 Fax: +44(0)23 8059 2195 www.southampton.ac.uk

Your Ethics Submission (Ethics ID:11068) has been reviewed and approved

ERGO [ergo@soton.ac.uk]
Sent:27 October 2014 10:53
To: Nattrass C.M.

Submission Number: 11068
Submission Name: An exploration of the moderating role of self-efficacy to understand associations between over control in teaching assistants and child negative affect.
This is email is to let you know your submission was approved by the Ethics Committee.

Please note that you cannot begin your research before you have had positive approval from the University of Southampton Research Governance Office (RGO) and Insurance Services. You should receive this via email within two working weeks. If there is a delay please email rgoinfo@soton.ac.uk.

Comments
1.Many thanks.

Your Ethics Amendment (Ethics ID:12852) has been reviewed and approved

ERGO [ergo@soton.ac.uk]
Sent:04 November 2014 15:44
To: Nattrass C.M.

Submission Number 12852:
This email is to confirm that the amendment request to your ethics form (An exploration of the moderating role of self-efficacy to understand associations between over control in teaching assistants and child negative affect. (Amendment 1)) has been approved by the Ethics Committee.

Please note that you cannot begin your research before you have had positive approval from the University of Southampton Research Governance Office (RGO) and Insurance Services. You should receive this via email within two working weeks. If there is a delay please email rgoinfo@soton.ac.uk.

Comments
None
Click here to view your submission

Your Ethics Amendment (Ethics ID:14490) has been reviewed and approved

ERGO [ergo@soton.ac.uk]
Sent:27 March 2015 12:56
To: Nattrass C.M.

Submission Number 14490:
This email is to confirm that the amendment request to your ethics form (An exploration of the moderating role of self-efficacy to understand associations between over control in teaching assistants and child negative affect. (Amendment 2)) has been approved by the Ethics Committee.

Please note that you cannot begin your research before you have had positive approval from the University of Southampton Research Governance Office (RGO) and Insurance Services. You should receive this via email within two working weeks. If there is a delay please email rgoinfo@soton.ac.uk.

Comments
1.This is all fine, but please let the rgo office know about the end date extension - they deal with that and with the insurance cover. Use the initial ERGO number and this new one when you let them know (rgoinfo@soton.ac.uk). Thanks

Appendix D Consent Forms

UNIVERSITY OF Southampton

Participant Information Sheet *(Version 3, 21.03.2015)*

Study Title: An exploration of the interactions between children with learning difficulties and the teachings assistants who support them.

Researcher: Chantelle Nattrass

ERGO Study ID: 11068

Please read this information carefully before deciding whether you wish to take part in this research. If you are happy to take part, please complete the attached consent form.

What is the research about?

Recently there has been an increased amount of research looking at the important role of Teaching Assistants (TAs) in supporting children with Special Educational Needs (SEN). However, there is still very little known about how TAs interact with children who have learning difficulties in order to support their educational and emotional needs. This study aims to explore the interactions between TAs and the children they individually support in order to gain a greater understanding of how pupils with SEN can be taught more effectively. This study also aims to consider whether the TAs or the child's worries or concerns about their ability can impact on these interactions.

Why have I been chosen?
All local primary schools have been contacted to take part in this research. Within those schools that have agreed, all TAs who provide a considerable amount of individual support to a child with learning difficulties have been asked to participate.

What will happen if I take part?
This research will require you, the child you work with and his/her parents to fill out some questionnaires in order for the researcher to gain a better understanding of your feelings, the child's feelings, how he/she manages in school, and how he/she is supported. You will be required to complete an online questionnaire (https://www.isurvey.soton.ac.uk/12145) along with the attached consent form before you can take part in this study. The child you work with will complete two short questionnaires with the support of the researcher whilst at school. Following the completion of these questionnaires, you and the child you work with will take part in a joint activity lasting no more than 30 minutes. This activity will be filmed so that the researcher can investigate the interactions between yourself and the child. These videos will only be viewed by the researcher.

Upon completion of the questionnaires and activity, you will receive a gift voucher to thank you for your participation. The researcher will also spend some time discussing the aims of this research and give you the opportunity to ask any questions you may have.

Are there any benefits to taking part?
With the September 2014 special education needs and disabilities reforms, the whole educational system is changing with regards to how children with SEN are supported. One aspect of this reform will be the way that additional support is allocated to schools, which will certainly impact on the ways that TAs are utilised. The aim of this study is to build a better understanding of how TAs support the learning of children with SEN, in the hope that these findings will provide further insight into how TAs could work more effectively. The good practice that is identified as part of this research could be important for schools as they make changes to the support provided for children with SEN.

Are there any risks involved?
The proposed research is **not** considered to be upsetting for the participants involved. Nonetheless, the researcher will conduct a thorough risk assessment to ensure any potential risks are minimised. Furthermore, the proposed study is subject to ethical and research governance approval from the University of Southampton. All participants will be fully debriefed following the activity and you will be provided with contact details for local support services in case you have a negative reaction to any aspect of this research. You have also been provided with contact details for the researcher should you have any further questions regarding the research.

Will my participation be confidential?
In accordance with the Data Protection Act, all of your data will remain confidential. All recordings and questionnaire data will be stored securely and will only be accessed by the named researcher. Your name will not be recorded on any questionnaires and will not be used at any point during the written report.

What happens if I change my mind?
You may withdraw your consent at any time without consequence. As well as giving your written consent, you will also be asked whether you wish to take part before the activity begins. If at any point during this research you decide that you do not wish to continue, you will be free to withdraw from the research.

What happens if something goes wrong?
In the unlikely case of concern or complaint, please contact the chair of the ethics committee as detailed below:
Chair of the Ethics Committee,
School of Psychology,
University of Southampton,
Southampton,
Hampshire.
SO17 1BJ
Tel: (023) 8059 5578.

Email: slb1n10@soton.ac.uk

Where can I get more information?
If you would like more information please contact the researcher via email:

Researcher: Chantelle Nattrass

Email Address: cmn1g12@soton.ac.uk

Alternatively, any concerns or issues can be directed to Dr Julie Hadwin (Research supervisor, University of Southampton – J.A.Hadwin@soton.ac.uk).

Thank you for taking the time to read this information sheet.

Chantelle Nattrass

Trainee Educational Psychologist

University of Southampton

UNIVERSITY OF Southampton

CONSENT FORM (Version 3, 21.03.2015)

Study title: An exploration of the interactions between children with learning difficulties and the teachings assistants who support them.

Researcher name: Chantelle Nattrass (cmn1g12@soton.ac.uk)

ERGO Study ID number: 11068

Please initial the boxes if you agree with the statements:

I have read and understood the information sheet (*Version 3, 21.03.2015*) and have had the opportunity to ask questions about the study	☐
I agree to take part in this research project	☐
I agree to being recorded using a video recorder	☐
I understand that participation is voluntary and that I may withdraw at any time without my legal rights being affected	☐

I have read and understood the information about this study. In consenting, I understand that my legal rights are not affected. I also understand that data collected as part of this research will be kept confidential and that published results will maintain that confidentiality. I finally understand that if I have any questions about my rights as a participant in this research, or if I feel that I have been placed at risk, I may contact the chair of the Ethics Committee, Psychology, University of Southampton, SO17 1BJ, UK. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

I certify that I have read the information sheet above and I consent to take part in the described research.

Name of participant (print name) ……..

Signature of participant ……..

Date ……..

Please return the completed form to School

UNIVERSITY OF Southampton

Parent/Guardian Information Sheet *(Version 3, 21.03.2015)*

Study Title: An exploration of the interactions between children with learning difficulties and the teachings assistants who support them.

Researcher: Chantelle Nattrass

ERGO Study ID: 11068

Please read this information carefully before deciding whether you wish to take part in this research. If you are happy to take part, please complete the attached consent form.

What is the research about?

Recently there has been an increased amount of research looking at the important role of Teaching Assistants (TAs) in supporting children with Special Educational Needs (SEN). However, there is still very little known about how TAs interact with children who have learning difficulties in order to support their educational and emotional needs. This study aims to explore the interactions between TAs and the children they individually support in order to gain a greater understanding of how pupils with SEN can be taught more effectively. This study also aims to consider whether the TAs or the child's worries or concerns about their ability can impact on these interactions.

Why have I been chosen?
All local primary schools have been contacted to take part in this research. Within those schools that have agreed, all children who receive at least 15 hours of individual support from a TA have been asked to participate.

