

# An Exploration of the Application of a Theory of Basic Psychological Needs in Developing Practice in a Secondary School.

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I hereby confirm that this is my own work and has not been submitted previously for assessment .

## Overarching Abstract

The fulfilment of Basic Psychological Needs, from a Self Determination Theory perspective, is a growing area of research within psychology. This theory's emphasis on the environmental conditions which support positive human functioning has led to an ongoing interest in what this might mean for children and young people in our schools.

The first chapter of this thesis critically reviews existing research, considering the relationship between the fulfilment of Basic Psychological Needs and school engagement from a Self Determination Theory perspective. The conclusions of my systemic review suggested that there are inconsistencies in the relationships found within the literature, however all studies suggested a relationship between the fulfilment of at least one need and one element of school engagement. This led to the tentative suggestion that this may be helpful framework for guiding practice.

Following on from this, in chapter 3 an empirical paper explores the factors that influence teachers' application of a theory of Basic Psychological Needs in their practice. Using a collaborative action research approach, teachers were supported to apply a theory of Basic Psychological needs in their practice to make changes to promote positive outcomes for pupils. Within my analysis, several themes were constructed from the data which identified possible factors that may have impacted upon teachers in the changes that they made within this context. This led to a discussion of the possible influence of challenge, dialogue, ecological factors and Basic Psychological Need fulfilment on the changes that were made. Implications for Educational Psychologists and wider systems are identified.



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# **Chapter 1. Exploring the Relationship Between Basic Psychological Needs and School Engagement**

## **1.1 Abstract**

The influence of the fulfilment of Basic Psychological Needs on positive outcomes for children and young people has been widely researched in recent years. This systematic literature review therefore seeks to synthesise some of the literature in this area, with a particular focus on the relationship between Basic Psychological Need fulfilment and school engagement.

This review seeks to answer the question “What is the relationship between the fulfilment of Basic Psychological Need’s and school engagement in pupils aged 11-18 years?” through a structured process of identification, appraisal and synthesis. Systematic searches of relevant journals identified nine studies across seven quantitative articles relevant to the review question. Of these nine studies, seven were judged as medium to high in relation to their quality and relevance to the review question.

Across these studies there were a number of inconsistencies in the reported effect sizes with the relationships between variables differing across studies. Within the literature there was little explanation for this variation in results, highlighting the need for further research in this area. Despite this variation, all of the studies within this review reported at least one significant relationship between the fulfilment of at least one Basic Psychological Need and one element of school engagement. This led to the conclusion that the theory of Basic Psychological Needs may be tentatively used as a framework to promote pupil engagement in school.

## **1.2 Introduction**

### **1.2.1 Context**

Over the last 30 years, school engagement has been a growing area of research with researchers seeking to understand how engagement may promote positive outcomes for children and young people (CYP) (Christenson, Reschly, & Wylie, 2012). Within the most recent government statistics published in the UK, the most frequently reported reason for school exclusion is persistent disruptive behaviour (Department

for Education, 2016a). Considering the reported links between disengagement and disruptive behaviour (Wang & Fredricks, 2014), alongside the range of negative outcomes associated with school exclusion including lost educational opportunities, stigmatisation and being cut off from peer support (Daniels & Cole, 2010), it is important that an understanding of school engagement continues to be developed. This is of particular importance for Educational Psychologists due to their role in promoting the inclusion of all pupils (Wilding, 2015).

A possible theory which might help us to understand the conditions that may promote increased school engagement is Self Determination Theory (SDT) (Wilding, 2015). This theory posits that the fulfilment of three Basic Psychological Needs (BPNs) leads to optimal human functioning (Deci & Ryan, 1985, 2000, 2002; Ryan & Deci, 2017). The fulfilment of BPNs has been linked to a range of positive school related outcomes including general and school related subjective wellbeing (Tian, Chen, & Huebner, 2014; Véronneau, Koestner, & Abela, 2005), academic outcomes (Ratelle, Guay, Vallerand, Larose, & Senécal, 2007), persistence in school (Ratelle et al., 2007; Ratelle, Larose, Guay, & Senécal, 2005), self-efficacy (Diseth, Danielsen, & Samdal, 2012) and achievement goals (ibid). This theory therefore shows promise as a way of helping us understand the factors that promote positive engagement.

This systematic literature review will therefore focus on exploring the possible relationship between school engagement and BPNs. I will first explore definitions of school engagement before giving a more detailed introduction to SDT and BPNs.

### ***1.2.2 Defining school engagement***

It has been argued that there has been a lack of definitional clarity around the concept of school engagement (Christenson et al., 2012) with a number of terms used to describe overlapping concepts including engagement, engagement in schoolwork, academic engagement and student engagement (Appleton, Christenson, & Furlong, 2008). It is suggested that there is also ambiguity in the conceptualisation of a lack of engagement with some researchers arguing that this is “disaffection” whilst others understand it as “an absence of engagement itself” (ibid p370). Despite this disparity there appears to be a recent emergence of a more consistent conceptualisation of school engagement (ibid).

School engagement has been described as a “meta construct” which encompasses a multi-dimensional understanding of engagement (Fredricks, Blumenfeld, & Paris,

2004; Lawson & Masyn, 2015). This meta construct is generally agreed to consist of three components: cognitive, behavioural and emotional engagement (Christenson et al., 2012; Fredricks et al., 2004; Lawson & Masyn, 2015). Cognitive engagement refers to psychological investment including cognitive effort and persistence at tasks perceived as difficult (ibid). Behavioural engagement is understood as positive involvement and participation in academic and extracurricular activities (ibid). Emotional engagement refers to positive and negative affect associated with certain activities which influences the willingness to engage (ibid).

More recently a fourth construct of agentic engagement has been suggested by Reeve (2013). Agentic engagement is conceptualised as the way in which a student contributes to the flow of the instruction they receive including asking questions and letting the teacher know what they need (Reeve & Lee, 2014). This concept is relatively new and as such is not a widely used or embedded aspect of school engagement within the research literature.

Despite this apparent emerging consistency in definition, it is argued that there continue to be differences in the way that these constructs are applied in research. Christenson et al. (2012) contend that there is still a dispute as to whether engagement should be understood as a process (Appleton et al., 2008) or an outcome (Skinner, Furrer, Marchand, & Kindermann, 2008). This discrepancy is apparent within the articles included in this review with some researchers considering engagement as an outcome of BPN satisfaction and other longitudinal studies suggesting needs are satisfied through a process of engagement. Further research is needed in order to develop a better understanding of how engagement should be conceptualised.

Within this review, the majority of articles refer to engagement in relation to the multi-dimensional meta construct identified earlier. As such, any references to engagement should be understood in this way unless stated otherwise. I will now go on to explore SDT and BPN and how this may help us to identify the conditions which promote positive engagement.

### **1.2.3 School Engagement and BPNs**

It has been argued that some explanations of a lack of engagement in school emphasise within-child characteristics of negative attitudes, beliefs and behaviours which do not acknowledge the complexity of the construct (Wilding, 2015). Wilding argues that the application of a theory of BPN's as outlined by SDT offers an alternative to this as a theoretical stance that emphasises the importance of the social context. She suggests that this can be used by Educational Psychologists to work collaboratively with other professionals, pupils and parents, providing a potentially empowering stance for those working with CYP through recognising the environmental factors which can be adapted to promote positive outcomes (Guay, Ratelle, Roy, & Litalien, 2010).

The theory of BPNs is one of six mini-theories outlined in SDT (Ryan & Deci, 2017) which suggests that there are three BPNs; autonomy, competence and relatedness (Deci & Ryan, 1985, 2000, 2002; Ryan & Deci, 2009, 2017). The theory contends that human growth and functioning requires the fulfilment of these needs through our interactions with our environment. Autonomy is understood as the need to feel that you are the origin of your own behaviour (ibid). Competence is understood as the need to feel effective in your interactions with the environment. It is important to note that competence is not a state or capacity, but a felt sense of confidence in one's own abilities (ibid). Relatedness describes the need to feel connected to others, including caring for and feeling cared for by others (ibid).

It is argued that BPN theory is universal in that it is cross developmental and cross cultural (Ryan & Deci, 2017). However, Chirkov, Ryan, Kim, and Kaplan (2003) suggest that although relatedness and competence are generally accepted as cross cultural, the need for autonomy has been challenged. It is argued that autonomy is a westernised ideal and that does not translate to collectivist cultures which promote a more interdependent model of the self (Iyengar & Lepper, 1999; Oishi, 2000). However, it has been suggested that these claims are based on an understanding of autonomy which is equated with independence (Chirkov et al., 2003). Ryan and Deci (2017) outline that autonomy should not be confused with independence, suggesting that an individual can be simultaneously autonomous and dependent. Autonomy is supported when an individual feels that the actions that they engage in are in line with their personal values and interests and thwarted when they feel their actions are

controlled by external forces and are incongruent with their beliefs and values (Chirkov et al., 2003; Ryan & Deci, 2017). Therefore, an individual can carry out actions requested by or promoted by others (within a collectivist culture) and still remain autonomous as long as those actions are congruent with their beliefs and values.

Considering the call for evidence based practice in educational psychology (British Psychological Society, 2006; Lane & Corrie, 2007), alongside Wilding's (2015) suggestion that SDT offers a promising perspective for working with schools to develop pupil engagement, there is a need for a review of the empirical literature in this area. I have therefore carried out a systematic review guided by the question "What is the relationship between the fulfilment of BPN's and school engagement in pupils aged 11-18 years?". I have chosen to focus on this age group due to the suggestion that there is a decrease in school engagement over this time (Marks, 2000; Wang & Eccles, 2012) alongside the previous government's extension of the school participation age from 16 to 18 years of age ("Education and Skills Act," 2008; Spielhofer, Walker, Gagg, Schagen, & O'Donnell, 2007).

### 1.3 Method

This systematic review was carried out using the method suggested by Petticrew and Roberts (2006) (table 1).

*Table 1 - The systematic review stages (Petticrew and Roberts, 2006)*

<b>Stage</b>	<b>Description</b>
1	Clearly define the review question in consultation with anticipated users
2	Determine the types of studies needed to answer the review question
3	Carry out a comprehensive literature search to locate relevant studies
4	Use inclusion and exclusion criteria to screen the studies to identify those which warrant further in depth review
5	Describe the included studies to 'map' the field, and critically appraise them for quality and relevance
6	Synthesise studies' findings
7	Communicate the outcomes of the review

The following sections will go through each in more detail.

### **1.3.1 Stage 1 and 2 – Defining review question and determining studies.**

The review question outlined within the introduction to this review was developed through an iterative process of considering areas of interest for the researcher alongside carrying out some initial searches of the available literature. The review question emerged as a result of an apparent gap within the literature for a systematic review answering this specific question together with a number of studies being available to contribute towards answering this.

### **1.3.2 Stage 3 – Literature search**

Formal literature searches were carried out between 11<sup>th</sup> February 2016 and 30<sup>th</sup> March 2016. Electronic searches were carried out using the following databases; Web of Science, OVID (Psychinfo, PSYCHArticles, Embase, Medline), Scopus, EBSCO (British Education Index, ERIC, Child and Adolescent studies, Psychology and Behavioural Sciences) and ProQuest using the search criteria outlined in table 2. In order to develop my search criteria, I carried out a number of broad searches of “Basic Psychological Needs” “Self Determination Theory” and “School Engagement” to identify relevant key terms. ProQuest database thesaurus was also used to explore synonyms.

*Table 2 - Search criteria used during systematic searching of electronic databases*

<b>Variable 1</b>		<b>Variable 2</b>
“school connectedness” OR “student* engagement” OR “pupil* engagement” OR “school engagement” OR “academic engagement” OR “student* disengagement” OR “pupil* disengagement” OR “school disengagement” OR “academic disengagement”	<b>AND</b>	“self determin*”



This search identified 470 relevant articles. Once duplicates and non-peer reviewed journal articles were excluded, initial searches of titles and abstracts led to the identification of 17 relevant articles. Hand searches were carried out for journals with relevance to the field of educational psychology and journals which had a high proportion of relevant articles from my initial searches. This included the Journal of Youth and Adolescence, School Psychology International, Journal of Educational Psychology, Educational Psychology in Practice, Educational and Child Psychology and EThOS. These searches identified no further relevant articles or theses.

### 1.3.3 Stage 4 – Screening the studies

Inclusion and exclusion criteria (table 3) were then more stringently applied during an in-depth review of these articles. The application of these inclusion and exclusion criteria led to the identification of seven quantitative papers to be included in my systematic review. The bias towards quantitative studies in this area is in line with the promotion of the development of a body of empirical evidence in relation to SDT (Deci & Ryan, 1985, 2000; Ryan & Deci, 2017).

Table 3 - Inclusion and exclusion criteria applied during an in-depth review of my articles.

	<b>Criteria</b>	<b>Rationale</b>
<b>Inclusion Criteria</b>	Participants Male and female, aged 11-18 years	In line with current UK school systems.
	Setting An educational setting, all countries considered.	BPNs are considered to be ubiquitous across cultures. (Ryan and Deci, 2017)
	At least one measure of school engagement	The focus of the review is on school engagement.
	Measured all elements of BPNs; measures of Autonomy, Competence and Relatedness.	This allowed for a comparison of each need's relationship to engagement and ensured that any combined scores were representative of all needs.

	Understanding of BPNs through the lens of Deci and Ryan's (2000) Self-Determination Theory.	The focus of the review is on BPN from a SDT perspective.
	Able to access through University log in, Google Scholar or through British Psychological Society Membership.	Accessibility
<b>Exclusion Criteria</b>	PE specific articles	A number of articles that were identified as possibly relevant in my initial searches, focussed on the fulfilment of BPN within physical education. These were excluded as it was felt that these would be difficult to generalise.

#### ***1.3.4 Stage 5 – Mapping the studies and critical appraisal.***

Studies which were identified as meeting the in-depth criteria were then analysed in detail and mapped according to the following criteria (table 4).

- Participants – total number and age
- Country and Context – where the research was carried out.
- Measure of BPNs – data collection tools for measures of BPN fulfilment
- School Engagement Measure – data collection tools for measures of school engagement including elements of engagement that were considered.
- Research Design
- Effect Size Availability

Table 4 - In depth review of screened studies which meet the inclusion and exclusion criteria for this review.