What will happen if I take part?
This research will require you, your child and the TA they regularly work with to fill out some questionnaires in order for the researcher to gain a better understanding of your child's feelings, how he/she manages in school, and how he/she is supported. You will be required to submit the attached questionnaire about your child's emotional needs along with your signed consent form before this research can begin. Your child will complete two short questionnaires with the support of a researcher whilst at school. Following the completion of these questionnaires, your child and the TA they work with will take part in a joint activity lasting no more than 30 minutes. This activity will be filmed so that the researcher can investigate the interactions between your child and their TA. The videos will only be viewed by the researcher.

Upon completion of the activity, your child will receive a certificate and a small gift to thank them for their participation. The researcher will also spend some time discussing the aims of this research with your child and give them the opportunity to ask any questions they may have.

Are there any benefits to taking part?
With the September 2014 special education needs and disabilities reforms, the whole educational system is changing with regards to how children with SEN are supported. One aspect of this reform will be the way that additional support is allocated to schools, which will certainly impact on the ways that TAs are utilised. The aim of this study is to build a better understanding of how TAs support the learning of children with SEN, in the hope that these findings will provide further insight into how TAs could work more effectively. The good practice that is identified as part of this research could be important for schools as they make changes to the support provided for children with SEN.

Are there any risks involved for my child?
The proposed research is **not** considered to be upsetting for children. Nonetheless, the researcher will conduct a thorough risk assessment to ensure any potential risks are minimised. Furthermore, the proposed study is subject to ethical and research governance approval from the University of Southampton. Participants will be fully debriefed following the activity and will then be directed to speak with staff members and parents/guardians if they have any concerns regarding the study's subject material. A debrief

letter will also be sent home with details of local services that are able to support children. You have been provided with contact details should you have any further questions regarding the research.

Will my child's participation be confidential?
In accordance with the Data Protection Act, all of your child's data will remain confidential. All recordings and questionnaire data will be stored securely and will only be accessed by the named researcher. Your child's name will not be recorded on any questionnaires and will not be used at any point during the written report.

What happens if either I or my child changes our minds?
You may withdraw your consent at any time without consequence. Your child will be asked whether they wish to take part before the questionnaires are filled out and again before the activity begins. If at any point during this research your child decides they do not wish to continue, they will be free to withdraw from the research.

What happens if something goes wrong?
In the unlikely case of concern or complaint, please contact the chair of the ethics committee as detailed below:
Chair of the Ethics Committee,
School of Psychology,
University of Southampton,
Southampton,
Hampshire.
SO17 1BJ
Tel: (023) 8059 5578.

Email: slb1n10@soton.ac.uk

Where can I get more information?
If you would like more information please contact the researcher via email:

Researcher: Chantelle Nattrass

Email Address: cmn1g12@soton.ac.uk

Alternatively, any concerns or issues can be directed to Dr Julie Hadwin (Research supervisor, University of Southampton – J.A.Hadwin@soton.ac.uk).

Thank you for taking the time to read this information sheet.

Chantelle Nattrass

Trainee Educational Psychologist

University of Southampton

UNIVERSITY OF Southampton

CONSENT FORM (Version 3, 21.03.2015)

Study title: An exploration of the interactions between children with learning difficulties and the teachings assistants who support them.

Researcher name: Chantelle Nattrass (cmn1g12@soton.ac.uk)

ERGO Study ID number: 11068

Please initial the boxes if you agree with the statements:

I have read and understood the information sheet (*Version 3, 21.03.2015*) and have had the opportunity to ask questions about the study	☐
I agree to my child taking part in this research project	☐
I agree to my child being recorded using a video recorder	☐
I understand that participation is voluntary and that I may withdraw my child at any time without my legal rights being affected	☐

I have read and understood the information about this study. In consenting, I understand that my legal rights and those of my child are not affected. I also understand that data collected as part of this research will be kept confidential and that published results will maintain that confidentiality. I finally understand that if I have any questions about my child's rights as a participant in this research, or if I feel that my child has been placed at risk, I may contact the chair of the Ethics Committee, Psychology, University of Southampton, SO17 1BJ, UK. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

I certify that I have read the information sheet above and I consent to take part in the described research.

Name of child (print name) ……..

Name of parent/guardian (print name) ……..

Signature of participant ……..

Date ……..

Please return the completed form to School

Appendix E Assent Form

Child information sheet (Version 3, 21.03.2015)

An exploration of the interactions between children with learning difficulties and the teachings assistants who support them.

We are asking if you would like to take part in a research project to understand how children and teaching assistants work together. Before you decide if you want to take part, please read this information with an adult and think about it carefully. You can talk about it with your family and friends if you would like to.

Why are we doing this project?
This project aims to find out how Teaching Assistants and children work together. What we learn from this project might show us how Teaching Assistants can be more helpful. The other aim of this project is to find out whether being worried about work can affect the way Teaching Assistants and children work together.

Why have I been invited to take part?
We are asking all children in your school in Years 3, 4, 5 and 6 who regularly work with a teaching assistant.

Do I have to take part?
No, it is up to you. Before you make this decision, you can ask the researcher to answer any questions that you might have. We have already sent an information sheet to your parent or carer. And they have told us that they are happy for you to take part. But the final decision about taking part is up to you. If you think you might want to take part you can fill out the form at the end of this information sheet. You will be given a copy of this information sheet to keep. If you agree to take part, you can stop at any time, without giving a reason.

What will happen to me if I take part?
If you decide to take part, then we will ask you to fill out some questionnaires about how you think and feel. We have asked the Teaching Assistant you work with to fill out some questionnaires about their thoughts and feelings too. After this you will be asked to take part in an activity with your Teaching Assistant using an etch-a-sketch toy. You will work together with your Teaching Assistant to draw some pictures for about 30 minutes. This activity will be filmed so that we can look at how you work with your Teaching Assistant, but this film will not be shown to anyone else.

What are the benefits of taking part?
We hope this project will help us to understand more about how Teaching Assistants and children work together. We hope this information will help us to train Teaching Assistants in how they can work better with children who need more help in school. You will receive a certificate and a small gift for helping us with our project.

What happens when the project is finished?
When the project finishes we will look at all the information we have found. We will send you and your school information about what we have found and how this might be useful for you. Sometimes once we have finished a project we will publish this information so other researchers can find out about what we found. But we will never include your name or any other information that will let people know who you are.

What if there's a problem or something goes wrong?
There are very few risks in taking part in this project. It is unlikely that there will be a problem. But if you are worried about anything and you decide you want to stop that's OK.

Who is organising and funding the research?
The research is organised and funded through Psychology at the University of Southampton.

Who has agreed to this project being run?
The study has been reviewed by other people who work at the University of Southampton. This means that they think the project is good. It has also been reviewed by the ethics committee at the University of Southampton. They are happy that this research is fair and safe.

What happens if I want to find out more?
You can ask me any questions you have now or by emailing me cmn1g12@soton.ac.uk. You can also contact my supervisor Julie Hadwin at the University of Southampton jah7@soton.ac.uk.

What happens if I find some of the questions you ask upsetting?
If you need any advice or help because of how you feel about the questionnaires or anything else you can talk to lots of different people. This could be someone you know, like your parent or carer. You could also talk to your Teacher, Teaching Assistant, or someone else you trust at school.

You can also get help from outside the school by ringing a helpline, such as Childline. People on Childline will talk to you about any worries you have and they will not tell anyone else about what you say. You can speak to someone on Childline by calling 0800 1111. You can find out more information online at: http://www.childline.org.uk/

Child Assent Form (Version 2, 10.10.2014)

An exploration of the interactions between children with statements and the teachings assistants who support them.

If you are happy to help us with this project, then answer the questions below and sign your name.

- Has somebody else explained this project to you? Yes / No
- Do you understand what this project is about? Yes / No
- Have you asked all the questions you want? Yes / No
- Do you understand it's OK to stop taking part at any time? Yes / No
- Are you happy to take part? Yes / No

If you want to take part, you can write your name here:

Your name _____

The person who explained this project to you needs to sign as well to say that you have understood what was said:

Print Name _____

Sign _____ Date _____

THANK YOU FOR YOUR HELP!

Appendix F Debrief Forms

UNIVERSITY OF Southampton

Parent Debriefing Letter (**Version *3, 21.03.2015***)

An exploration of the interactions between children with learning difficulties and the teachings assistants who support them.

The aim of this research was to explore the interactions between Teaching Assistants and the children they individually support in order to gain a greater understanding of how pupils with SEN can be taught more effectively. Specifically, the researchers wanted to explore over-supporting behaviours within these interactions. The study also aimed to consider whether the TAs or your child's worries or concerns about their ability can impact on any over-supporting interactions. The results of this study will not include your child's name or any other identifying characteristics. Summaries of the research findings will be made available once the project is completed.

If this study has led to some distress for your child, such as recalling unpleasant events or reporting risky behaviours, then there are a range of different organisations you can contact for support. ChildLine (0800 1111) is a free and confidential phone line that children can use if they would like to talk to someone about any problems they might be experiencing. Relate services (**0300 100 1234**) offer both free and affordable counselling to children and young people across the country, and have several sites in East Berkshire. Alternatively your GP can refer you to suitable emotional support services in your area.

If you have any further questions please contact me at *cmn1g12@soton.ac.uk* or alternatively contact my research supervisor Julie Hadwin at J.A.Hadwin@soton.ac.uk.

Please remember that you can withdraw from this research at any time.

Thank you for your consent in this research.

Signature ..... Date .....

Name: Chantelle Nattrass

If you have questions about your child's rights as a participant in this research, or if you feel that they have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

Appendix F

UNIVERSITY OF Southampton

Teaching Assistant Debriefing Letter (**Version *3, 21.03.2015***)

An exploration of the interactions between children with learning difficulties and the teachings assistants who support them.

The aim of this research was to explore the interactions between Teaching Assistants and the children they individually support in order to gain a greater understanding of how pupils with SEN can be taught more effectively. Specifically, the researchers aimed to explore over-supporting behaviours within these interactions. The study also aimed to consider whether the pupil's or your worries or concerns about ability can impact on any over-supporting interactions. The results of this study will not include your name or any other identifying characteristics. Summaries of the research findings will be made available once the project is completed.

If this study has led to you experiencing some distress, such as recalling unpleasant events or engaging in risky behaviours, then there are a range of different organisations you can contact for support. The Samaritans (08457 90 90 90) are a free and confidential phone line that people can use if they would like to talk to someone about any problems they might be experiencing. Relate services (**0300 100 1234**) offer both free and affordable counselling across the country, and have several sites in East Berkshire. Alternatively your GP can refer you to suitable emotional support services in your area.

If you have any further questions please contact me at *cmn1g12@soton.ac.uk* or alternatively contact my research supervisor Julie Hadwin at J.A.Hadwin@soton.ac.uk

Please remember that you can withdraw from this research at any time.

Thank you for taking part in this research.

Signature ..... Date .....

Name: Chantelle Nattrass

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

UNIVERSITY OF Southampton

Child Debriefing Letter (**Version *2, 05.10.2014***)

An exploration of the interactions between children with learning difficulties and the teachings assistants who support them.

Thank you very much for helping me.

The aim of this research was to explore the ways that Teaching Assistants and children work together in order to find out how Teaching Assistants could work with children in better ways. Specifically, the researchers aimed to look at over-supporting behaviours. The study also aimed to consider whether the TAs or your worries or concerns about ability can affect any over-supporting behaviours.

Answers from the questionnaires you were asked to do are not measured as right or wrong. We will not include your name in the study and no-one will look at your answers except the researchers from the University.

If you are worried or concerned about anything we have done you can talk to me or to your teachers and parents. You can also get support from outside the school by ringing a helpline, such as Childline: People on Childline will talk to you about any worries you might have and they will keep every conversation you have with them confidential. You can speak to someone on Childline by calling 0800 1111. There are other ways of contacting childline. You can find out further information online at: http://www.childline.org.uk/.

Do you have any questions?

Signature ..... Date .....

Name: Chantelle Nattrass

THANK YOU FOR HELPING

Appendix G TA Knowledge Questionnaire

How would you rate your instructional knowledge in the following areas compared to that of teachers?

	0 I Do Not Work In This Area	1 Much Less Than Teachers	2 A Bit Less Than Teachers	3 Equivalent to Teachers	4 Greater than Teachers
Literacy	◯	◯	◯	◯	◯
Mathematics	◯	◯	◯	◯	◯
Science	◯	◯	◯	◯	◯
Foreign Languages	◯	◯	◯	◯	◯
History	◯	◯	◯	◯	◯
Geography	◯	◯	◯	◯	◯
ICT	◯	◯	◯	◯	◯
Design & Technology	◯	◯	◯	◯	◯
Art	◯	◯	◯	◯	◯
Dance & Drama	◯	◯	◯	◯	◯
Music	◯	◯	◯	◯	◯
Physical Education	◯	◯	◯	◯	◯
Special Educational Needs	◯	◯	◯	◯	◯

Appendix H TA and Child Coding Forms

Individual Rating Sheet

TA BEHAVIOR RATING FORM

In accordance with the BAT Manual, use the following rating scale to code **TA** behaviours for each individual minute by writing your numerical rating in the appropriate box. After rating each minute, sum the scores in the last column. If total task length is under five minutes, finish code the incomplete minute, and mark all other minutes as "N/A".

0----------1----------2----------3----------4

Never	Very rarely	A little	Some of the time	Most of the time
0%	1-25%	26-50%	51-75%	76-100%

	Rating Minute 1	Rating Minute 2	Rating Minute 3	Rating Minute 4	Rating Minute 5	Total Task Rating
Control Presence of intrusive commands to direct child's behaviour, unsolicited help, over involvement in the task. Remember: giving instructions is not control.						
Warmth TA expresses positive emotions **toward child** including praise, words and gestures of endearment, and affectionate gestures.						
Anxiety TA makes anxious or fearful or perfectionistic statements, expresses self-doubt, seeks reassurance.						
Doubts Concerning Child Competency TA asks about or expresses doubts about the child's competency.						
Autonomy SUpport TA accepts the opinions/problem solving strategies of the child. TA allows the child to make decisions (if uninvolved don't code Granting of Autonomy).						
Problem Solving TA facilitates problem solving strategies and aids the child to approach the task in a positive way (may offer inviting suggestions, ideas, etc.)						
Efficacy TA expresses confidence and/or competence beliefs in self and/or child and communicates that TA and child are in control over outcomes.						

(Adapted from Ginsburg & Grover, 2014)

Appendix H

CHILD BEHAVIOR RATING FORM

In accordance with the BAT Manual, use the following rating scale to code **CHILD** behaviours for each individual minute by writing your numerical rating in the appropriate box. After rating each minute, sum the scores in the last column. If total task length is under five minutes, finish code the incomplete minute, and mark all other minutes as "N/A".

0----------1----------2----------3----------4

Never	Very rarely	A little	Some of the time	Most of the time
0%	1-25%	26-50%	51-75%	76-100%

	Rating Minute 1	Rating Minute 2	Rating Minute 3	Rating Minute 4	Rating Minute 5	Rating Overall Task
Warmth Child expresses positive emotions **toward TA** including praise, words and gestures of endearment, and affectionate gestures.						
Anxiety Child makes anxious or fearful statements, seeks reassurance, acts perfectionistic.						
Off Task Behaviour Child is off task, removed from the task. Child may be turned away and maintain little eye contact.						
Non-compliance Child does not comply with TA commands.						
Self-Criticism Child takes responsibility for any negative events or outcomes (I'm no good, I screwed up again).						
Efficacy Child expresses confidence and/or competence in self and/or TA and communicates that TA and child are in control over outcomes.						
Problem Solving Child suggests or engages in positive behaviours to solve or complete the task at hand.						