Study	Participants		Country	Context	Self - determination measure	School Engagement measure	Study design	Effect size available?
	Total	Ages						
Raufelder et al. (2014)	1088	12-15 years old	Germany	Secondary school.	Measure developed by Prenzel, Kristen, Dengler, Ettle, and Beer (1996)– measures of competence, autonomy and relatedness on six-point Likert scales.	Measures based on Skinner et al. (2008) and their description of emotional and behavioural engagement. Three five-point Likert scale questions addressing each area.	Structural equation modelling.  Direct pathways and bootstrapping for indirect pathways.	Yes  $\beta$ - standardised regression coefficient
Park, Holloway, Arendtsz, Bempechat, and Li (2012)	94	14-15 years old	California (US)	High School, ninth grade.	One question each for relatedness, competence and autonomy (based	Emotional engagement  In line with previous	Three-year longitudinal study.	Yes  SD units

					on assumptions about what these constructs mean).	experience sampling method research (Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003) three five-point Likert scale questions relating to interest, concentration and enjoyment.	Experience sampling method.  Hierarchical linear modelling	Reported to be equivalent to effect sizes
Saeki and Quirk (2015)	83	11-12 years old	California USA	Elementary school, Sixth Grade.	Competence – the perceived competence scale for children (Harter, 1982).  Relatedness – Psychological	Conceptualised as a multi-dimensional construct: affective behavioural and cognitive (Fredricks et al.,	Testing mediation models.	Yes  $\beta$ - standardised regression coefficient

					<p>sense of school membership scale (Goodenow, 1993).</p> <p>Autonomy - Items from Assor, Kaplan, and Roth (2002) study.</p>	<p>2004; Jimerson, Campos, &amp; Greif, 2003; Wang, Willett, &amp; Eccles, 2011)</p> <p>Measured using 16 items from the Student Engagement in School Questionnaire (Lam &amp; Jimerson, 2008)</p>		
Reeve and Lee (2014)	351	15-18 years old	Korean	High school, grades 1,2 and 3.	<p>Activity-Feelings States scale (Reeve &amp; Sickenius, 1994)</p> <p>Measured three areas separately</p>	<p>Assessed 4 composite areas of engagement – behavioural, emotional,</p>	Structural equation modelling	<p>Yes</p> <p><math>\beta</math> - standardised regression coefficient</p>

					and created one composite score	cognitive, agentic (Reeve, 2013).  Behavioural and emotional engagement assessed through engagement vs disaffection with learning scale (Skinner, Kindermann, & Furrer, 2009)  Cognitive engagement – Metacognitive strategies questionnaire (Wolters, 2004)		
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						Agentic engagement – agentic engagement scale (Reeve, 2013)		
Van Ryzin (2011)	423	12-16 years old	American, Upper Mid-West.	Secondary schools	Autonomy – shortened version of learning climate questionnaire (Williams & Deci, 1996)  Relatedness or belongingness (perceptions of teacher and peer support) – subscales from classroom life scale (Johnson, Johnson,	Engagement in learning – Engagement vs disaffection Learning Scale (Patrick, Skinner, & Connell, 1993; Skinner, Wellborn, & Connell, 1990) (separated into behavioural and emotional engagement – combined to create a single	Longitudinal study over one year.  Structural equation modelling	Yes  $\beta$ - standardised regression coefficient

						Buckman, & Richards, 1985)  Competence measured as goal orientation – Patterns of adaptive learning survey (Roeser, Midgley, & Urdan, 1996)	engagement score)		
Jang, Reeve, Ryan, and Kim (2009)	Study 2	256	15-16 years old	Seoul, South Korea.	Middle class, urban high school.	Activity feelings state scale (Reeve & Sickenius, 1994).	Miserandino's (1996) engagement questionnaire (based on Wellborn's (1993) conceptualization of engagement (Class	Structural equation modelling	Yes  $\beta$ - standardised regression coefficient
	Study 3	272	15-16 years old	Seoul, South Korea.	Middle class, urban high school. (different to study 2)	Three items each for autonomy, competence and relatedness,	Wellborn's (1993) conceptualization of engagement (Class	Structural equation modelling	



	Study 4	175	15-16 years old	Seoul, South Korea.	Middle class, urban high school. (different to study 2 and 3)		involvement and task persistence)	Structural equation modelling with 3 wave data collection.	
Raufelder, Regner, Drury, and Eid (2016)		1088	12-15years	Germany	Secondary schools	Three subscales developed by Prenzel et al. (1996) – autonomy, competence and relatedness.	Skinner et al. (2009) – two component model of school engagement – behavioural and emotional – six items for each sub scale	Structural equation modelling	Yes  R <sup>2</sup> and % of variance  β - standardised regression coefficient

### **1.3.5 Effect sizes**

As the studies identified as relevant to my review were quantitative, effect sizes were collected for each relationship that was relevant to the review question. These effect sizes are reported in stage 6 which synthesises the research findings. Effect sizes are measures of the degree of association between two related variables ('*r* family') or a measure of effectiveness of a particular intervention in relation to a comparison ('*d* family') (Coe, 2002; Ellis, 2010).

There are over 70 varieties of effect size across these two groups (Kirk, 2003), however within this literature review the focus will be on effect sizes within the '*r* family'. It is important to note that effect sizes within the '*r* family' are a measure of association and cannot imply causality (Coe, 2002). It is argued that the term 'effect' in this context can therefore be misleading as no claims can be made in relation to whether one variable effects another, it simply identifies they may be associated (ibid). This uncertainty in relation to causality is reflected in my review question which seeks to explore a possible relationship between school engagement and BPN satisfaction rather than the impact of one variable on another.

In order to support a common understanding of the magnitude of an effect, qualitative descriptors have been associated with a range of thresholds. Ellis (2010) Suggests the most commonly used thresholds within the social sciences literature are those proposed by Cohen (1988) (appendix 1). Cohen's benchmarks mark out the required levels for a small medium or large effect, anything that does not meet the small effect threshold is considered trivial (Ellis, 2010). These thresholds allow researchers to compare effect sizes across studies and give straightforward criteria for bringing a qualitative understanding to quantitative measurements (ibid). It is argued that although these benchmarks are arbitrary they are logical enough to be meaningful (ibid) with a medium effect considered as an effect which is "visible to the naked eye of the careful observer" (Cohen, 1992, p. 156) such as the height difference between 14 and 18 year old girls.

Despite these possible advantages, the use of Cohen's benchmarks has been criticised with Ellis (2010) arguing that reliance on these basic descriptors may lead to the oversimplification of findings rather than consideration of what the results mean within a real-world context . Glass (1981) suggests that using these benchmarks dissociates the result from its context which may be influential in

interpreting the results. In response to this Ellis proposes “three C’s” which should be considered when interpreting effect sizes: context, contribution and Cohen. I will return to these factors within my discussion.

Another issue is that there are variations in the way that effect sizes are calculated (Baguley, 2009). For example, a  $d$  statistic can be calculated using different standard deviation units which can lead to variations in the effect size that is reported (ibid). This leads to issues even when comparing the same statistic across studies.

Despite these concerns with reliability, effect size measures are able to give a tentative indication of the magnitude of an effect. Therefore, I will consider and compare these within the results section of the literature review. It is important that I continue to recognise the possible issues with this and in order to provide further warrant to any conclusions drawn I will also consider these results alongside their context and contribution as suggested by Ellis (2010).

### **1.3.6 Weight of Evidence**

In order to evaluate the quality of the studies included in this review I systematically analysed each study using the Evidence for Policy and Practice Information (EPPI) Weight of Evidence (WoE) tool (EPPI-Centre, 2007). This framework provides criteria which help to develop a judgement on both the methodological soundness and relevance of studies (Gough, 2007). The tool consists of three areas of judgement which combine to make an overall judgement of what a study contributes to answering a review question. These judgements include:

- The soundness of the study based on its coherence and integrity (A).
- The appropriateness of the research design in answering the review question (B).
- The relevance of the study focus in relation to the review question (C).
- An overall judgement on the weight given to this study taking into account the previous judgements. (D) (Gough, 2007)

I recognise that many of these judgements are based upon my judgements of the research and are influenced by my beliefs and perspectives, however reviewing each study in this way allows for a more rigorous approach which helps me to form a judgement in a systematic way. Table 5 provides an overview of the judgements I

made for each article across each of the four areas. The overall weight given to each paper was based on an average of the judgements made across area A, B and C. An in-depth review of how I came to my judgement for part A of the weight of evidence evaluation, using the 12 elements of methodological quality outlined by the EPPI-Centre WoE tool, can be found in appendix 2.

Table 5 - Weight of evidence judgement

<b><u>Study</u></b>	<b><u>Weight of Evidence A</u></b>	<b><u>Weight of Evidence B</u></b>	<b><u>Weight of Evidence C</u></b>	<b><u>Weight of Evidence D</u></b>
<b>Raufelder et al. (2014)</b>	Medium	Medium/High	Medium	Medium
<b>Park et al. (2012)</b>	Low/Medium	Medium	Low/Medium	Low/Medium
<b>Saeki and Quirk (2015)</b>	Low/Medium	Low/Medium	Medium	Low/Medium
<b>Reeve and Lee (2014)</b>	Medium/High	High	Medium	Medium/High
<b>Van Ryzin (2011)</b>	Medium/High	Medium/High	Medium/High	Medium/High
<b>Jang et al. (2009)</b>	<b>Study 2</b>	Medium/High	Medium	Medium
	<b>Study 3</b>	Medium/High	Medium	Medium
	<b>Study 4</b>	Medium/High	Medium	Medium
<b>Raufelder et al. (2016)</b>	Medium	Medium/High	Medium	Medium

Overall weight of evidence judgements for two studies was evaluated as Low/Medium due to:

- Small sample sizes
- Screening of participants allowed to take part considered unethical and limited generalisability.
- A lack of detail relating to data analysis methods.

→ Inappropriate data collection tools which do not seem to match the construct the researcher claims they are measuring.

### **1.3.7 Validity of data collection tools**

The use of inappropriate data collection tools was a particular area of concern within my analysis of the research articles. Many of the articles used measurement tools that did not seem to measure BPN satisfaction in a way that aligned with the definitions outlined by SDT (Deci & Ryan, 1985, 2000, 2002). In some studies, the complexity and multidimensional nature of each need was reduced to one question. For example, in Park et al's (2012) study relatedness need satisfaction was reduced to a measure of "How satisfied were you with the support given to you by others?" which does not reflect the concept of relatedness defined as caring for and feel cared for by others (Deci & Ryan, 2000; Ryan & Deci, 2009).

I also had concerns relating to Saeki and Quirk's (2015) use of Harter's (1982) perceived competence scale for children which was created before much of the published material relating to Deci and Ryan's understanding of BPN's. Harter (1982) understands competence as an ability or capacity to do something, which does not align with the need to feel effective in interacting with your environment (Deci & Ryan, 1985, 2000, 2002; Ryan & Deci, 2009). In response to these concerns, studies which were judged to have issues with the validity of their measurement tools were given a lower weight of evidence rating.

## **1.4 Stage 6 – Synthesis of findings**

Within this section I explore in more detail the relationship between BPN and school engagement as reported in the studies included in this review. I have broken this down to explore the relationship between each element of BPN's and school engagement separately before exploring the possible relationship between school engagement and BPN fulfilment and the impact of motivation types on this relationship.

Each section starts with a table of each relevant research paper ranked in order of its weight of evidence alongside the effect sizes that were reported. Due to the multi-dimensional nature of the construct of school engagement, the constructs considered

by each article (cognitive, emotional, behavioural and agentic engagement) are detailed within the table in order to provide context to the relationship that is being explored. Non-significant relationships are included in order to reduce report bias.

The effect size thresholds were based upon Cohen’s (1988) descriptions alongside Baguley’s (2009) suggestion that a  $\beta$  value taken from a linear regression is an equivalent effect size to  $r$  (table 6). Within Park et al’s (2012) paper SD units are reported which they suggest can be considered equivalent to effect sizes. Within this paper qualitative descriptors of the magnitude of the effects are given but no information was provided as to the thresholds which were used therefore I am unable to provide this information in table 6.

Table 6 - Effect size thresholds used to establish effect magnitude taken from Cohen (1988) and Baguley (2009)

<u>Reported Effect Size</u>	<u>Small Effect</u>	<u>Medium Effect</u>	<u>Large Effect</u>
$r$	0.10	0.30	0.50
$\beta$	0.10	0.30	0.50
$R^2$ (% of variance)	0.02 (2%)	0.13 (13 %)	0.26 (26%)

Within each section all effect sizes are colour coded as outlined in the colour key provided. All reported effects were significant at the  $p < 0.05$  level. No colour indicates that no significant effect was found.

#### **1.4.1 Autonomy Need Satisfaction and School Engagement**

A summary of the articles considering the relationship between autonomy need satisfaction and school engagement can be found in table 7. For the articles included in this review, five explored the association between autonomy need satisfaction and school engagement. All of these articles found at least one significant relationship between autonomy need fulfilment and at least one element of school engagement. However, there were two reported relationships where autonomy fulfilment was not related to school engagement. Raufelder et al. (2014) found a non-significant association between autonomy need fulfilment and behavioural school engagement and Reeve and Lee (2014) found that in a longitudinal study engagement did not consistently predict autonomy across time points. Neither of these studies offer an

explanation for why their results are not consistent with other articles studying the same relationship. The reported effect sizes ranged from small to medium. Smaller effects tended to be reported by articles ranked more highly in terms of weight of evidence.

Table 7 - Weight of evidence judgement and reported effect sizes for autonomy need fulfilment and school engagement for each article.

Effect size	Colour
Small	
Small to Medium	
Medium	
Medium to Large	
Large	

Study	WOE	Effect Size	Engagement measure
Reeve and Lee (2014)	Medium/High	Engagement at time 1 predicts autonomy satisfaction at time 2 - $\beta=0.22$ (small to medium effect).	Combined behavioural, emotional, cognitive and agentic engagement score.
		Engagement at time 2 does not predict autonomy at time 3.	
Van Ryzin (2011)	Medium/High	When measured at one time point (2009), autonomy satisfaction was associated with engagement - $\beta=0.20$ (small effect) .	Combined behavioural and emotional engagement scores.
		Engagement in 2008 is associated with autonomy in 2009 – $\beta=0.14$ (small effect).	

<b>Raufelder et al. (2014)</b>		<b>Medium</b>	Autonomy support on emotional school engagement – $\beta= 0.19$ (small effect).	Separate measures for behavioural and emotional engagement
			No significant effect for Autonomy support on behavioural school engagement	
<b>Jang et al. (2009)</b>	<b>Study 2</b>	<b>Medium</b>	Autonomy satisfaction predicts variance in engagement $\beta=0.39$ (medium effect size).	Engagement as a combined score for task persistence and class involvement
	<b>Study 3</b>	<b>Medium</b>	Autonomy satisfaction predicts variance in engagement $\beta=0.37$ (medium effect size).	
	<b>Study 4</b>	<b>Medium</b>	Autonomy satisfaction predicts variance in engagement $\beta=0.29$ (small to medium effect size).	
<b>Park et al. (2012)</b>		<b>Low/Medium</b>	Autonomy satisfaction is associated with emotional engagement at the within student level – 0.24 SD (standard deviation units) (moderate effect).	Emotional engagement only.
			Autonomy satisfaction is associated with emotional engagement at the between student level - 0.33 SD – (moderate effect).	



### 1.4.2 Competence Need Satisfaction and School Engagement

A summary of the articles considering the relationship between competence need satisfaction and school engagement can be found in table 8. For the articles included in this review, five explored the association between competence need satisfaction and school engagement. All of these articles suggested that there was a relationship between at least one element of competence need fulfilment and at least one element of school engagement. Three relationships between competence need fulfilment and school engagement were found to be non-significant. Competence as measured by mastery goal orientation had no significant relationship with school engagement, however competence measured as a performance goal orientation had a negative relationship with school engagement when measured at one time point (Van Ryzin, 2011). A similar association was found for data that considered the impact of engagement on BPN fulfilment over a year (Van Ryzin, 2011). The other non-significant reported relationship was between competence need satisfaction and emotional engagement at the between student level (Park et al, 2012). Again, no explanation was offered as to why these results might have occurred. The reported effect sizes ranged from small to medium and seemed to be spread evenly across the papers regardless of their weight of evidence.