(Adapted from Ginsburg & Grover, 2014)

Appendix I **Coded Behaviours**

Coded **TA Behaviours** Rated on a Dimensional Scale (Adapted from Ginsburg & Grover, 2014)

Coded behaviours	Description of behaviour
Control	TA provides intrusive unsolicited help (e.g., touching child's Etch-A-Sketch knob without being asked, completing tasks or part of task without being asked) and is overinvolved in the task (e.g., leaning over task, obstructing the view of the child, completing parts of the task without the child's help, telling the child how to do the task). TA may frequently direct the child's behaviour with commands and say things like, "Let me do that," or, "Turn your knob to the right, now the left, stop." The TA's tone of voice may be harsh or "bossy." **Note:** This category asks you to rate control and does not refer to needed or helpful instructions or redirection when the child is off task.
Warmth	TA expresses positive emotions ***toward the child***, including words and gestures of endearment, compliments, encouragement, and affectionate gestures (e.g., laughter, gentle touches, smiles, high fives, rubbing the child's back). TA seems comfortable with child and enjoys the time spent together. Usually, warmth is expressed nonverbally; however, TA may say things like, "I am having fun playing this game with you," or, "You are doing such a good job." **Note:** Positive emotion expressed towards the *task only* should NOT be coded as warmth/positive affect, some interaction between child and TA needs to take place.
Anxiety	TA appears or makes anxious or fearful statements, cautions in the absence of danger/threat, expresses self-doubts/worries, seeks reassurance, and/or catastrophizes (blows problem out of proportion, asks 'what if' questions). TA may also exhibit perfectionistic behaviours—wanting things to be just right. TA may say things like, "We are never going to get this right," or "Oh no! I think we messed up," "This is tricky!" or "I'm not sure if we are doing this right." TA may also express anxiety in non-verbal actions like rocking in the chair or tapping fingers on the table. They may also ask repeated questions/comments about task performance (e.g., "Is that right? "Is that good?") or perseverate on the time limit (e.g., "How much time do we have left?" "We only have 3 minutes left," "I don't know if we will finish in time"). **Note:** Do not infer anxiety from neutral behaviours (e.g., TA sitting and looking around room).
Doubts concerning the child's competency	TA asks about or expresses doubts or uncertainty about the child's competency (e.g., "Are you sure you can do that?" or "I don't know if you're doing it right").

Appendix I

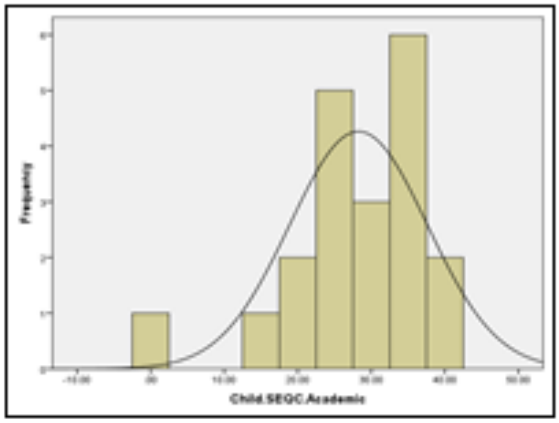
Autonomy Support	TA explicitly supports, encourages, and/or accepts the opinions/problem solving strategies of the child. The TA encourages or allows the child to make decisions. TA may say things like, "How do you think we should do this?" "Yes, go ahead and try that." Or "What do you think we should do?" TA will follow the child's lead (even if the child is off task) and does not attempt to control the situation. If TA says, "should I move the knob to the right?" and the child says "no," the TA says "ok" and complies. If the TA is uninvolved in the task (e.g., looking around room) but allowing child to do whatever they want, do not code as granting of autonomy; granting of autonomy requires some explicit TA acknowledgement of the child's choices/ideas. This acknowledgement could be verbal (even a minimal "ok") or nonverbal (e.g., shaking their head in agreement, intently listening to the child's ideas or speech practice). **Note:** Turn taking to complete the task <u>is not</u> granting of autonomy.
Problem Solving	TA facilitates problem solving strategies for the task. The TA <u>helps</u> the child (rather than fixing problem for them) approach the task in a positive way to figure out how to accomplish the task (e.g., brainstorming solutions with child but not for the child, collaboratively developing a plan for the task.). If TA offers a suggestion to solve problem (e.g., gives an idea for how to start the drawing), they must wait for child's feedback/response for this behaviour to be coded as problem solving. TA may say things like, "What do you think we should do?" "Where should we start?" or "Which way should I move this knob?" but must wait for the child to respond before acting on the solution. Problem solving can also be nonverbal. This category also includes mild redirection to keep the child focused on the task. Basic instructions are not coded as problem solving.
Efficacy	TA expresses confidence and/or competence beliefs in self, child, and/or their ability to work together to complete the task. TA communicates that TA and child are in control over outcomes ("We can do this if we try" and "We did it!" "We can do it").

Coded **Child Behaviours** Rated on a Dimensional Scale (Adapted from Ginsburg & Grover, 2014)

Coded behaviours	Description of behaviour
Warmth	Child expresses positive emotions ***toward the TA*** including words and gestures of endearment, encouragement and affectionate gestures (e.g., laughter, gentle touches, smiles, high fives). If child laughs at their own joke, do not code as positive affect. Child shows that he/she is comfortable with TA and enjoys the time spent together. Usually, warmth is expressed nonverbally; however, child may say things like, "You are fun, Mom" or sing affectionate songs. Positive emotion expressed toward the *task only* should NOT be coded as Warmth/Positive Affect.
Anxiety	Child appears or makes anxious or fearful statements, cautions in the absence of danger/threat, expresses self-doubt, seeks reassurance, and catastrophizes. Child may also express perfectionistic behaviours. Child may say things like, "We are never going to get this right," "This is tricky!" "Uh oh," or "Oh no!" "What if that woman (the research assistant) is mad at me?" or "Are you sure this looks okay?" "Is she watching us?" or "how much time is left to complete the task?" Child may express anxiety non-verbally by rocking in the chair, being startled by loud noises, etc.
Off Task Behaviour	Child appears removed from the task. Child may be physically oriented away from the task (e.g., turned away, closed eyes, little eye contact). Child may say things like, "How long do we have to do this," "Are we done yet?" or "I want to go home." Child may act silly to avoid doing task of preparing the speech or may give TA nonsense suggestions for topics to talk about) or talk about unrelated topics.
Non-compliance	Child does not comply with the TA commands (TA commands must be reasonable). Child may ignore TA requests, not respond to a question, or reply, "No." The child may argue with the TA or purposefully try to annoy the TA.
Self-Criticism	Child takes responsibility for any negative events or outcomes (e.g., "It's my fault," "I messed up," "I can't do this.").
Problem solving	Child suggests or engages in positive actions to figure out a solution to the task (e.g., brainstorms solutions, evaluating positives and negatives of each solution, develop a plan for the task). Child may say things like, "Let's first turn the right knob" or "Why don't we take turns?" Problem solving can also be nonverbal.
Efficacy	Child expresses confidence and/or competence beliefs in self, TA, and/or their ability to work together to complete the task. Child communicates that TA and child are in control over outcomes (e.g., "We can do this if we try," "We did it!").

Appendix J Distribution of Data

Histograms for each of the scales used



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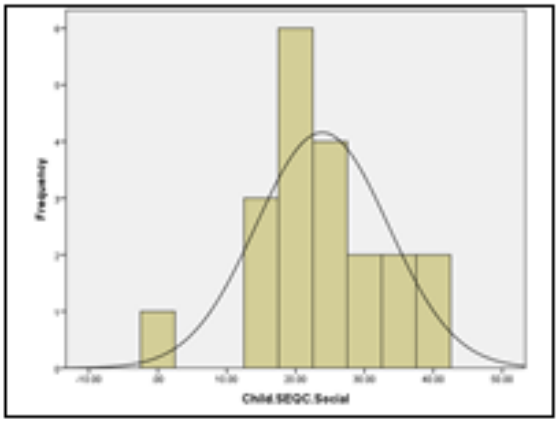

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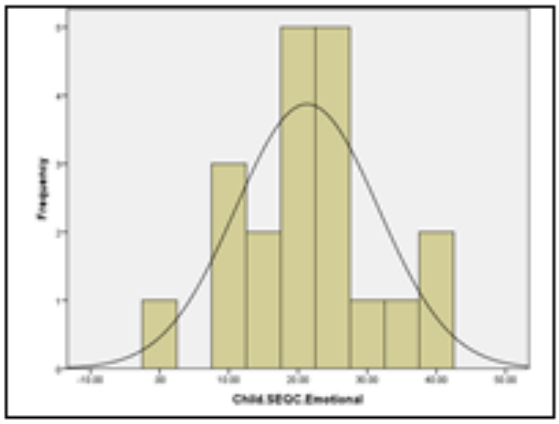

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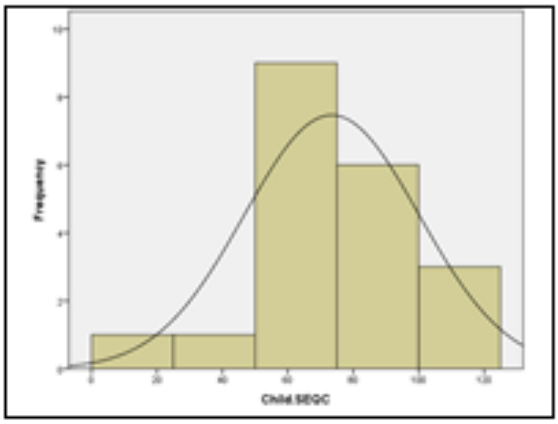
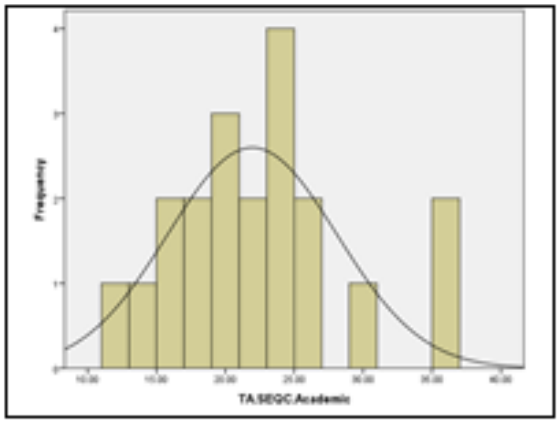
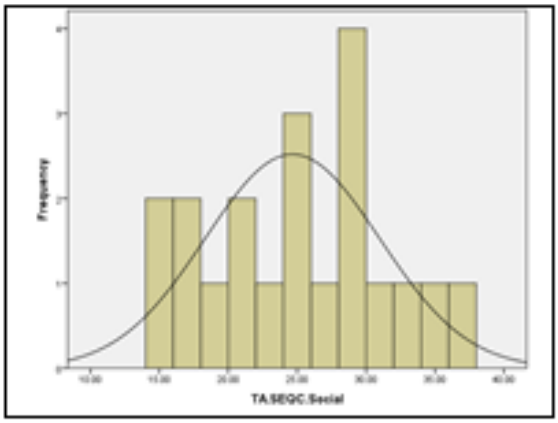