Table 8 - Weight of evidence judgement and reported effect sizes for competence need fulfilment and school engagement for each article

Effect size	Colour
Small	
Small to Medium	
Medium	
Medium to Large	
Large	

Study	WOE	Effect Size	Engagement measure
Reeve and Lee (2014)	Medium/High	Engagement at time 1 predicts competence satisfaction at time 2- $\beta=0.26$ (small to medium effect)	Combined behavioural, emotional, cognitive and agentic engagement score.

		Engagement at time 2 predicts competence satisfaction at time 3 - $\beta=0.25$ (small to medium effect)	
<b>Van Ryzin (2011)</b>	<b>Medium/High</b>	When measured at one time point (2009), competence satisfaction as measured by performance goal orientation negatively predicted variance in engagement - $\beta= - 0.20$ (small effect size)	Combined behavioural and emotional engagement scores.
		When measured at one time point (2009), no significant relationship found for competence satisfaction as measured by mastery goal orientation and engagement.	
		Engagement in 2008 negatively predicted competence as measured as a performance goal orientation in 2009 – $\beta=- 0.18$ (small effect)	

			Engagement in 2008 has no significant relationship with competence as measured by a mastery goal orientation in 2009.	
<b>Raufelder et al. (2014)</b>		<b>Medium</b>	Competence fulfilment on emotional school engagement – $\beta= 0.24$ (small to medium effect)	Separate measures for behavioural and emotional engagement
			Competence fulfilment on behavioural school engagement – $\beta= 0.31$ (medium effect)	
<b>Jang et al. (2009)</b>	<b>Study 2</b>	<b>Medium</b>	Competence satisfaction predicts engagement $\beta=0.23$ (small effect size)	Engagement as a combined score for task persistence and class involvement
	<b>Study 3</b>	<b>Medium</b>	Competence satisfaction predicts engagement $\beta=0.42$ (medium to large effect size)	
	<b>Study 4</b>	<b>Medium</b>	Competence satisfaction predicts engagement $\beta=0.41$ (medium to large effect size)	
<b>Park et al. (2012)</b>		<b>Low/Medium</b>	Competence satisfaction is associated with emotional engagement at the within student level – 0.28 SD (moderate effect).	Emotional engagement only.

		There is no significant relationships between competence satisfaction and emotional engagement at the between student level	
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### **1.4.3 Relatedness Need Satisfaction and School Engagement**

A summary of the articles considering the relationship between relatedness need satisfaction and school engagement can be found in table 9. For the articles included in this review, five explored the association between relatedness need satisfaction and school engagement. Four of these articles suggested that there was a relationship between at least one aspect of relatedness need fulfilment and at least one element of school engagement. Four of these studies also report either no significant relationship between relatedness need satisfaction and school engagement or at least one element of the relationship is reported as non-significant.

Jang et al. (2009) suggest there is no association between relatedness need fulfilment and school engagement with Van Ryzin (2011) suggesting that only relatedness need satisfaction through peer support (and not teacher support) has a significant relationship with school engagement. Raufelder et al. (2014) report that there is a significant relationship between relatedness need satisfaction and emotional engagement but not behavioural engagement. However, although Park et al. (2012) also report no significant relationship between relatedness need satisfaction and emotional engagement at the between student level, they suggest that there is a moderate significant effect at the within student level (Park et al., 2012). The reported significant effect sizes ranged from small to medium and are varied across the papers regardless of their weight of evidence.

When considering the available evidence, relatedness seems to be the aspect of BPN fulfilment that has the most varied evidence associated with it which may indicate that of the three BPN's this has the weakest association with school engagement.

Table 9 - Weight of evidence judgement and reported effect sizes for relatedness need fulfilment and school engagement for each article

Effect size	Colour
Small	Blue
Small to Medium	Green
Medium	Yellow
Medium to Large	Orange
Large	Pink

Study	WOE	Effect Size	Engagement measure
<b>Reeve and Lee (2014)</b>	<b>Medium/High</b>	Engagement at time 1 predicts relatedness satisfaction at time 2 - $\beta=0.18$ (small effect)	Combined behavioural, emotional, cognitive and agentic engagement score.
		Engagement at time 2 predicts relatedness satisfaction at time 3 - $\beta=0.16$ (small effect)	
<b>Van Ryzin (2011)</b>	<b>Medium/High</b>	When measured at one time point (2009), relatedness satisfaction as measured by peer support, predicted variance in engagement - $\beta=0.23$ (small to medium effect)	Combined behavioural and emotional engagement scores.

		<p>When measured at one time point (2009), no significant relationship found for relatedness satisfaction as measured by teacher support and engagement.</p>	
		<p>Engagement in 2008 predicts belonging measured as teacher support in 2009 – <math>\beta=0.23</math> (small to medium effect)</p>	
		<p>Engagement in 2008 has no significant relationship with relatedness as measured by peer support in 2009.</p>	
<b>Raufelder et al. (2014)</b>	<b>Medium</b>	<p>No significant effect found for relatedness satisfaction and emotional school engagement.</p>	Separate measures for behavioural and emotional engagement
		<p>Relatedness fulfilment on behavioural school engagement – <math>\beta= 0.19</math> (small effect)</p>	

<b>Jang et al. (2009)</b>	<b>Study 2</b>	<b>Medium</b>	No significant effect found for relatedness satisfaction and school engagement	Engagement as a combined score for task persistence and class involvement
	<b>Study 3</b>	<b>Medium</b>	No significant effect found for relatedness satisfaction and school engagement	
	<b>Study 4</b>	<b>Medium</b>	No significant effect found for relatedness satisfaction and school engagement	
<b>Park et al. (2012)</b>		<b>Low/Medium</b>	Relatedness satisfaction is associated with emotional engagement at the within student level – 0.31 SD (moderate effect).	Emotional engagement only.
			There is no significant relationship between relatedness satisfaction and emotional engagement at the between student level	

#### 1.4.4 BPN Fulfilment as a Composite and School Engagement

Although most studies provided a breakdown of the association between each need and school engagement, Saeki and Quirk (2015) measured all three elements but then combined them into one score. When measuring the relationship between BPN fulfilment as one score and a combined school engagement score they reported a large effect size (see table 10). While this is interesting, many of the other studies do not report such a large effect between any element of BPN satisfaction. That combined with the low/medium weight of evidence rating suggest that this result should be considered with caution.

Reeve and Lee (2014) also provided a combined BPN satisfaction score in order to explore the general need satisfaction relationship with school engagement. This study found a significant small to medium effect of school engagement at time 2 on BPN satisfaction at time 3, however there was no significant relationship between BPN satisfaction at time 1 and engagement at time 2 (see table 10).

Table 10 - Weight of evidence judgement and reported effect sizes for BPN need fulfilment as a composite score and school engagement for each article

Effect size	Colour
Small	Blue
Small to Medium	Green
Medium	Yellow
Medium to Large	Orange
Large	Pink

Study	WOE	Effect Size	Engagement measure
Reeve and Lee (2014)	Medium/High	Engagement at time 2 predicts BPN satisfaction at time 3 $\beta=0.12$ (small to medium effect)	Combined behavioural, emotional, cognitive and agentic engagement score.
		BPN satisfaction at time 1 does not predict school engagement at time 2.	



<b>Saeki and Quirk (2015)</b>	<b>Low/Medium</b>	BPN satisfaction is significantly related to engagement $\beta=0.64$ (large effect)	Measured cognitive, behavioural and affective school engagement then combined these to make one score.
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### ***1.4.5 Motivation Type and the Relationship Between BPN Fulfilment and School Engagement***

Raufelder et al. (2016) take the exploration of the association between BPN and school engagement one step further. They suggest that the relationship between need fulfilment and engagement changes as a function of motivation type. They posit that there are four motivation types in adolescence: peer and teacher dependent, teacher dependent, peer dependent and independent. The results suggest that whilst BPN fulfilment accounts for a significant amount of variance of both emotional and behavioural engagement with a medium to large effect size, each motivation type may have a different pattern of need fulfilment associated with this (see table 11). Peer and teacher dependent motivation types present significant direct effects of autonomy fulfilment on behavioural engagement (medium effect) and competence fulfilment on emotional engagement (medium to large effect). Teacher dependent motivation types show significant direct effects of relatedness on both emotional (large effect) and behavioural engagement (medium to large effect). Peer dependent motivation types show significant direct effects of competence on emotional and behavioural engagement (medium effects) and relatedness on emotional (large effect) and behavioural engagement (medium effect). Independent motivation types show significant direct effects of competence on emotional (medium to large effect) and behavioural engagement (medium effect).

This is a relatively new area of exploration within the literature in this area however it suggests that there are large effects associated with one motivation type that are not associated with another. Due to the lack of alternative research to compare this with it is difficult to draw clear conclusions from this study, however it appears to be an area worthy of further exploration.

Table 11 - Weight of evidence judgement and reported effect sizes for BPN need fulfilment and school engagement for each motivation type

Effect size	Colour
Small	Blue
Small to Medium	Green
Medium	Yellow
Medium to Large	Orange
Large	Pink

Study	WOE	Motivation Type	Need Measure	Engagement Measure	Effect Size
Raufelder et al. (2016)	Medium	Peer and Teacher Dependent	BPN fulfilment as a composite.	Emotional engagement	23% of variance accounted for $R^2=0.231$ (medium to large effect)
				Behavioural engagement	24% of variance accounted for $R^2=0.240$ (medium to large effect)
			Autonomy	Emotional engagement	No direct effect
				Behavioural engagement	Direct effect $\beta=0.36$ (medium effect)
			Competence	Emotional engagement	Direct effect $\beta=0.41$ (medium to large effect)

				Behavioural engagement	No direct effect
			Relatedness	Emotional engagement	No direct effect
				Behavioural engagement	No direct effect
	Teacher Dependent	BPN fulfilment as a composite.		Emotional engagement	23% of variance accounted for $R^2=0.230$ (medium to large effect)
				Behavioural engagement	26% of variance accounted for $R^2=0.264$ (large effect)
		Autonomy		Emotional engagement	No direct effect
				Behavioural engagement	No direct effect
		Competence		Emotional engagement	No direct effect
				Behavioural engagement	No direct effect
		Relatedness		Emotional engagement	Direct effect $\beta=0.51$ (large effect)
				Behavioural engagement	Direct effect $\beta=0.47$ (medium to large effect)

		Peer Dependent	BPN fulfilment as a composite.	Emotional engagement	29% of variance accounted for $R^2=0.292$ (large effect)
				Behavioural engagement	48% of variance accounted for $R^2=0.291$ (large effect) *
			Autonomy	Emotional engagement	No direct effect
				Behavioural engagement	No direct effect
			Competence	Emotional engagement	Direct effect $\beta=0.25$ (small to medium effect)
				Behavioural engagement	Direct effect $\beta=0.28$ (small to medium effect)
		Relatedness	Emotional engagement	Direct effect $\beta=0.39$ (medium to large effect)	
			Behavioural engagement	Direct effect $\beta=0.23$ (small to medium effect)	
		Independent	BPN fulfilment as a composite.	Emotional engagement	26% of variance accounted for $R^2=0.263$ (large effect)
				Behavioural engagement	16% of variance accounted for $R^2=0.159$ (medium effect)

			Autonomy	Emotional engagement	No direct effect
				Behavioural engagement	No direct effect
			Competence	Emotional engagement	Direct effect $\beta=0.44$ (medium to large effect)
				Behavioural engagement	Direct effect $\beta=0.33$ (medium effect)
			Relatedness	Emotional engagement	No direct effect
				Behavioural engagement	No direct effect

\* For the percentage of variance and  $R^2$  value associated with BPN fulfilment and behavioural engagement for peer dependent motivation types there appears to have been an error in the reporting of the statistics within this article (i.e. 48% of variance accounted for but  $R^2= 0.291$ ). As both of these statistics would be considered a large effect this is how it will be understood as part of this systematic review.

## 1.5 Discussion

This systematic review set out to explore the question “What is the relationship between the fulfilment of BPN’s and school engagement in pupils aged 11-18 years?”. A number of studies were identified that may go some way towards answering this question and have been analysed as outlined above. As mentioned earlier the studies that were included in this review all contained effect sizes from the ‘*r* family’ which means that the conclusions drawn from this data cannot imply causality (Coe, 2002; Ellis, 2010). Therefore, within this next section I will explore the possible relationship between BPN fulfilment and school engagement in terms of the association between the two variables rather than the impact of one variable on another.

In order to interpret the general trend of the data collected within my review, I will refer to the “three C’s” mentioned earlier within my discussion of effect sizes. Ellis (2010) proposed that when interpreting research which considers effect sizes there are three factors which should be considered: context, contribution and Cohen. Within the findings section of this review the Cohen element of the “three C’s” has already been explored through the reporting of effect sizes and comparing and analysing them in relation to the thresholds created by Cohen (1988). Ellis argues that although these benchmarks might provide us with some information relating to what the effect size might mean, the Cohen element of the “three C’s” is to be considered the least valuable in interpreting the results. He suggests that it is only through considering these alongside context and contribution that any meaningful conclusions can be drawn.

Within the “three C’s” framework context refers to the context within which the research was carried out and how the effect that has been found might function within it. For example, Ellis argues that a small effect may be considered just as influential as a large effect if the initial small effect accumulates into a larger effect or if it changes the perceived probability that a larger outcome might occur. In relation to the findings from the studies included in this review there is a growing body of evidence in which school engagement is associated with a number of positive outcomes for CYP. Therefore, even a small impact on engagement may lead to more positive outcomes for CYP due to its relationship with school dropout rates

(Archambault, Janosz, Fallu, & Pagani, 2009), academic outcomes (Dotterer & Wehrspann, 2016; Li & Lerner, 2011; Seelman, Walls, Hazel, & Wisneski, 2012; Wang, Chow, Hofkens, & Salmela-Aro, 2015; Wang & Peck, 2013) and educational aspirations (Wang & Peck, 2013) which may lead to improved life outcomes.

Contribution refers to considering how the study fits within the existing body of relevant literature. This includes considering whether the findings of the research are similar or different to those within other studies and if not considering why this might be. This might lead to new research questions which require further exploration in order to develop a better understanding of the relationship under consideration. Within the studies that are included in this review it is clear that there are a number of variations in the effect sizes that have been found for each relationship that has been considered. The most consistent relationships between need fulfilment and engagement seem to relate to autonomy and competence need fulfilment. The majority of the studies within this review report significant relationships, with non-significant relationships relating to only one element of engagement or only one measure of need fulfilment. However, the relationship between relatedness need fulfilment and school engagement is much more inconsistent with repeated findings of non-significant relationships.

In order to develop a better understanding of the variation in the relationships presented in the literature, Raufelder et al. (2016) have considered the possible influence of motivation. Although the first study of its kind this research seems to provide evidence of possible patterns of need fulfilment associated with each motivation type. Further attempts to replicate these findings across contexts may allow for a better understanding of the discrepancies with the results found across studies though it is also important that other alternative explanations are sought as it is unlikely that such a complex phenomenon will be explained entirely by motivation types.

Referring back to the cross cultural concerns mentioned within the introduction to this review Jang et al. (2009) and Reeve and Lee (2014) both carried out studies in South Korea. Jang et al controlled for socio cultural variables including collectivism, cultural expectations and parental expectations and found no differences in relationships which they suggest means that these factors do not influence the relationship between BPN satisfaction and engagement. However, it could be suggested that such complex cultural contexts cannot be reduced to scales and scores which may

suggest that this area of research warrants continued exploration. It is also interesting to note that Reeve and Lee (2014) whilst also carrying out their study within a South Korean context found different relationships to Jang et al. (2009). They suggested that there was a relationship between all three BPN and engagement when Jang et al found no relationship for relatedness across all three of the studies in their article. These findings may be confounded by the use of different conceptualisations and measures of engagement, with Reeve and Lee using a four-element definition of engagement with three combined measurement scales and Jang et al using Miserandino's (1996) engagement questionnaire. The use of varied measurements scales is likely to be a continuing area of difficulty when synthesising results from this area of research and the choices made by researchers in relation to the data collection tools they choose is something that needs to be considered carefully in the future.

## **1.6 Summary and Conclusions**

From the synthesis of the evidence and the discussion provided it seems that from a quantitative perspective there is evidence to suggest that there may be an association between BPN fulfilment and school engagement. It appears that this relationship is more consistently evidenced for autonomy and competence need fulfilment but there are still a number of studies suggesting a possible relationship for relatedness. An explanation for the lack of consistency in relation to the findings from each study currently seems to be missing from the literature, however Raufelder et al's (2016) exploration of motivation types provides a promising start to developing understanding in this area.

The research in this area is also currently limited to quantitative correlational studies which limits the conclusions which can be drawn. The evidence drawn upon within this review suggests that BPN satisfaction and school engagement may be associated with one another, however the nature of this relationship is not clear. In order to explore this further, additional randomised controlled trials exploring how interventions to promote the fulfilment of BPNs impact on school engagement may be beneficial. This approach would again align with Ryan and Deci's (2017) pursuit of empirical evidence in the development of their theory.



A possible alternative approach to the development of a better understanding of how BPN's might impact on school engagement may be to explore the experiences of CYP in schools. An in-depth exploration of what CYP feel helps them to engage better in school may open up understandings that extend what can be offered by SDT. This may also create new understandings of the reasons why relatedness may be less influential in the promotion of engagement in schools.

In light of these findings, Wilding's (2015) suggestion that SDT may be a helpful framework for educational psychologists in their work in supporting disaffected students should be considered with caution. It could be considered that although the theory continues to provide a possible basis from moving away from within child narratives relating to disaffection, the evidence to suggest that BPN fulfilment may support school engagement is not clear. This is not to suggest that this theory should be dismissed in relation to supporting these pupils but to caution that this theory should not be relied upon in isolation. It is important that alternative theories and explanations continue to be sought and that the needs and experiences of CYP are considered as unique to each individual.



## **Chapter 2. Bridging Document**

### **2.1 Introduction**

This document aims to link together my systematic review (chapter 1) and empirical research (chapter 3) and provides some additional detail about the decisions made throughout my research project. I will explore some of the reasons for my interest in this research area, before outlining the links between my systematic review and empirical research. This will lead to a consideration of the ontological and epistemological underpinnings of this thesis before considering the rationale behind my method. In addition, I will reflect on some of the ethical considerations that arose within my research.

### **2.2 Overall Rationale**

#### ***2.2.1 My Personal Experiences, Motivations and Values***

Within my placements during my training to become an educational psychologist and throughout my experiences in schools prior to gaining a place on this course, I have found myself drawn to working with pupils who are deemed to have “disengaged” from education. My experiences across both mainstream and specialist Social Emotional and Mental Health (SEMH) provisions led me to a particular interest in what schools can do to support these pupils due to the seemingly high links between disengagement and school exclusion. One experience that particularly struck me was a visit to a Pupil Referral Unit (PRU) during a placement in the first year of my training. This PRU was attended by pupils who had been permanently excluded from their mainstream school however they were required to wear the uniform of the school that they had been excluded from. I was struck by the paradox of the pupils wearing a uniform of a school that they were no longer a part of which led me to wonder about the implications that this may have for their sense of belonging.

Alongside this interest I have found myself increasingly engaging with Self Determination Theory (SDT) (Deci & Ryan, 1985, 2000, 2002; Ryan & Deci, 2017) as a guiding framework within my practice. Considering the suggested overlap in the conceptualisation of belonging and relatedness (Osterman, 2000), which is

highlighted as a Basic Psychological Need (BPN) within SDT I therefore began to wonder about the possible value of this as a framework to support these pupils.

I was drawn to this theory due to its move away from within child explanations of behaviour with its emphasis on the environmental factors which may influence behaviour and ultimately wellbeing. It should be noted that although I have used this theory as a guiding framework within my research I acknowledge that it is not the only possible explanation of behaviour. However, I feel that this theory offers a perspective that moves away from within pupil explanations of difficulty towards identifying the barriers within the environment which teachers are more able to change which may help schools to feel empowered to make changes to create positive outcomes for CYP.

I feel that my desire to support these pupils is underpinned by my values relating to promoting social justice. The latest published national school exclusion data suggests that “Pupils known to be eligible for and claiming free school meals (FSM) are around four times more likely to receive a permanent or fixed period exclusion than those who are not eligible...” (Department for Education, 2016a). Considering the numerous negative outcomes associated with school exclusion including lost educational opportunities, stigmatisation and being cut off from peer support (Daniels & Cole, 2010), I am concerned about the ways in which systems within schools may reproduce social inequalities. I feel that the role of an Educational Psychologist as a “critical friend” (Squires & Farrell, 2006) allows us to challenge schools in relation to this whilst helping them find a way forward.

### ***2.2.2 Local and Political Context.***

The Local Authority that I am currently on placement within has one of the highest levels of permanent exclusion within the north-east region (Department for Education, 2016a) which has led to a number of initiatives aimed at reducing this. However, it is suggested that government policies driven by a desire to raise attainment are creating pressures on schools to increase “measurable academic outputs” which conflicts with policies relating to the inclusion of pupils within mainstream schools (Hayden, 1997).

Over 18 years after this suggestion, the context within schools does not seem to have changed with a number of the schools I have worked with identifying the mounting pressure associated with achieving outcomes in line with “Progress 8”

(Department for Education, 2016b). Within my experiences, these pressures appear to place a significant strain on schools in relation to their allocation of resources limiting the support available to pupils who do not conform to school expectations in relation to their engagement.

This has led me to reflect on how Educational Psychologists can work effectively with schools to promote positive changes for these pupils in a way that does not create too much additional pressure on teachers who may already be feeling overstretched. I therefore wanted to work collaboratively with staff so that they were able to apply psychological theory within their practice in a way that was sensitive to their context. My initial focus was on applying a theory of BPNs to support pupils who were perceived as disengaged, however this focus was adapted in line with the collaborative nature of the research project. This is discussed in more detail later in this document.

I will now explore the links between my systematic review and empirical research.

### **2.3 From Systematic Review to Empirical Research**

As described earlier, there are a number of factors that developed my interest in the area of BPN fulfilment and school engagement which was the focus of my systematic review. It was not initially my intention to explore BPNs from a quantitative perspective or to focus on the relationship between these variables in a positivist manner. However, in line with the call for empirical evidence to support the claims made within SDT (Deci & Ryan, 1985, 2000, 2002; Ryan & Deci, 2017), much of the research in this area is quantitative.

As the research literature came from a positivist paradigm with a quantitative focus, the literature review was conducted from within this perspective. Within my review of the literature I felt that there were a number of limitations to exploring BPN fulfilment from this perspective. I expressed concerns about the appropriateness of the measurement tools used within some of the studies, particularly in relation to whether the measures were related to the need they claimed to measure. From the discussion of my conceptual framework later in this document it will become apparent that this approach to exploring need fulfilment does not sit consistently with my world

view, however I felt that the conclusions drawn from my review may give a tentative indication of a possible relationship.

Through synthesising the findings of the studies included in my systematic review I concluded that despite inconsistencies in the relationships found within the literature, all studies suggested some relationship between the fulfilment of at least one need and one element of school engagement. This, alongside Wilding's (2015) suggestion that SDT may be a helpful framework for Educational Psychologists in supporting disaffected students, led to the suggestion that this could be used as a tentative framework for guiding practice.

My empirical research therefore built upon my systematic review through seeking to apply this theory in a contextually sensitive manner. I sought to move away from a positivist blanket application of how this theory should be applied to a collaborative project seeking to respond to the unique needs of teachers in creating positive outcomes for their pupils.

In line with my research interests outlined earlier, my initial focus was on supporting staff to develop a framework which could be used to support their conversations with pupils to help them understand the factors that may be influencing (lack of) engagement in school. I hoped this would help teachers feel empowered to make changes to support these pupils by identifying environmental factors which may be thwarting the fulfilment of their BPNs. I then hoped to explore the teachers' experiences of using this framework with their pupils to help identify how a theory BPNs can be applied effectively in schools. However, a number of teachers who took part in this research did not feel that this was relevant to their role. Therefore, due to the collaborative nature of the research, the focus shifted so that teachers were able to apply the theory of BPN's within their practice in a way that aligned with their unique contexts. My focus as a researcher then turned to the factors that supported or limited the changes that they made (see chapter 3).

I will now explore the conceptual framework which underpins my work within this thesis.

## **2.4 Conceptual Framework**

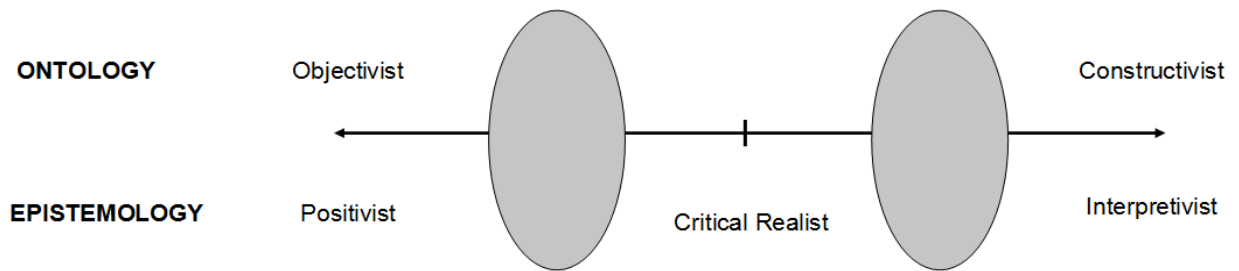
Grix (2010) argues that ontology and epistemology are the foundations upon which research is built. Ontology can be understood as an individual's claims and assumptions about the nature of social reality with epistemology concerned with the possible ways of gaining knowledge about this social reality (Blaikie, 2010). It is suggested that in coherent research ontology, epistemology, methodology, method and sources should follow consistently from one another (Grix, 2010; Parker, 2013). Using this as a conceptual framework, I will now go on to explore each of these elements within my research.

### ***2.4.1 Ontology and Epistemology***

It is argued that ontology sits across two poles; objectivism and constructivism (Grix, 2010) or realism and relativism (Willig, 2008). It is contended that an objectivist position asserts that social reality exists independently of social actors (Grix, 2010) which aligns with the realist perspective that the world is made up of structures which have causal relationships with one another (Willig, 2008). In contrast to this, a constructivist position suggests that social reality is a product of social interaction which leads to ongoing revision and construction of perceived reality (Grix, 2010) which aligns with the relativist perspective that questions the ability to capture and create rules for the multiple interpretations of the social world (Willig, 2008). Subsequently, three key epistemologies emerge: positivism which is linked to an objectivist ontology, interpretivism which links to a constructivist ontology and critical realism which sits between these two poles (Grix, 2010). It should be noted that across the literature the language relating to these areas differs with social constructionism (Willig, 2008) aligning closely to the interpretivist epistemology outlined by Grix.

Outlining my ontology and epistemology is something that I have found particularly challenging throughout my research. I found myself trying to fit my beliefs into predefined labels that did not encapsulate my view of the world. It was not until reading Grix's (2010) assertion that real world research rarely fits into the neatly defined ontological and epistemological categories outlined in many texts that I felt able to define my view. Grix suggests that the majority of research lies within the shaded areas between research paradigms (see figure 1) and this is where I feel most able to define my views.

Figure 1 - Continuum of key ontological and epistemological positions adapted from Grix (2010)



When considering the continuum suggested by Grix (2010) I feel my ontology lies towards constructivism. I believe our social realities are constructed through our interactions with the world and other individuals and that we cannot objectively uncover relationships that exist outside of this. However, I also believe that quantitative methodologies may offer a tentative estimation of possible relationships to help guide our understanding of social phenomenon. That is not to say that these phenomena exist regardless of their social construction but is understood as an estimation of a relationship between two constructs with some shared meaning across individuals. Grix (2010) suggests that epistemological positions can be understood in terms of a gradation whereby “‘hard’ proponents of one paradigm meet with ‘soft’ proponents of the other” (p63). Within this gradation viewpoint I would therefore describe my stance as a soft critical realist or hard interpretivist position.

I also feel that my research has been influenced by the philosophy of pragmatism. This position suggests that, from a Dewyan perspective, learning occurs through action in and engagement with the world and that what we hold to be “true” does not exist separately of us and our experiences of the world (Burnham, 2013; Stark, 2014). This aligns with the use of action research as a method of inquiry in which our actions and understanding of a situation are continually shaped through a cyclical process of plan, do and review (Stark, 2014). This will be explored further in the next section.

#### **2.4.2 Methodology, Method and Sources**

My research had a transformative focus which used a collaborative action research framework to structure my exploration of the factors which may have influenced changes made by teachers in response to their application of BPN theory in their practice. The importance placed on collaboration within the project aligns with my



constructivist ontology as it allowed the theory to be applied flexibly acknowledging the approximate nature of how this theory might explain complex social contexts. Kamberelis and Dimitriadis (2013) suggest that from a constructivist perspective, focus groups may help create transformative change through dialogic processes. I would argue that the same could be said for the group structure of my collaborative action research project.

The data sources within this research were audio recordings of conversations that took place between the teachers. This was analysed using a data driven inductive thematic analysis (Braun & Clarke, 2013). Once again, the data driven analysis and my consistent reflection on the influence of my own beliefs and experiences in constructing themes and interpreting the data aligns with my constructivist ontology. Within this I have drawn on the philosophy of hermeneutics which recognises the complex contextual factors which influence interpretation (Smith, Larkin, & Flowers, 2012). This data analysis sought to explore some of the factors which may influence change through the application of a theory of BPN's. The tentative nature of the claims made as a result of this once again align with soft critical realist epistemology.

I will now go on to explore the quality of my research in relation to the ethical dilemmas that arose.

## **2.5 Research Quality and Ethics**

Groundwater-Smith and Mockler (2007) argue that research quality is determined by the ways in which ethical principles are embedded in the research process. They suggest five overarching ethical guidelines to help structure reflection upon this. In order to assess the quality of my research, a description of each of these principles and the ways in which I engaged with this are outlined in table 12.

This table suggests that my research was of reasonable quality however there are some issues in relation to obtaining informed consent. I will now go on to explore this in more detail before considering some further ethical implications arising from my insider outsider role. This section will conclude with a summary of some of the limitations of my research.