Child SEQ-C Total

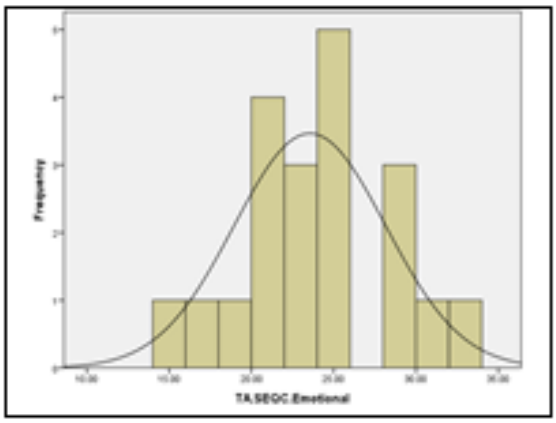


TA SEQ-C Academic

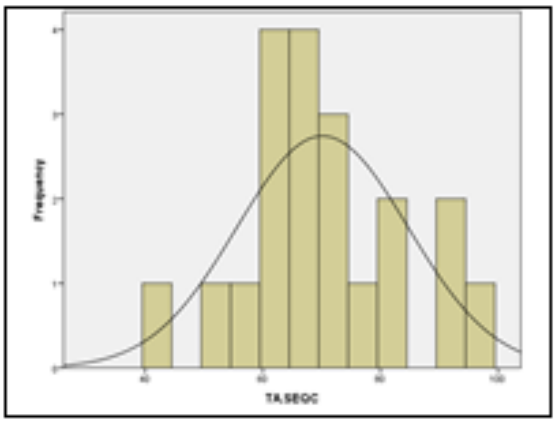


TA SEQ-C Social

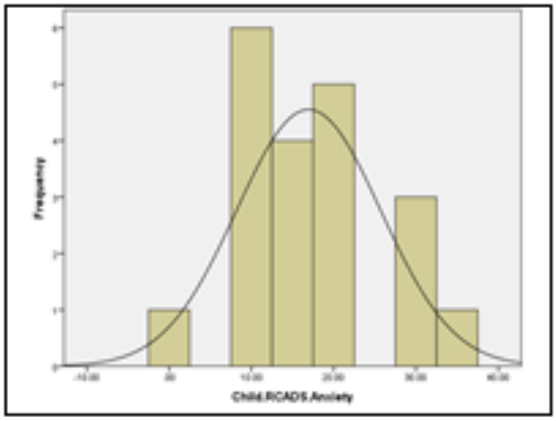
Appendix J



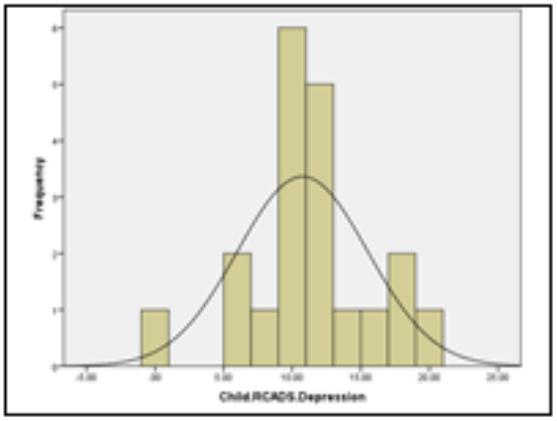
TA SEQ-C Emotional



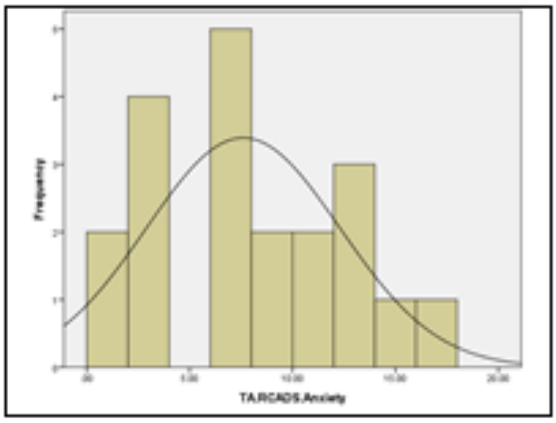
TA SEQ-C Total



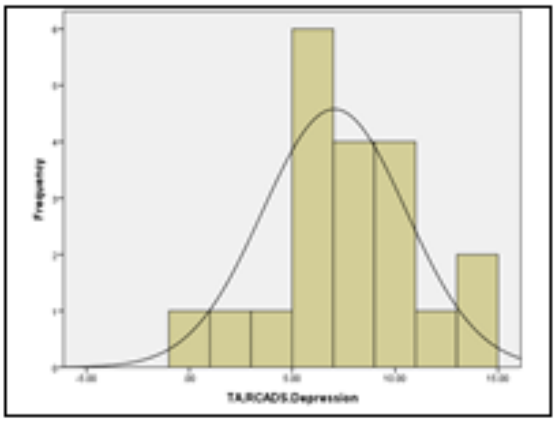
Child RCADS Anxiety



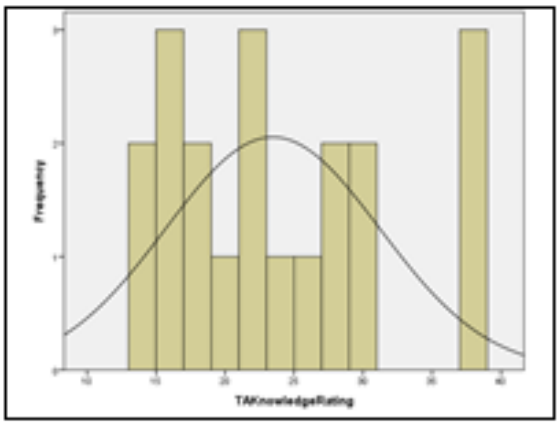
Child RCADS Depression



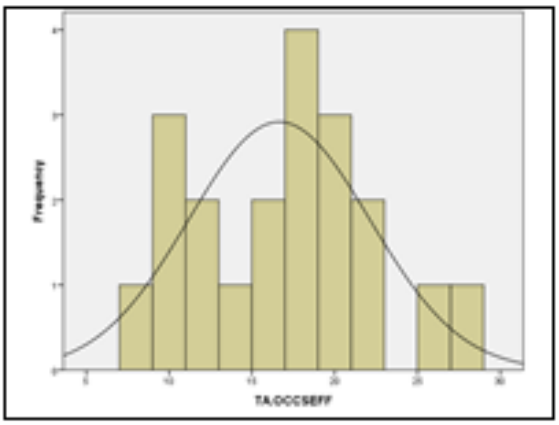
TA RCADS Anxiety



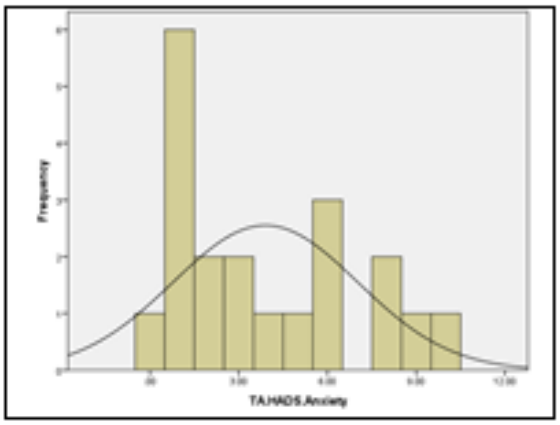
TA RACDS Depression



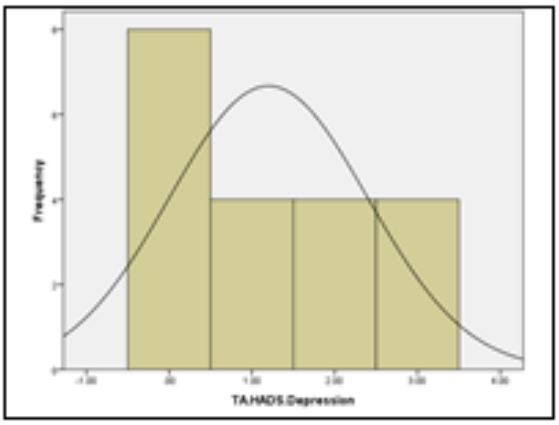
TA Knowledge Rating



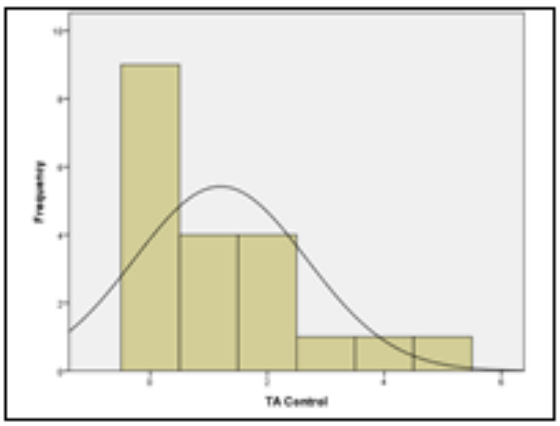
TA Occupational Self-Efficacy



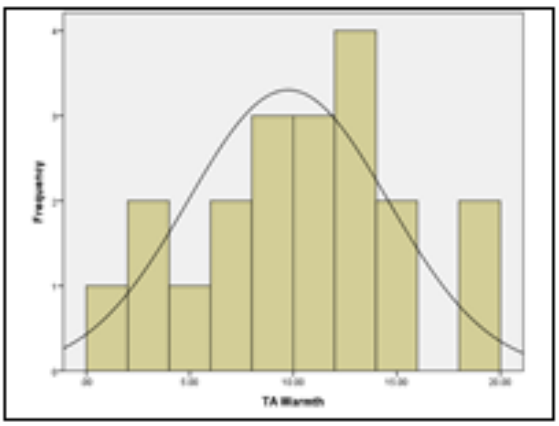
TA HADS Anxiety



TA HADS Depression

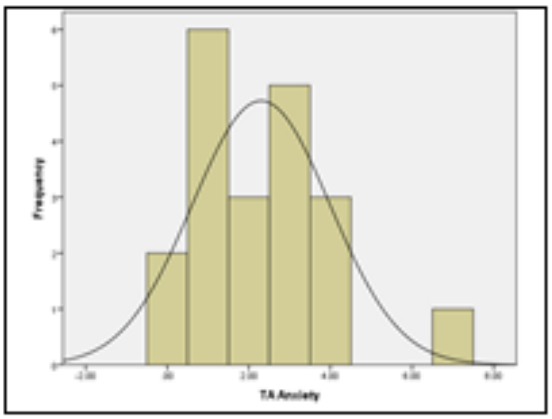


TA Control (Observed)

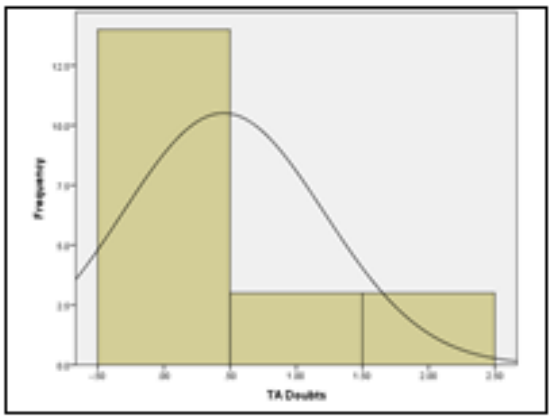


TA Warmth (Observed)

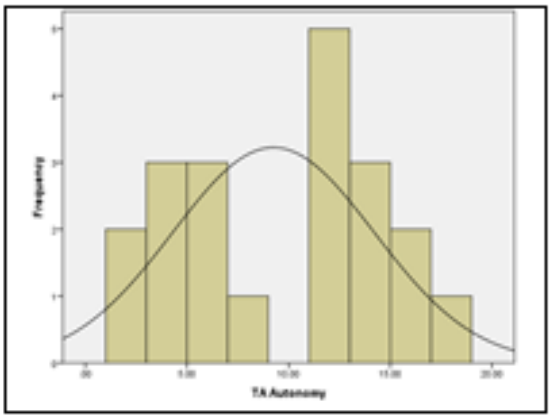
Appendix J



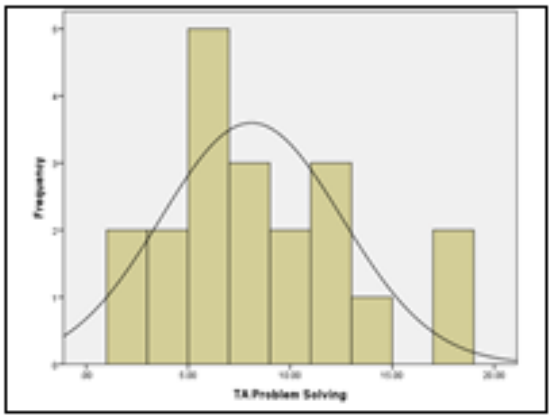
TA Anxiety (Observed)



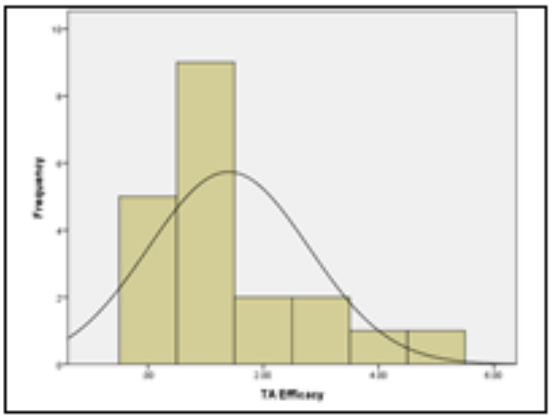
TA Doubts (Observed)



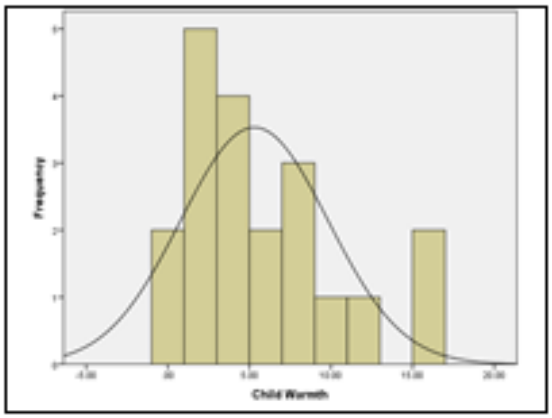
TA Autonomy (Observed)



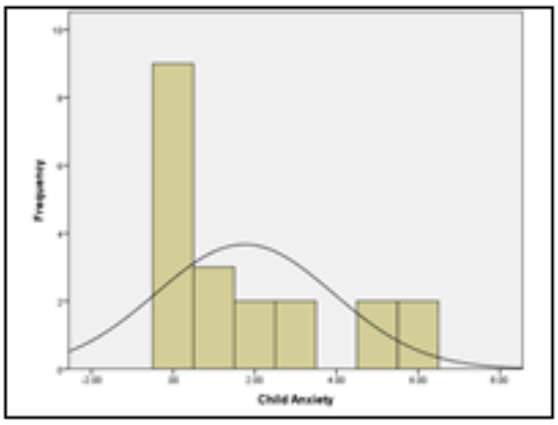
TA Problem Solving (Observed)



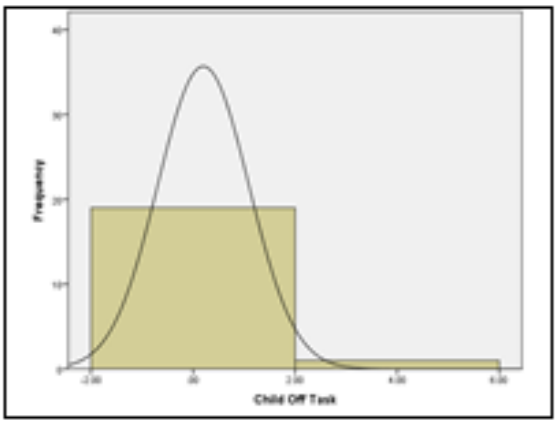
TA Efficacy (Observed)



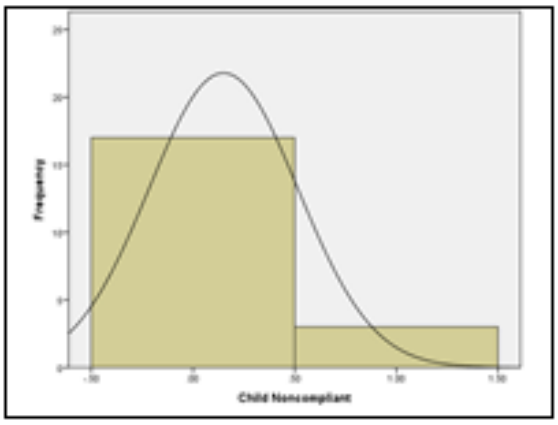
Child Warmth (Observed)



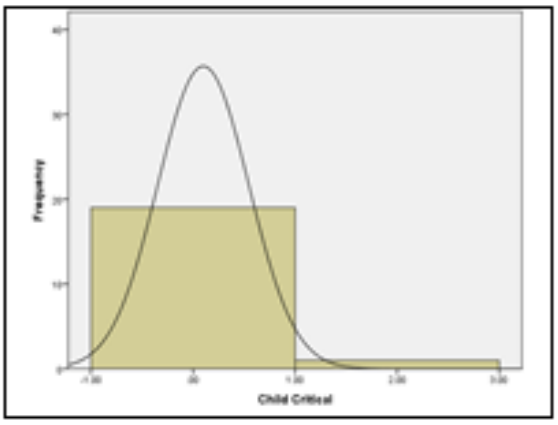
Child Anxiety (Observed)



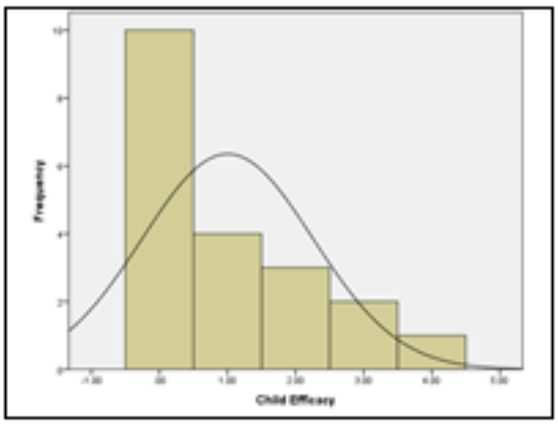
Child Off-Task (Observed)



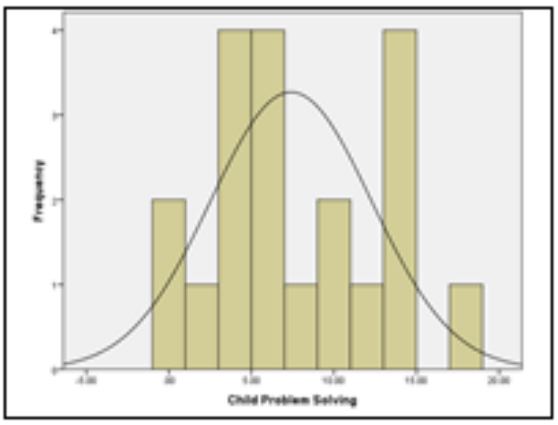
Child Noncompliant (Observed)



Child Critical (Observed)



Child Efficacy (Observed)



Child Problem Solving (Observed)

Appendix J

Frequency Counts for Observations

TA Control

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	9	26.5	45.0	45.0
	1	4	11.8	20.0	65.0
	2	4	11.8	20.0	85.0
	3	1	2.9	5.0	90.0
	4	1	2.9	5.0	95.0
	5	1	2.9	5.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

TA Warmth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	2.9	5.0	5.0
	2.00	1	2.9	5.0	10.0
	3.00	1	2.9	5.0	15.0
	5.00	1	2.9	5.0	20.0
	6.00	2	5.9	10.0	30.0
	9.00	3	8.8	15.0	45.0
	10.00	2	5.9	10.0	55.0
	11.00	1	2.9	5.0	60.0
	12.00	3	8.8	15.0	75.0
	13.00	1	2.9	5.0	80.0
	14.00	1	2.9	5.0	85.0
	15.00	1	2.9	5.0	90.0
	18.00	2	5.9	10.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

TA Anxiety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	2	5.9	10.0	10.0
	1.00	6	17.6	30.0	40.0
	2.00	3	8.8	15.0	55.0

	3.00	5	14.7	25.0	80.0
	4.00	3	8.8	15.0	95.0
	7.00	1	2.9	5.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

TA Doubts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	14	41.2	70.0	70.0
	1.00	3	8.8	15.0	85.0
	2.00	3	8.8	15.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

TA Autonomy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	2	5.9	10.0	10.0
	3.00	1	2.9	5.0	15.0
	4.00	2	5.9	10.0	25.0
	5.00	2	5.9	10.0	35.0
	6.00	1	2.9	5.0	40.0
	8.00	1	2.9	5.0	45.0
	11.00	2	5.9	10.0	55.0
	12.00	3	8.8	15.0	70.0
	13.00	2	5.9	10.0	80.0
	14.00	1	2.9	5.0	85.0
	15.00	1	2.9	5.0	90.0
	16.00	1	2.9	5.0	95.0
	17.00	1	2.9	5.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

TA Problem Solving

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	2	5.9	10.0	10.0

	3.00	1	2.9	5.0	15.0
	4.00	1	2.9	5.0	20.0
	5.00	2	5.9	10.0	30.0
	6.00	3	8.8	15.0	45.0
	7.00	1	2.9	5.0	50.0
	8.00	2	5.9	10.0	60.0
	9.00	2	5.9	10.0	70.0
	11.00	1	2.9	5.0	75.0
	12.00	2	5.9	10.0	85.0
	13.00	1	2.9	5.0	90.0
	17.00	2	5.9	10.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

TA Efficacy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	5	14.7	25.0	25.0
	1.00	9	26.5	45.0	70.0
	2.00	2	5.9	10.0	80.0
	3.00	2	5.9	10.0	90.0
	4.00	1	2.9	5.0	95.0
	5.00	1	2.9	5.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Child Warmth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	2	5.9	10.0	10.0
	1.00	1	2.9	5.0	15.0
	2.00	4	11.8	20.0	35.0
	3.00	2	5.9	10.0	45.0
	4.00	2	5.9	10.0	55.0
	5.00	2	5.9	10.0	65.0
	7.00	2	5.9	10.0	75.0
	8.00	1	2.9	5.0	80.0
	10.00	1	2.9	5.0	85.0
	11.00	1	2.9	5.0	90.0

	15.00	2	5.9	10.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Child Anxiety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	9	26.5	45.0	45.0
	1.00	3	8.8	15.0	60.0
	2.00	2	5.9	10.0	70.0
	3.00	2	5.9	10.0	80.0
	5.00	2	5.9	10.0	90.0
	6.00	2	5.9	10.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Child Off-Task

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	19	55.9	95.0	95.0
	4.00	1	2.9	5.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Child Noncompliant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	17	50.0	85.0	85.0
	1.00	3	8.8	15.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Child Critical