Table 12 - Groundwater-Smith and Mockler's (2007) ethical guidelines

Principle	Description	My Research
The research should observe ethical protocols and processes.	The research should observe the ethical protocols of social research including seeking informed consent and ensuring that no harm is done.	<p>My research was subject to ethical approval from the University of Newcastle.</p> <p>Throughout my research I adhered to the British Psychological Society code of ethics (British Psychological Society, 2009) however there were some issues in relation to obtaining informed consent due to the ongoing formation of the research in response to changes in the research context. Further discussion of this is provided below.</p> <p>The research did impose any risk to participants.</p>
The research should be transparent in its processes.	The researcher should be accountable for the process and product of their research and should make this clear to participants	Ongoing conversations with participants about the developing focus of the research alongside consent and debrief forms reflecting the changes ensured that transparency was maintained despite the change in the initial focus of the project.
The research should be collaborative in nature.	The research should provide opportunities for discussion and debate of aspects of practice.	Collaboration was encouraged through engaging participants in the development of the focus of the project with ongoing dialogue that gave them control of shaping the outcome.
The research should be transformative in its intent and action.	The research should seek to contribute to the transformation of both practice and society.	The project actively sought to create changes to teaching practices that would improve outcomes for pupils. Participants reported on the changes that they had made and worked together to make plans for further changes in school.
The research should be able to justify itself to its community of practice.	The benefits of the research should outweigh the costs in relation to the effort and resources expended.	The commitment of time expected from teachers was minimal in relation to the knowledge and skills they developed through engaging in dialogue with peers.

### **2.5.1 Informed Consent in Complex Contexts**

As mentioned in chapter 3, a significant ethical challenge encountered within my research was that of obtaining informed consent. The British Psychological Society Code of Ethics (British Psychological Society, 2009) outlines that psychologists should “seek to obtain the informed consent of all clients to whom professional services or research participation are offered” (p12). In accordance with this written consent was obtained from all participants within my research alongside the provision of an information sheet and opportunities to ask questions. However, due to the collaborative nature of the research project the focus of the research changed which meant that the consent I had obtained was no longer entirely relevant.

It is suggested that the notion of informed consent assumes an understanding of the nature and purpose of a research project and how it will proceed (Miller & Boulton, 2007). However, it is argued that social research is often grounded in complex social interactions and research relationships which may alter the initially outlined course of a project (Miller & Bell, 2002; Miller & Boulton, 2007). This raises questions about the purpose of consent and how we can ensure that participants are fully informed prior to making decisions about participation with Miller and Bell questioning whether participants in social research can only ever really consent to participation. Riessman (2005) warns that the application of ethical universalism can lead to the acceptance of ethical homogeneity which carries with it dangers relating to a lack of reflexivity in research.

A further issue relating to consent is that it is built upon the assumption that research participants are autonomous, empowered and informed which does not allow for the recognition of the influence of power imbalances within social contexts (Corrigan, 2003). This is something that I reflected upon within my research in relation to the influence of senior management within the school in influencing the members of staff who took part within the research.

Miller and Boulton (2007) argue that “attempts to standardise procedures and regulate ethical practice, for example through the production and signing of a consent form, acts as a mechanism to ‘contain’ what are often, in reality, complex social worlds and research encounters which do not fit neatly into boxes which can be ticked” (p2199). This follows from Truman’s (2003) questioning of whether informed consent procedures can ever be contextually sensitive enough to encompass these

complexities. However, regardless of these questions it is my duty as a researcher to follow the principles of respect, competence, responsibility and integrity (British Psychological Society, 2009) and as part of this I must strive to ensure that the participants within my research have voluntarily consented to participate and are not misled.

I feel that the collaborative nature of my research project allowed the staff to negotiate a focus that was helpful to them allowing them to be clear about the nature of the research project through creating their own path. This was enhanced by ongoing dialogue with the staff about my changing focus as a researcher. Throughout this dialogue I was explicit with all participants that they could withdraw their involvement at any point and I feel that their understanding of this was evident with two participants choosing to withdraw from the research between the initial group session and the data collection session. Keeping participants informed about the change in focus was also reinforced through the debrief form that was provided to participants which reflected the new focus that was not outlined in the initial information sheet. I feel that this approach to maintaining informed consent within my research aligns with Miller and Boulton's (2007) argument that although informed consent is often understood as a one-off act, in practice it involves an auditable systematic process of demonstrating that as a researcher I am ensuring that participants are respected and protected from harm.

### ***2.5.2 The Researcher as an Insider, Outsider.***

The positioning of researchers as insiders or outsiders in research is something that has been theorised throughout the history of social research (Milligan, 2016). The positioning of a researcher as an objective expert outsider has been linked to traditional positivist views of social research as a science however the value of the insider role has also been considered more recently (Hellawell, 2006). It is argued that researchers can slide along the continuum of insider to outsider throughout the research process and that this requires reflexivity in relation to what this might mean for the research (ibid).

Wright (2015) emphasises the possible ethical implications of the insider outsider role taken by practicing Educational Psychologists when carrying out research. This was

also pertinent within my research due to my dual role as both research and named trainee Educational Psychologist for the school. Some of the ways in which I perceived myself to be positioned as both an insider and outsider are outlined in table 13.

*Table 13 My insider and outsider positioning within my research*

Insider	Outsider
<ul style="list-style-type: none"> <li>• I have worked in a number of schools within the north-east region as a teaching assistant.</li> <li>• I was born in the north-east and undertook the majority of my education in this region.</li> <li>• I have worked in the school as a Trainee Educational Psychologist for 12 months prior to starting the research and continued to do so throughout my research.</li> </ul>	<ul style="list-style-type: none"> <li>• I am an outside professional and not employed directly by the school.</li> <li>• I am currently a Trainee Educational Psychologist and not a teacher.</li> <li>• I have never been employed as a teacher.</li> <li>• Potential to be perceived as an expert.               <ul style="list-style-type: none"> <li>○ I introduced the members of staff to a psychological theory that they were not previously aware of.</li> <li>○ Traditional view of Educational Psychologists as experts (Wagner, 2000)</li> </ul> </li> </ul>

My positioning as both an insider and outsider may have a number of implications for my research (Hellawell, 2006) particularly in relation to power dynamics. It is interesting to note that the two members of staff who withdrew from my research were members of staff that I had no prior relationship with in the school. I am also aware that those members of staff who I already had relationships with may have engaged with the research process differently to those I did not know. This could be considered a possible limitation of my research in that some members of staff were more likely to participate than others.

My possible positioning as an outside expert also has implications for the intended collaborative nature of my research project. In order to try and overcome this I was explicit with the teachers in my research that their knowledge and expertise was equal to my own. I reinforced this throughout the research, encouraging them to make their own decisions when they sometimes looked to me for answers. In line with my constructivist world view I positioned them as having expertise in relation to what was possible within their school context, allowing them to shape the direction of the research in line with this.

### ***2.5.3 Further Research Limitations***

This collaborative action research project was a small scale time limited project which means that it was only able to capture the factors influencing changes made within one action research cycle. A more detailed analysis using a grounded theory approach to develop a theory of the factors which may influence changes over a longer period of time may be a possible next step in constructing a more detailed understanding of change in this context.

Within my research the construction of themes was also limited to my interpretation of the data. Within my empirical research write up I have recognised the implications of my own values and experiences in interpreting this data. From a constructivist position, it may have been helpful to engage in further dialogue with the members of staff involved in this project to further develop these themes. The use of their perceptions of being involved in this project may help construct an understanding that is better representative of those who were involved in the project.

## **2.6 Summary and Reflections**

The process of my research has been an interesting and thought-provoking one which has thrown up number of unexpected challenges which have supported my growth as both a researcher and a Trainee Educational Psychologist. This has been particularly in relation to responding to uncertain and continually changing social contexts and in reflecting on my insider outsider position both in my research and

professional practice. I am sure that this is something that will be a continuing theme into my ongoing professional journey and beyond.





## **Chapter 3. Factors Influencing Change – Teachers’ Application of a Theory of Basic Psychological Needs in a Secondary School**

### **3.1 Abstract**

The theory of Basic Psychological Needs from a Self Determination Theory perspective is a growing area of research, with an increasing focus on what this might mean for supporting pupils in schools. Within the current research literature, there is a significant focus on the application of blanket interventions to support Basic Psychological Need fulfilment to promote positive outcomes in schools. This research project seeks to move away from this towards a more contextually sensitive application of this theory within a Secondary School in the north-east of England.

The research focussed on creating change through a collaborative action research project in which teachers applied this theory of Basic Psychological Needs to create changes within their practice. Through this, a number of factors were identified as being possibly influential in supporting or limiting the changes made by these teachers including; challenge, dialogue, ecological factors and teachers’ Basic Psychological Need fulfilment. Following this, implications for Educational Psychologists are identified including consideration of how we can best support schools to apply psychology to promote positive outcomes for pupils.

### **3.2 Introduction**

The application of psychological theory and research to promote positive outcomes for children and young people (CYP) in schools is often recognised as a defining element of the role of Educational Psychologists (Cameron, 2006; Fallon, Woods, & Rooney, 2010; Kelly & Gray, 2000). However, Educational Psychologists rarely have frequent direct contact with CYP in schools. Therefore, in order to create positive change for CYP through the application of psychology we must work closely alongside those who will be actively engaging with these individuals in schools.

Self Determination Theory (SDT) has been highlighted as providing a possible framework for conceptualising how pupils can be supported in schools (Ryan & Deci, 2017; Wilding, 2015). A number of studies highlight the relationship between BPN and a number of positive outcomes including improved academic outcomes (Ratelle et al., 2007), persistence in school (Ratelle et al., 2007; Ratelle et al., 2005) and

feelings of self-efficacy (Diseth et al., 2012). The empirical research reported in this thesis seeks to move beyond this to consider how an Educational Psychologist can work with members of school staff in order to support them to apply a theory of Basic Psychological Needs (BPN) to create change within their practice.

In my introduction, I will first outline the theory of BPNs, as understood through SDT. I will then go on to explore some of the literature relating to creating change in schools before outlining my current research and its unique contribution.

### **3.2.1 BPNs and SDT**

SDT is a theory of motivation which posits that there are three BPNs which underpin human psychological growth and functioning; autonomy, competence and relatedness (Deci & Ryan, 1985, 2000, 2002; Ryan & Deci, 2017). Autonomy is considered the need for individuals to feel in control of their own behaviour.

Autonomy is not synonymous with independence as an individual can carry out actions requested by others and still remain autonomous, as long as they feel that those actions are congruent with their own beliefs and values (ibid). Competence is understood as an individual's need to feel effective in their interactions with their environment. Competence is not a state or capacity, but an individual's perceived confidence in their own abilities (ibid). Relatedness describes the need to feel connected to others, including both caring for and feeling cared for by others (ibid).

The BPNs outlined above provide the basis for categorising the environment as supportive or antagonistic to effective human functioning (Deci & Ryan, 2000). Environments which are supportive of the need for autonomy, competence and relatedness are suggested to have a positive impact on human wellbeing and functioning (Ryan and Deci, 2017). Conversely, if these needs are not met there may be a higher risk of pathologies (ibid).

When considering the literature relating to pupils in schools, the fulfilment of BPNs has been suggested to be related to a number of positive outcomes including emotional and behavioural school engagement (Jang et al., 2009; Park et al., 2012; Raufelder et al., 2014; Raufelder et al., 2016; Reeve & Lee, 2014; Saeki & Quirk, 2015; Van Ryzin, 2011; Zimmer-Gembeck, Chipuer, Hanisch, Creed, & McGregor, 2006) general and school related subjective wellbeing (Tian et al., 2014; Véronneau

et al., 2005), academic outcomes (Ratelle et al., 2007), persistence in school (Ratelle et al., 2007; Ratelle et al., 2005), self-efficacy (Diseth et al., 2012) and achievement goals (ibid).

Within my research, I hope to facilitate teachers' application of BPNs theory in their practice. I hope that through supporting staff to reflect upon how this theory might influence their practice, positive changes may be made to support the fulfilment of the BPNs of their pupil's. I will now go on to explore conceptualisations of teacher change.

### **3.2.2 Teacher Change**

Within the literature, teacher change has been conceptualised as a process of growth which happens through social interaction in a range of contexts (Kaasila & Lauriala, 2010). (Richardson & Placier, 2001) suggest that learning, development and socialisation are all important aspects of teacher change which should be considered alongside the more practical aspects of the implementation of something new which might involve cognitive and affective change.

Teacher change is often considered as something that occurs as a result of engagement in a professional development programme or during interactions with peers (Kennedy, 2014). Traditional models of professional development come from a transmission perspective whereby experts transmit knowledge to teachers in order for them to develop their practice (ibid). However, transmission models of professional development may fail to consider the unique contexts that teachers work within which may limit their impact on changing practice (ibid). It is argued that the complex contextual factors which may influence changes to practice have not received sufficient attention within the research literature (Borko, 2004; Opfer & Pedder, 2011). I have therefore chosen to focus my research on teacher change within a contextually sensitive teacher led process.

Within the current study teacher change has been conceptualised simply as the implementation of new practices as it would be difficult to evidence cognitive and affective changes due to the short timeframe of this research. It could be argued that this construction of teacher change is relatively simplistic or reductionist as it does not consider many of the elements outlined within the definitions provided by Kaasila and Lauriala (2010) and Richardson and Placier (2001). However, as this study is an

initial exploration into the area of how teachers might apply psychological theory within their practice I consider this definition to provide an appropriate stepping stone towards more complex conceptualisations of change in future research.

### **3.2.3 The Present Study**

On the basis of my systematic review, I argued that the theory of BPNs (Deci & Ryan, 1985, 2000, 2002) shows promise as a framework to support positive outcomes for CYP. Tian et al. (2014) argue that during adolescence, there is a growing need for autonomy, relatedness and competence, however the opportunities to fulfil these needs are often limited by their social environments. Considering the important role that schools play in the adolescent development (Cartland, Ruch-Ross, & Henry, 2003; Roeser, Eccles, & Sameroff, 2000), it is argued that consideration should be given to how schools can support BPN fulfilment (Tian et al., 2014). I hope to build on this suggestion in order to support the development of positive changes in teacher practice.

Within the literature, the application of SDT in schools is often carried out through set interventions such as the Self-Determined Learning Model of Instruction (Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000) or Steps to Self-Determination (Field & Hoffman, 2002). Both of these programmes are relatively prescriptive in their implementation which provides little consideration of the contextual factors which influence practice mentioned earlier. Within this study, I will work with teachers on a collaborative action research project to explore how they might use a theory of BPNs in their practice. This process will allow the teachers to guide the process in a way that responds to their individual needs and unique contexts. Through doing this I hope to develop an understanding of the factors which influence the changes they make as a result of engaging in this project. This will be explored through the following research question: What factors influence the ways in which teachers apply a theory of BPNs to create change within their practice?

### **3.3 Method**

#### **3.3.1 Context**

The research was carried out in a Secondary School in the North East of England. Participants were recruited through an initial presentation to teachers and support staff with a brief introduction to the theory of BPNs. At the start of the action research project 12 teachers were in attendance at the first session (3 male, 9 female). At the second session where the recordings were taken there were 10 teachers (1 male, 9 female). The teachers that were involved had a range of experience, from newly qualified teachers to teachers with over 15 years experience in schools. The staff also held a number of roles including subject teachers, Head of Year, Special Educational Needs and Disabilities Coordinator and Assistant Head Teacher.

#### **3.3.2 Design**

The project took the form of collaborative action research which seeks to actively involve teachers in a process of enquiry (Burbank & Kauchak, 2003). The researcher worked with the school to develop an understanding of how a theory of BPNs could be applied effectively in their setting. Kemmis, McTaggart, and Nixon (2014) describe how action research is based upon two fundamental principles; the recognition that all individuals have the capacity to contribute meaningfully to the research process and that research should work towards positive change guided by the participants. It is argued that the process of involving participants in the research in this way can be empowering (ibid).