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	19	55.9	95.0	95.0
	2.00	1	2.9	5.0	100.0

	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Child Efficacy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	10	29.4	50.0	50.0
	1.00	4	11.8	20.0	70.0
	2.00	3	8.8	15.0	85.0
	3.00	2	5.9	10.0	95.0
	4.00	1	2.9	5.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Child Problem Solving

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	2	5.9	10.0	10.0
	2.00	1	2.9	5.0	15.0
	3.00	1	2.9	5.0	20.0
	4.00	3	8.8	15.0	35.0
	5.00	1	2.9	5.0	40.0
	6.00	3	8.8	15.0	55.0
	8.00	1	2.9	5.0	60.0
	9.00	1	2.9	5.0	65.0
	10.00	1	2.9	5.0	70.0
	12.00	1	2.9	5.0	75.0
	13.00	4	11.8	20.0	95.0
	17.00	1	2.9	5.0	100.0
	Total	20	58.8	100.0	
Missing	System	14	41.2		
Total		34	100.0		

Appendix K Correlation Matrices

Table of Pearson Correlations for all measures that were normally distributed.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Child SEQ-C Academic	1																		
2. Child SEQ-C Social	.693** .001	1																	
3. Child SEQ-C Emotional	.737** .000	.818** .000	1																
4. Child SEQ-C Total	.883** .000	.917** .000	.937** .000	1															
5. TA SEQ-C Academic	.144 .545	.010 .968	-.026 .915	.044 .854	1														
6. TA SEQ-C Social	-.065 .785	.064 .789	.029 .903	.011 .962	.559** .010	1													
7. TA SEQ-C Emotional	.180 .448	.358 .121	.209 .376	.272 .246	.479** .033	.720** .000	1												
8. TA SEQ-C Total	.089 .708	.145 .541	.068 .775	.110 .645	.817** .000	.889** .000	.832** .000	1											
9. Child RCADS Anxiety	.179 .451	-.014 .954	-.072 .764	.030 .900	.027 .909	-.053 .823	-.212 .370	.079 .741	1										
10. Child RCADS Depression	.163 .493	-.088 .713	-.145 .542	-.030 .899	.175 .461	-.028 .908	-.150 .528	.014 .952	.669** .001	1									

Appendix K

11. TA RCADS Anxiety	.256 .276	.143 .547	.329 .156	.268 .253	-.094 .695	-.070 .768	-.322 .166	-.172 .468	.045 .849	.000 1.00	1							
12. TA RCADS Depression	-.049 .838	.066 .781	.148 .535	.064 .790	-.113 .635	.084 .724	-.218 .355	-.080 .737	-.031 .897	.084 .726	.620** .004	1						
13. TA OCCSEFF	-.034 .886	-.008 .973	-.271 .248	-.119 .617	-.373 .105	-.074 .758	.008 .973	-.187 .430	-.179 .449	-.204 .388	.015 .951	.045 .850	1					
14. TA Warmth	-.336 .147	-.251 .287	-.272 .246	-.313 .180	-.089 .709	.202 .394	-.105 .661	.017 .943	-.098 .680	-.320 .170	.294 .208	-.034 .888	.233 .322	1				
15. TA Anxiety	.082 .732	-.101 .672	.052 .828	.012 .959	.164 .490	.301 .198	.323 .165	.302 .195	.072 .762	.102 .669	-.057 .812	-.047 .843	.183 .440	-.055 .818	1			
16. TA Autonomy	.197 .404	.045 .850	.060 .800	.109 .649	.042 .861	-.190 .422	-.288 .218	-.156 .511	.162 .496	.296 .205	.395* .085	.027 .911	-.014 .953	.115 .629	.047 .843	1		
17. TA Problem Solving	-.134 .574	-.104 .664	-.206 .384	-.163 .491	-.241 .305	-.222 .348	-.134 .573	-.241 .306	.014 .954	.126 .596	-.280 .231	-.382 .097	.320 .168	.168 .478	.200 .399	.047 .845	1	
18. Child Warmth	-.181 .445	-.080 .737	-.081 .734	-.123 .604	-.009 .970	-.051 .830	-.117 .623	-.063 .791	-.033 .891	.070 .770	.441 .051	.370 .109	.021 .928	.425* .062	.036 .881	.326 .161	.072 .763	1
19. Child Problem Solving	.378* .100	.067 .780	.163 .493	.219 .354	.192 .417	-.077 .747	.008 .972	.050 .833	.334 .150	.225 .340	.285 .224	-.137 .564	.151 .524	.016 .948	.502** .024	.623** .003	.015 .950	.197 .405

Note: N = 20, ** = significant at p≤.05, * = p≤.10 (in order to look for non-significant trends in the data)

Table of Spearman Correlations for all measures that were not normally distributed.

	TA Knowledge Rating	TA HADS Anxiety	TA HADS Depression	TA Control	TA Efficacy	Child Anxiety	Child Efficacy
Child SEQ-C Academic	.150 .527	-.056 .815	-.008 .974	-.458** .025	-.174 .462	-.320 .169	-.009 .969
Child SEQ-C Social	.197 .406	.089 .708	.276 .239	-.123 .606	-.187 .431	.075 .754	.130 .585
Child SEQ-C Emotional	.304 .192	.048 .841	.068 .777	-.166 .626	-.123 .606	-.221 .350	.234 .320
Child SEQ-C Total	.297 .203	.058 .808	.145 .543	-.142 .549	-.215 .362	-.174 .464	.154 .518
TA SEQ-C Academic	.136 .567	-.473** .035	-.297 .204	-.219 .354	-.364 .114	.158 .507	.135 .570
TA SEQ-C Social	.302 .196	-.069 .773	-.038 .874	.218 .356	-.254 .280	-.018 .941	.250 .289
TA SEQ-C Emotional	.406* .076	-.012 .959	-.021 .932	.192 .418	-.390* .090	.224 .342	.150 .527
TA SEQ-C Total	.328 .157	-.182 .442	-.150 .529	.148 .535	-.374 .104	.095 .690	.281 .230
Child RCADS Anxiety	-.284 .225	-.064 .789	-.266 .256	-.047 .843	.333 .152	.047 .845	.146 .538
Child RCADS Depression	-.507** .022	-.383* .095	-.684** .001	-.141 .554	.357 .122	.185 .434	-.022 .926
TA RCADS Anxiety	-.092 .699	.253 .283	-.038 .873	-.318 .171	.401* .079	-.012 .959	.444** .050
TA RCADS Depression	-.274 .243	.111 .641	-.202 .392	-.247 .294	.490** .028	.036 .880	.137 .563
TA Knowledge Rating	1 -	.264 .260	.311 .182	.368 .111	-.171 .471	.062 .794	.139 .560
TA OCCSEFF	-.174 .462	.539** .014	.444** .050	.155 .515	.122 .610	.296 .205	-.098 .681
TA HADS Anxiety	.264 .260	1 -	.697** .001	.131 .581	.303 .194	.148 .533	.270 .249
TA HADS Depression	.311 .182	.697** .001	1 -	.156 .511	-.185 .436	.045 .852	.112 .639
TA Control	.368 .111	.131 .581	.156 .511	1 -	-.397* .083	.148 .533	-.306 .190
TA Warmth	-.011 .963	.230 .330	.411* .072	.338 .144	-.179 .449	.004 .988	.143 .547
TA Anxiety	.288 .218	.294 .209	.229 .332	.342 .140	-.128 .589	.370 .108	.294 .209

Appendix K

TA Autonomy	-.194 .412	.309 .185	.197 .405	-.337 .146	.291 .214	.179 .450	.167 .482
TA Problem Solving	-.092 .700	-.060 .802	.175 .460	.586** .007	-.320 .169	.388* .091	-.536** .015
TA Efficacy	-.171 .471	.303 .194	-.185 .436	-.397* .083	1 -	.102 .670	.068 .776
Child Warmth	-.088 .713	.314 .178	.006 .979	.090 .707	.212 .370	.506** .023	.166 .484
Child Anxiety	.062 .794	.148 .533	.045 .852	.148 .533	.102 .670	1 -	.004 .987
Child Efficacy	.139 .560	.270 .249	.112 .639	-.306 .190	.068 .776	.004 .987	1 -
Child Problem Solving	.073 .761	.192 .418	.036 .879	-.141 .553	.054 .820	.320 .169	.312 .180

Note: N = 20, ** = significant at p≤.05, * = p≤.10 (in order to look for non-significant trends in the data)

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