The collaborative nature of this research project is reflected in the autonomy given to the teachers in relation to how they applied the theory of BPNs within their practice. This aligns with the principle of “non-hierarchical collaboration and partnership” promoted by Locke, Alcorn, and O’Neill (2013, p. 112). In doing this I positioned the teachers as having expertise relating to their context that was equal to my expertise relating to psychological theory. This is in contrast to the transmission model of professional development outlined earlier (Kennedy, 2014).

### **3.3.3 Ethical Considerations**

This research was subject to Newcastle University's ethical approval process and throughout my research the British Psychological Society Guidelines relating to ethical research were considered (British Psychological Society, 2009). Before participating in the research all participants were given written information sheets and (appendix 3) were given the opportunity to ask questions. I then obtained written consent (appendix 4). Due to the collaborative nature of the research process the focus of the research project changed over time and therefore the initial consent forms did not reflect the later focus of this project. Therefore, ongoing verbal consent was obtained throughout the project. Changes to the research project were also reflected within the debrief form provided to the teachers (see appendix 5).

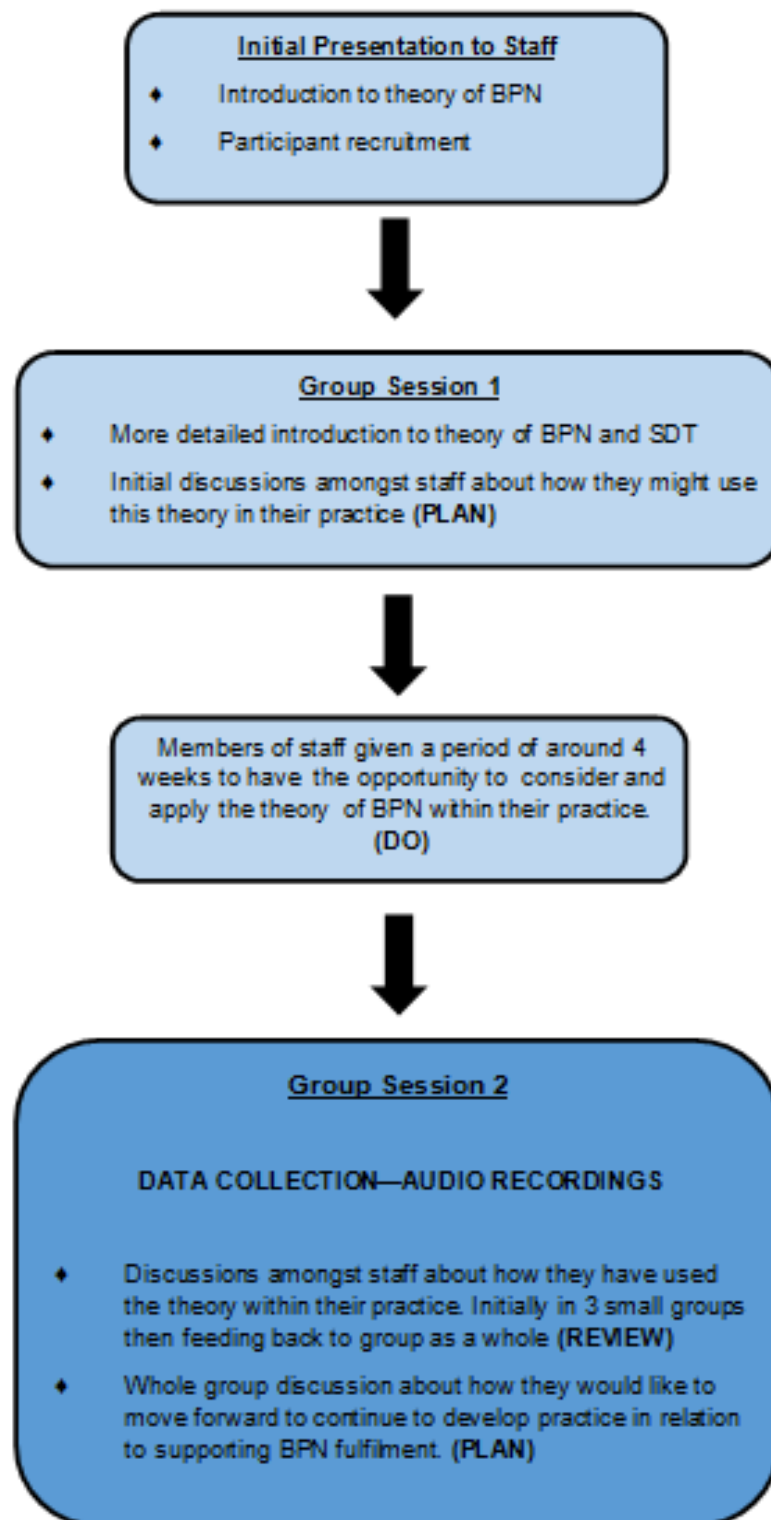
A further ethical dilemma emerged in relation to the recruitment of participants. Although it was made clear in my initial negotiation of the research project that participation in the research was voluntary, I am aware that some teachers may have been encouraged to participate by members of senior management within the school. During my conversations with the teachers I therefore reinforced the message that participating in the research was voluntary and they could withdraw at any time.

Principles of confidentiality were also adhered to with all identifying information removed from transcripts and audio recordings and transcripts stored securely and destroyed in line with university guidelines.

### **3.3.4 Research Process and Data Collection**

Figure 2 provides a graphical representation of the research process. This is followed by a more detailed description of each stage of the process.

Figure 2 - The research process.



The research process consisted of four stages. The first stage involved an initial introduction to my research project during a staff training event. This included a brief introduction to the theory of BPNs (appendix 6) and an opportunity to register interest in taking part in my research. Three months later, the first group session provided a more detailed introduction to the theoretical principles of SDT and BPN fulfilment. The teachers were provided with an information sheet about the theory and a further prompt sheet which outlined how these needs may be fulfilled within school (appendix 7). The teachers then separated into two groups to discuss how they might use this theory to support their professional practice. They were then given a period of four weeks to trial applying the theory within their work.

The teachers then attended a second one hour session. They initially separated into three groups to share how they had used the framework within their practice. This was followed by a whole group discussion whereby key areas of success and challenge were discussed. The teachers then identified a specific area of focus and worked together to create an action plan. During this session audio recordings were taken of all conversations.

### ***3.3.5 Data Analysis***

Audio recordings were transcribed verbatim by a transcription service and subjected to a thematic analysis (Braun & Clarke, 2013). I chose to carry out an inductive analysis whereby codes and themes are constructed from the data and not led by theory in order to try and encapsulate the richness of the data in a context sensitive manner (Braun & Clarke, 2013; Miles & Huberman, 1994). Adopting a constructionist ontology (Grix, 2010), I take the view that no analysis can be completely free of influence from prior knowledge, however in order to try and remain open minded in relation to my analysis of the data I limited my reading in the area of teacher change until my data analysis was complete.

I also maintained a level of reflexivity in my analysis to support me to recognise instances where I may have been trying to fit my data to pre-existing ideas and assumptions. This meant ensuring that all codes that were relevant to my research question were reflected in my themes and adjusting these accordingly. I also



engaged in a peer review of my themes to refine them and ensure that they were coherent in relation to the data I had constructed them from.

My thematic analysis followed the process outlined by Braun and Clarke (2013). A description of each of the phases of this analysis and the actions taken at each point can be found in table 14.

*Table 14 - The phases of thematic analysis (Braun and Clarke, 2013)*

Phase	Description
Phase 1 – Familiarisation with the data	The researcher immerses themselves in the data in order to become intimately familiar with it. This includes a process of listening to audio recordings alongside reading and re-reading the transcripts. At this stage, initial ideas are noted.
Phase 2 - Coding	Important features of the data, relevant to the research question are given codes. These codes include data derived (semantic) codes which relate to the specific content of the data and researcher derived (latent) codes which rely on the researcher's interpretation of the implicit meanings within the data. The data relevant to each code is then collated.
Phase 3 – Searching for themes	Codes are collated to create potential themes, which are considered to reflect a coherent pattern within the data relevant to the research question. The themes are constructed by the researcher as their interpretation of the data. The coded data relevant to each theme is collated.
Phase 4 – Reviewing themes	The themes are reviewed in relation to whether they accurately reflect what can be found within the data. Through this process the themes are refined, collapsed or discarded which may mean beginning the process of theme development again.
Phase 5 – Defining and naming themes	Ongoing analysis and refining of the themes leads to the development of a definition of the story that is told by each theme. The researcher then constructs a concise and informative name for each theme.
Phase 6 – Writing up	The final stage and an integral part of the data analysis involves creating a coherent analytic narrative about the data

	which is contextualised in relation to existing literature. During this process data extract examples are referred to in order to develop a persuasive interpretation which answers the research question.
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### **3.4 Findings**

As a result of the data analysis process described above, six themes were identified, with one theme containing two sub-themes. A visual representation of this can be found in figure 3. I will now go on to provide a description of each of the themes, linking these back to specific examples from the transcripts.

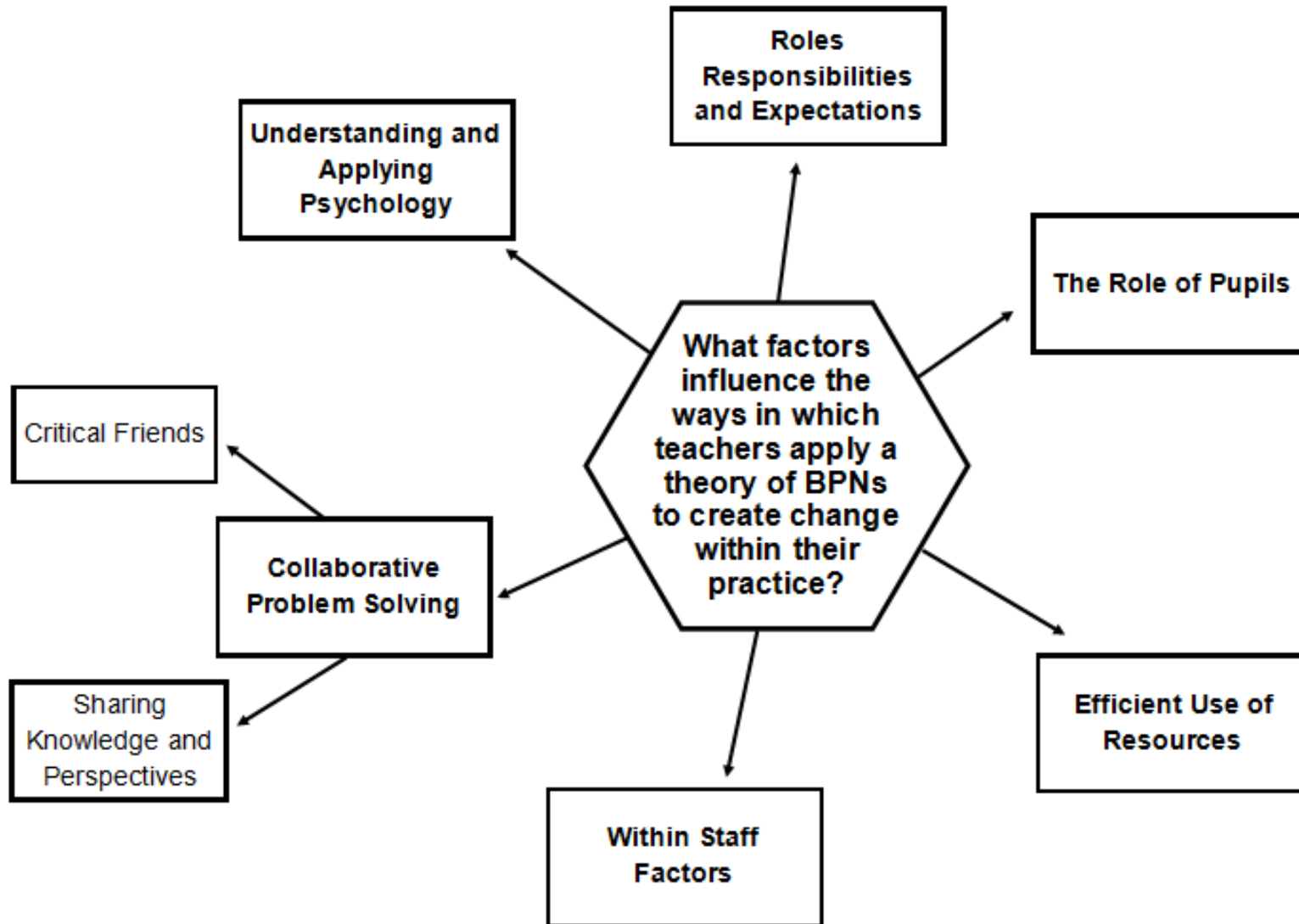
#### ***3.4.1 Theme 1 - Understanding and Applying Psychology***

This theme encompasses the way that teachers used the psychology and the framework that they were provided with. This includes identifying strengths and areas for development and recognising environmental influences on pupil behaviour which influenced the changes made by the teachers. This is encapsulated in the quotes taken from the transcripts below. Pseudonyms have been used throughout to maintain anonymity.

*Emily (teacher)*

“...in the past, I would’ve just presented them all with aprons and said ‘right, you all have to do that.’ But now I’m thinking right, if they hate drawing, that’s gonna put them off the task and they’re not gonna learn about where the organs are. So, I can maybe think about some interactive programmes with the organs.”

Figure 3 - Thematic map



*Susan (Head of Year)*

“...when using the framework, we’ve looked at autonomy and found that...these things were done in lessons but also in tutor time and things like Student Council and other groups.”

The application of psychology may have also been a barrier to effective change. Some difficulties with teacher’s application of psychology were identified relating to misunderstanding the terminology used within the theory. The language used within SDT bears similarities to concepts that are used within education, however their definitions differ. Within SDT competence is not a skill but a feeling confidence in being effective in your environment (Ryan & Deci, 2017). However, competence is spoken about within education in relation to whether or not a pupil is competent in a particular skill and is often used in reference to performance in comparison to others. This definition was reflected in the conversations within the group discussions. This confusion in relation to the key concepts of this theory may have impacted on its usefulness within this context.

*Ashley (teacher)*

“...although part of it is his competence of saying ‘have I got this right?’ ‘Yes, you’ve got that right.’ ‘Oh great. I’ll move on’ ...”

### **3.4.2 Theme 2 - Collaborative problem solving**

This theme considers the ways in which dialogue between teachers facilitated change. It contains two subthemes; critical friends and sharing knowledge and perspectives.

## 2a. Critical Friends

The space and time given to dialogue between teachers seemed to be one of the key influencing factors in creating change. This was enhanced by the positive relationships between those involved in the group which allowed them to be open about areas of difficulty and respectfully challenge one another. The findings also suggest that teachers sought reassurance from one another and frequently offered positive feedback relating to the efforts made by other members of staff. Conversations between teachers offered opportunities for joint problem solving including shared reflection on practice prompted by the psychological framework provided.

*Dialogue between Ashley (teacher) Emily (teacher), Beth (teacher) and Karen (Assistant Head Teacher).*

Ashley – "...it's probably causing me more problems that it's solving in that he's asking me for more help because he's asking to make sure that every single question is right..."

Emily – "Have you tried giving him like, little cards with your name on it...and saying 'right you have four cards. This lesson you can only ask me to come over four times.'"

Beth – "That might restrict him though."

Ashley – "Yeah. So, maybe the constant reassurance is something that I need to persevere with for the short term, so that in the long term he'll be really happy [working independently] ..."

Karen – "You could do, like, a confidence traffic light with him. So, each time he's confident with one he gives it either red, amber or green...That at the end of the lesson he says 'right, this lesson I've had fifteen greens, ten ambers and five reds.'...And the next lesson, you do it again and he's got more greens, more ambers and less reds."

Ashley – "That's a good idea actually."

## 2b. Sharing Knowledge and Perspectives

The dialogue between teachers also facilitated change through the sharing of perspectives. Conversations between pastoral and teaching staff led to information

sharing relating to the contexts that may influence a pupil's behaviour outside of the classroom which may have influenced the changes that teachers made.

*Karen (Assistant Head Teacher) and Emily (teacher) discussing possible ways of supporting a “coasting” pupil. In this conversation Emily’s understanding of a pupil as someone who “isn’t doing enough work” seems to have been altered.*

Karen - “You could also look at the connection between the extra pastoral support required by [pupil a] ...And whether that impacts on why she coasts. Because she has so many other external issues.”

Emily – “It’s easier for her to switch off.

### **3.4.3 Theme 3 - The Role of Pupils**

Within my analysis of the transcripts pupils were constructed as influential in the changes made by staff in relation to acknowledging pupil perspectives and pupil characteristics. Teachers often referred to things that pupils had told them directly or their perception of what pupils might be thinking or feeling when considering what areas may need further development in their practice.

*Beth (Teacher)*

“I was gonna buy some aprons and get them to put them on and draw- like paint on where the organs are...But maybe I should think about some might hate painting and drawing and they might prefer to write about the organs.”

Pupil characteristics influenced change in relation to how trustworthy and mature pupils were perceived to be.

*Ashley (teacher) discussing how he might make his new approach to supporting a pupil explicit to them*

“...he’s quite mature. So I could probably have that conversation with him.”

#### **3.4.4 Theme 4 - Roles, Responsibilities and Expectations**

Roles and expectations were constructed as barriers to change within this research. Within the data there were several references to the things that teachers “must do” and how they limit the changes that could be made. One teacher recognised the conflict of wanting to do the “right thing” by offering support to pupils that may fulfil their BPNs but suggested that pressures and expectations from management may stop her from doing this.

*Beth (teacher)*

“[Prioritising pupil needs over recording in books] is the right thing. But you worry someone’s gonna come in and book scrutinise or whatever and say there’s not much work in the book.”

#### **3.4.5 Theme 5 - Within Teacher Factors**

Although opportunities and support offered by the environment around the teachers was important, within individual factors were also constructed as influential. Characteristics such as having the desire to change were highlighted as a possible barrier to change.

*Conversation between Ashley (teacher) and Beth (teacher) about implementing a new mentoring system in school*

Beth – “...one of the difficulties we have is that you’re very open to that. And that’s great. I think, well, there would be quite a lot of members of staff that if we went to as a mediator...They’d just say ‘well yeah. Because they did this’...They’re not going to listen and change their...”

Ashley – “...practice”

Confidence and self-belief may also be important in relation to teachers defending their practice and in their perception of whether they have the skills needed to implement the change.

*Ashley (teacher) talking about his confidence in being able to put expectations that students will write in their books to the side.*

“I’ve got some lessons where literally they’ve written very little but I know actually that was a really successful lesson because in the end they got there.”

Perceived barriers to change were also constructed as leading to feelings of helplessness amongst the teachers.

*Jane (SENCo)*

“...as teachers, we’re not always in control...We have certain things that, like, we have to stick to... We can’t change things that we’re controlled by...”

### **3.4.6 Theme 6 - Efficient Use of Resources**

The efficient use of resources was highlighted several times as a possible barrier to change with teachers discussing how due to frequent new initiatives they only have time to focus on those that seem worthwhile. This links to the need to evidence the impact of their changes with the suggestion of a small-scale trial to first develop their mentoring idea to provide evidence to encourage buy in from others.

*Emily (teacher), Jane (SENCo) and Susan (Head of Year) discussing how best to implement a new mentoring programme within school.*

Emily – “Could we not do a whole school thing?”

Jane – “If we had time.”

Susan – “The only issue is people, bodies, being able to spare people to do it...”



### **3.5 Discussion**

In order to answer my research question “What factors influence the ways in which teachers apply a theory of BPNs to create change within their practice?” I will now discuss the findings in relation to four areas of literature; challenge as stimulus for change, the importance of dialogue, ecosystemic factors and the influence of BPNs. These areas were chosen as I felt that they helped to bring together and create links between the themes constructed from my data. The area relating to challenge as a stimulus for change links with the themes of ‘understanding and applying psychology’ and ‘collaborative problem solving’ outlined in my results. The importance of dialogue then overlaps with this in considering how dialogue may provide challenge and aid ‘collaborative problem solving’. Ecosystemic factors then consider how dialogue may influence change from a microsystem level whilst also considering how the themes of ‘roles, responsibilities and expectations’, ‘efficient use of resources’ and ‘the role of pupils’ is implicated at the exosystem and macrosystem level. Finally, the discussion relating to influence of BPNs explores how need fulfilment may be implicated in my themes relating to ‘roles responsibilities and expectations’, ‘understanding and application of psychology’, ‘collaborative problem solving’, ‘role of pupils’ and ‘within teacher factors’.

I am aware that this is my interpretation and that there may be alternative ways to interpret these themes. I am also conscious of the ways in which my ontology which underpins my practice as an Educational Psychologist may shape the theories I am drawn to and the understandings which I may create (Handoyo, 2016; Parker, 2013).

#### ***3.5.1 Challenge as a stimulus for change***

Lewin (1947) argues that the starting point of change involves ‘unfreezing’ which he describes as the creation of motivation to change. Schein (2016) suggests that this happens when an individual is presented with information that creates a disequilibrium between what they are doing and their central goals. Gillies (2012) argues that, within an educational context, in order for change to occur, there must be a stimulus that challenges current practices. Within this research the stimulus for change was an important aspect of two of the themes; ‘understanding and applying psychology’ and ‘collaborative problem solving’.

The theme relating to 'understanding and applying psychology' outlines the way in which the introduction of the theory of BPNs prompted reflection and provided a starting point for identifying areas which needed further development. The teachers had previously been provided with information that suggested that the fulfilment of BPNs may promote positive outcomes for pupils. It could therefore be suggested that identifying practices which they may be engaged in that do not fulfil the needs of their pupils may cause feelings of dissonance. Within this theory, one way of reducing this dissonance would be to change their working practices (Festinger, 1962).

The theme relating to 'collaborative problem solving' with the subtheme 'critical friendship' contains elements of challenge in the promotion of change. Within the literature, critical friendship has been described as a positive and supportive professional relationship that allows for challenging questioning and critique (Costa & Kallick, 1993; Schuck & Russell, 2005). This echoes aspects of this subtheme, which recognise the role of questioning and challenge from colleagues in influencing changes in practice. Within the literature relating to change, Schein (2016) recognises the importance of a sense of psychological safety for individuals to be able to recognise the need for change without feeling threatened and becoming defensive. Positive relationships may provide this sense of safety which allowed them teachers to engage in challenge.

I will now go on to consider the role of dialogue in the change process.

### **3.5.2 Dialogue**

Penlington (2008) argues that dialogue is vital to an individual's contemplation of possible perspectives which in turn influences the decisions they make about the actions they might take. This process is called practical reasoning (ibid). Practical reasoning can be both a relatively unconscious process or a more deliberate process promoted through individual reflection which is enhanced through dialogue with others or internally.

It has been suggested that dialogue allows us to engage with a position of otherness which helps us to see things from alternative perspectives (Penlington, 2008; Wegerif, 2011). However, although internal dialogue offers some position of otherness, it is suggested that this is limited as we are only able to engage with

perspectives which have been offered to us through previous social interaction (Penlington, 2008). Penlington therefore argues that dialogue between two or more people is a vital aspect of creating otherness and therefore dissonance that creates the incentive for change to occur.

Dialogue as an influential factor in change was reflected in the theme 'collaborative problem solving'. Within this, otherness may have created change through the teachers sharing their perspectives in response to the issues raised. This sharing of information shaped the way in which the teachers constructed the pupils they discussed which may have influenced the changes they made to their practice to support that pupil. The influence of promoting dialogue between teachers is also considered within the next section relating to ecological influences.

### ***3.5.3 Ecological Systems Perspective***

Bronfenbrenner's (1994) ecological model of human development describes a multi-layered series of 'nested structures' which interact with one another to influence human development. The first level is the micro system which includes the environments and people who have a direct influence on the individual (e.g. home, school, peer group). The next level is the mesosystem which encompasses the relationships between these people and environments (e.g. relationships between home and school). The exosystem then describes the environments which may influence the individual despite them not being present (e.g. the parents place of work). Finally, the macrosystem is concerned with the cultures in which the environments are located (e.g. the political context). Each of these layers interact and influence one another.

Within the themes constructed within my research, a number of factors were identified that could be suggested to influence the changes made by the teachers at each of these levels. This was particularly prevalent in the theme relating to 'roles, responsibilities and expectations'. Within this theme, teachers identified that there were pressures and expectations from other people (such as senior management) which limited what they felt able to do within their classrooms. This also influenced the need to use resources efficiently. Additionally, there were links to the theme relating to the 'role of pupils', as teacher expectations of their pupils and

consideration of their perspectives often influenced the changes that they chose to make.

The possible influence of dialogue within this research could be viewed from this perspective as an example of microsystem level influences. It might also be suggested that decisions made by senior management relating school policies and resources such as staffing were influential from an exosystem level. Although the political and cultural context was not explicitly noted within my research it is likely that many of the decisions made by senior management at the exosystem level were influenced by wider political policies and agendas such as improving academic attainment.

#### ***3.5.4 Basic Psychological Needs***

Within my themes something else which could be considered significant is the influence of BPN fulfilment. I acknowledge that this theory has been prominent throughout this research and this may have influenced my constructions of each of the themes, however I feel that this theory may provide a framework to create a more detailed understanding of the themes constructed from my data. It does not seem illogical to contend that if BPN Fulfilment is suggested to impact on pupil engagement in school (Jang et al., 2009; Park et al., 2012; Raufelder et al., 2014; Raufelder et al., 2016; Reeve & Lee, 2014; Saeki & Quirk, 2015; Van Ryzin, 2011) then it may also be an influential factor in teachers engaging in change processes.

When considering how autonomy may play a role within the change process in this research the theme relating to 'roles responsibilities and expectations' may be particularly relevant. Teachers spoke about how the curriculum imposed by the government and expectations from senior management limited the kinds of changes that they felt able to implement. Conversely the element of self-reflection outlined within the theme relating to the 'understanding and application' of psychology could be argued to be an example of how autonomy need fulfilment may promote engagement with change. Through a self-reflection process, teachers were able to identify and acknowledge their own areas for development, which seemed to lead to the development of changes in their practice. This aligns with suggestions within the literature that change is promoted in situations which provide opportunities for learning that are relevant to the individual (Kennedy, 2014).

When considering the theme relating to 'collaborative problem solving', there also appears to be a role of relatedness need fulfilment in promoting change in this context. When considering the discussion relating to the role 'critical friendship' within the research, positive and supportive relationships were highlighted as an important aspect of providing effective professional challenge (Costa and Kallick, 1993; Schuck and Russel 2005). It could be argued that these positive relationships also provide fulfilment of the need for relatedness as outlined within SDT which may promote teachers' engagement in creating changes within their practice.

It could also be argued that the positive interactions resulting from these supportive relationships may also promote feelings of competence within the context of this research. Teachers often provided positive feedback to one another in response to sharing examples of their teaching practice. The idea of developing feelings of competence was also reflected in the theme of 'within teacher factors' which highlights the possible role of feelings of confidence and self-belief.

### **3.6 Implications for Practice**

As mentioned earlier, this research was designed to respond to the unique context of the teachers working within this school the findings are therefore my construction of the nature of change within this project specifically. However, the links between these findings and the theories drawn upon within my discussion may provide a tentative basis for considering how these findings may impact upon the work of Educational Psychologists more widely.

Within my introduction to this piece of research I mentioned the importance placed on the application of psychological theory within the practice of Educational Psychologists. Within this discussion I highlighted the need to engage staff within schools in applying this theory in their practice as they are the ones working directly with pupils. I presented the theory of BPN's to staff as a possible explanation for pupil behaviour that moved away from a within-pupil focus towards a consideration of environmental factors. It was acknowledged that this theory is not comprehensive in explaining all difficulties that students and teachers may encounter however it seems that this was effective in supporting staff to consider this alternative perspective. This suggests that providing staff with psychological theory to create guiding frameworks

to support thinking may be a helpful way of supporting schools to take an alternative stance on challenging situations.

However, some caution is warranted in relation to how Educational Psychologists might do this. When considering the findings relating to understanding and applying psychological theory it was highlighted that the language used within SDT had led to some confusion about how the terms might be defined. Although this finding is specific to this context, it highlights the importance of making psychological theory clear and accessible. This has implications for Educational Psychologists working at all levels including when communicating formulations as a result of casework or when delivering training to groups of staff. If the theory that we promote and communicate in our interactions with staff is not clear then there are implications for how they might apply this theory in their practice which may impact on the intended outcome.

Furthermore, dialogue in the form of 'critical friendship' was constructed as an important factor for promoting change within this project. This was identified as being important for both creating space for challenge and through promoting change through dialogue. The development of peer group supervision or problem-solving groups has been suggested as a possible way to create space for these kinds of relationships (Brown & Henderson, 2012; Greenfield, 2016). This has implications for the ways in which schools support their staff and the role that Educational Psychologists may take in promoting the importance of this and supporting its implementation.

Finally, this research was based on the assumption that BPN fulfilment has a positive impact on a range of outcomes for CYP. However, the findings of this research may also suggest that BPN fulfilment may play a role in staff engagement in creating change within their practice. Teacher's need fulfilment and its relationship to variables such as work-related engagement (Klassen, Perry, & Frenzel, 2012) and work-related learning goal orientation (Janke, Nitsche, & Dickhäuser, 2015) has been considered in the literature. However there appears to be little consideration of the implications this may have for Educational Psychology practice. Using BPN fulfilment as a framework to consider the factors that may impact upon teacher engagement in making changes in their practice may be a helpful structure for Educational Psychologists to consider when working with staff to improve outcomes for CYP. More widely this structure may be helpful for considering how school and political

policies which promote changes in practice may be most effectively implemented. This is something that could be considered as an area for future research.

### **3.7 Conclusions**

This research project set out to explore the factors that may influence teacher change through the application of a theory of BPN's within their practice. This was highlighted as an important area for consideration within the context of limited teacher led, contextually relevant research into the application of this theory in educational settings. Explored from a constructivist stance, a number of themes were constructed from the data which highlighted the possible role of a number of factors including implications arising from the application of psychological theory and the influence of political agendas.

Links were then made to some of the literature relating to change which led to the suggestion that within this research project change was initially simulated by challenge which was promoted by engagement in internal and external dialogues (Penlington, 2008). These dialogues may have been influenced by a number of interrelated ecological systems which impacted upon the changes made by the teachers. BPN fulfilment was also suggested as important in supporting staff to engage effectively in creating changes in their practice.

Through this a number of implications for practice for Educational Psychologists have been identified including careful consideration of the communication and application of psychological theories within school contexts and supporting the development of spaces for collaborative problem solving. It has also been suggested that BPN fulfilment could be a helpful framework when considering how to implement other changes at a school wide or national level.

This initial exploration of the application of the theory of BPN as outlined by SDT (Deci & Ryan, 1985, 2000, 2002; Ryan & Deci, 2017) has developed some thought-provoking insights into its usefulness as framework for promoting positive outcomes for CYP. Consideration of the application of this theory in a contextually sensitive manner across further educational settings may be helpful in developing a better understanding of its usefulness for schools.





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## Appendices

**Appendix 1 – Cohen’s (1988) effect size benchmarks (table adapted from Ellis, 2010)**

Test	Relevant Effect Size Statistic	Effect Size Benchmark		
		Small	Medium	Large
Comparison of two independent means	$d$ , Hedges’ $g$	0.20	0.50	0.80
Comparison of two correlations	$Q$	0.10	0.30	0.50
Correlation	$r$	0.10	0.30	0.50
	$r^2$	0.01	0.09	0.25
Multiple regression	$R^2$	0.02	0.13	0.26
	$f^2$	0.02	0.15	0.35
ANOVA	$f$	0.10	0.25	0.40
	$\eta^2$	0.01	0.06	0.14

## Appendix 2 – Detailed Weight of Evidence Judgements

Study	Ethical concerns (1)	Appropriate involvement of p's (2)	Sufficient justification for why study was done (3)	Choice of research design appropriate (4)	Reliability of data collection tools (5)	Validity of data collection tools (6)	Reliability of data analysis (7)	Validity of data analysis (8)	Able to rule out other sources of error/bias which may explain findings (9)	Generalisability of results (10)	Does my view differ from the authors views in terms of the findings (11)	Sufficient attempts to justify the conclusions drawn (12)
Raufelder et al. (2014)	Vague details relating to consent – “asked for parental permission” but no details of information given, students informed their participation was voluntary but no explicit formal consent from students mentioned.	Focus on pupils in data collection but design of study researcher led.	Yes  Want to examine the relationship between perceived stress and school engagement (SE) and whether this is mediated by Self Determination (SD) (measured as autonomy competence and relatedness) from students’ perspective.	Partly  Quantitative analysis most appropriate for examining relationships between variables. However, they suggest they want to understand students’ perceptions of stress SD and SE which may be more suited to a qualitative design.	Used previously tested data collection tools.  Cronbach’s alpha provided.	Some concerns  No explicit mention of measures taken to ensure validity but used previously tested questionnaire  Some example questions given – concerned that questions relating to BPN’s may not reflect the definition of the constructs from the original theory. (e.g. autonomy = working independently, relatedness = friendly and relaxed atmosphere)  Questions translated to German from some questionnaire.	Lots of detail provided in relation to the steps taken throughout the data analysis.	Linked research question and hypotheses to specific data analyses	Partly  Using bootstrapping to reduce some biases but did not control for variables	Large sample but limited to a small area in Germany.  First exploration considering the mediating influence of BPN satisfaction in the relationship between stress and school engagement  NB two Raufelder papers from same sample of students..	Findings seem feasible however still concerns about the definition of each element of SD and how this sits with the original theory.	Yes and suitably tentative with limitations recognised in relation to correlational analysis.

						How did they ensure that they were translated appropriately?						
Park et al. (2012)	<p>Students requested to take part after an initial presentation .</p> <p>Screening of students – targeted only students from low SES families (a sensitive subject for some people). Did not allow “biracial” students or students with identified SEN to take part.</p> <p>Students given money to take part.</p>	<p>No mention of parental involvement.</p> <p>Researcher led design which students were asked to take part in.</p>	<p>Yes</p> <p>Research questions clearly linked to gaps in literature.</p>	<p>Yes</p> <p>Measures taken to explore engagement, BPN satisfaction with info collected relating to gender, ethnicity, SES and academic achievement.</p>	<p>Cronbach’s alphas reliability measure given for engagement measure.</p> <p>Split half test retest reliability correlation measure given for BPN measures</p> <p>Items for emotional engagement and BPN measures given.</p>	<p>Reports high levels of ecological, internal and situational validity as found in previous research for the experience sampling method.</p> <p>Validity of BPN measures poor due to being based on one question for each need which was derived from assumptions about what each need represented but did encapsulate the complexity of each of these.</p>	<p>Lots of detail given in relation to data analysis.</p>	<p>Discuss the use of hierarchical linear modelling in order to account for possible biases within their nested data.</p>	<p>Discuss the use of hierarchical linear modelling in order to account for possible biases within their nested data.</p> <p>Race, gender and school achievement differences were explored but not controlled for.</p>	<p>Small sample size and specific context.</p> <p>Some results repeat what has been found previously providing some warrant for further generalisability.</p> <p>Some new and unique findings may need to be considered with more caution. No explanation seems to be given as to why they may have occurred.</p>	<p>Findings and conclusions seem feasible and are well linked to previous theory and research in some places.</p> <p>Other findings not explained or explored. – e.g. No relationship at the between student level (e.g. once scores were averaged across the week) for competence or relatedness–no explanation of this given. Don’t feel that I could explain this either.</p>	<p>Findings and conclusions seem logical and links are made to previous theory and research. Other findings not explained or explored. – e.g. No relationship at the between student level (e.g. once scores were averaged across the week) for competence or relatedness – no explanation of this given.</p>
Saeki and Quirk (2015)	<p>No information relating to consent or withdrawal procedures. Working</p>	<p>No information relating to whether parents were</p>	<p>Yes</p> <p>Wanted to explore a process model of how BPN</p>	<p>Yes</p> <p>Measures of BPN satisfaction, SE and social and</p>	<p>Cronbach’s alpha given for all measures, split half reliability estimates and test retest</p>	<p>Used previously used and tested measures from previous research however it is not clear what the</p>	<p>Some simple details of analysis but lacks the quality found</p>	<p>Screened for missing data and bootstrapping applied due to relatively</p>	<p>Did not control for other variables.</p>	<p>Small sample size from one city in California.</p> <p>First paper to consider a</p>	<p>Argued that BPN fulfilment is more closely related to SEBF due to them both</p>	<p>Conclusions drawn seem to be speculative rather than grounded</p>



	with children and no information as to whether parents were informed.	informed or contacted.  Researcher led design with data collection based upon pupil responses.	satisfaction, engagement and social emotional functioning are interrelated.	emotional functioning were taken.	reliability measures given for social-emotional and behavioural functioning measures.  Also only selected a number of items from some questionnaire and it is not made clear which ones were used.	difference is between measure of affective and behavioural engagement and social-emotional and behavioural functioning measures. There is no consideration given to defining this or considering the possible overlap or similarities.  Some consideration given to analysis to warrant the use of combined scores.	within other papers.	small sample.		process model of how BPN satisfaction, engagement and social emotional functioning are interrelated.  Findings differ from those that have considered a process model of SE BPN fulfilment and academic outcomes.	being internal processes.  I feel that a more likely explanation is that they are more closely related as the constructs measured by these two questionnaires are similar.	in theory or research.
Reeve and Lee (2014)	No mention of how informed the consent was just mentions that students consented but some evidence of students choosing not to continue.	Researcher led design that involved the collection of pupil responses.	Yes  Links made to testing out a proposed model which suggests a reciprocal link between need satisfaction and school engagement based upon initial findings from previous research.	Yes  Measurements of constructs taken at different time points to provide a longitudinal study of possible reciprocal changes over time.	Used previously tested data collection tools. Cronbach's alpha provided.	Conducted an exploratory factor analysis to warrant use of a composite need satisfaction score.  Example questions provided which seem to relate relatively closely to constructs which are to be measured.	Good level of detail in description of data analysis	Consideration given to alternative data analysis strategies and warrant given for choices made.	Controlled for gender, grade and between class and between subject matter differences within main analysis.	Moderately large sample of over 300 students but limited to a small area of South Korea.  First exploration of the reciprocal relationship between BPN fulfilment and SE over time. Some previous evidence that this was the case for autonomy fulfilment.	Findings and conclusion seem feasible but may need to be considered with a level of caution until further studies replicate similar findings.  Also data analysis is correlational and the limitations of this do not seem to be	Few links made to current literature when reporting findings and conclusions but model built upon findings from previous research outlined in the introduction.  Arguments seem

											recognised by the researchers	logical but may need further evidence to support them.
Van Ryzin (2011)	No information given relating to consent or the information given to pupils or their parents prior to involvement. Some mention of missing data due to some students being unwilling to participate	Researcher led design. No mention of parental involvement. Pupils as sole participants in data collection.	Good justification for the development of the study provided through exploring the reasons why an integrated theory of hope and self-determination may be beneficial.	Quantitative data collected through questionnaires relating to perceptions of autonomy, perceptions of teacher and peer support, perceptions of mastery and performance goal orientations, engagement in learning and hope. Measure of academic achievement through an online test.	Used questionnaires from previous research papers, however only use selected items from them and did not list these or make it clear which items were used.  Cronbach's alpha's provided.	Did not explicitly discuss validity.  Some example questions given. These seem to represent questions that are relevant to the constructs they purport to measure.  Questionnaires taken from previous research.  Academic achievement measured through a Measures of Academic Progress tool which is "aligned to state standards".	Good level of detail relating to data analysis.  Data analysis seems appropriate to research question.	Explored possible influences of missing data.	Explored school level and gender influences on the fit of the model.	Moderate size sample of 423 students from small schools in the upper Midwest.  Mainly European-American students.  Results replicate findings from other studies	The findings and conclusions seem logical and are discussed in relation to previous literature with a detailed discussion of what this might mean.	There are good links made between the conclusions drawn and findings from previous literature.
Jang et al. (2009) STUDY 2	"Participation was voluntary and scores were confidential and anonymous"  Little detail other than this.	Researcher led design.  No mention of parental involvement, even in relation to consent.	Yes.  Built upon previous research and identified gaps within the literature relating to the cross-cultural validity of	Staged process of four studies which build on findings from each other.	Cronbach's alpha given for some measures but not consistently across all measures.  Mention of reliability for some measures	Validity considered for some measures in relation to findings from previous research.  Translations from English to Korean. In some circumstance, they were	Good detail relating to data analyses. Easy to follow and replicable.	Consideration of keeping within acceptable parameters.  Give explanation as to why certain data analyses	Tested for additional effects that cultural collectivism, cultural expectations and parental expectations might have on variables.	Study based within one middle class school in Seoul in Korea.  Relatively small sample.  However, study replicates	Findings and conclusions seem feasible in relation to links made to previous research and theory.	Conclusions justified in relation to previous research and theory.

		Students central to data collection.	SDT and BPN.  Staged process of four studies which build on findings from each other.		taken from previous research.  Suggested that some measurement scales were adapted and translated. Some details given of this but not completely transparent.	translated back to English by two translators and discrepancies were worked out between them.		were chosen.		findings from previous research.		
Jang et al. (2009) STUDY 3	Survey was completed “voluntarily and anonymously”  Little detail other than this.	Researcher led design.  No mention of parental involvement, even in relation to consent.  Students central to data collection.	Yes.  Built upon previous research and identified gaps within the literature relating to the cross-cultural validity of SDT and BPN.  Staged process of four studies which build on findings from each other.	Staged process of four studies which build on findings from each other.	Cronbach’s alpha given for some measures but not consistently across all measures.  Mention of reliability for some measures taken from previous research.  New measure of cultural expectations for high achievement created. Cronbach’s alpha given.	Validity considered for some measures in relation to findings from previous research.  New measure of cultural expectations had not been used previously and no piloting or testing of this prior to the study is mentioned.	Good detail relating to data analyses. Easy to follow and replicable.	Consideration of keeping within acceptable parameters.  Give explanation as to why certain data analyses were chosen.	Tested for additional effects that cultural collectivism, cultural expectations and parental expectations might have on variables.	Study based within one middle class school in Seoul in Korea.  Relatively small sample.  Study replicated findings from Study 2.	Findings and conclusions seem feasible in relation to links made to previous research and theory.	Conclusions justified in relation to previous research and theory.
Jang et al. (2009) STUDY 4	No mention of consent procedures other than stating that the questionnaire was	Researcher led design.  No mention of parental involvement	Yes.  Built upon previous research and identified gaps within	Staged process of four studies which build on findings from each other.	Cronbach’s alpha given for some measures but not consistently across all measures.	Validity considered for some measures in relation to findings from previous research.	Good detail relating to data analyses. Easy to follow and replicable.	Give explanation as to why certain data analyses were chosen.	Tested for additional effects that cultural collectivism, cultural expectations and	Study based within one middle class school in Seoul in Korea.	Findings and conclusions seem feasible in relation to links made to previous	Conclusions justified in relation to previous research and theory.

	completed voluntarily.	t, even in relation to consent.  Students central to data collection.	the literature relating to the cross-cultural validity of SDT and BPN.  Staged process of four studies which build on findings from each other.		Mention of reliability for some measures taken from previous research.  Suggested that some measurement scales were adapted and translated. Some details given of this but not completely transparent.  New Measure of academic achievement measured using school grade and "100- point scale" but no indication of what this entails.	Translations from English to Korean. In some circumstance, they were translated back to English by two translators and discrepancies were worked out between them.  Validity of "100-point scale" difficult to ascertain as no detail is given.			parental expectations might have on variables.	Relatively small sample.  Study replicates findings from previous research including study 2 and 3.	research and theory.	
Zimmer - Gembeck et al (2006)	Parental consent but no student consent made explicit.  Sealed envelopes to ensure confidentiality and anonymity.	Researcher led design.  Parental consent sought.  Students central to data collection.	Argument which links current research to previous research difficult to follow.  Exploring needs based upon SDT but not labelled as autonomy, competence and	Quantitative measures appropriate in examining a possible model.  Purpose of model unclear as constructs are not well defined.	Data collection tools adapted from previous research. Some example questions provided.  Engagement vs disaffection measure - Creating new factors from previous questionnaire as authors	Measures of BPN satisfaction used when earlier conceptualisations of measures suggest that they aren't exploring BPN fulfilment.  Claims to provide a measure "school fit" but this is not clearly defined	Lots of detail relating to data analysis.	Consideration of why SEM was appropriate. Bootstrapping also carried out.	Model fit analysis.  Tested different models.  No other variables controlled for.	Sample of 324 students from two high schools in Queensland Australia.  Due to lack of clarity around constructs and measurement tools I do not feel that findings can	Arguments relating to conclusions and findings are not easy to follow.  Difficult to draw conclusions from constructs that are not clearly defined.	Links made to previous research but arguments are again difficult to follow due to confusion relating to which constructs were measured.

			relatedness. Not clear why.  New construct of "school fit"? Unclear what this means.		consider this to be a multidimensional construct that was not constructed this way by the researchers who created the measure..  Cronbach's alpha provided.	as a unique construct.				be generalised.		
Raufelder, et al. (2016)	No explicit consent received from students – only told of their right to withdraw – opt out consent.  Relevant government permission and parental permission sought.  Confidentiality promised.	Researcher led design.  Parental permission sought.  Pupils central to data collection.	Detailed discussion of previous literature and studies leading up to this piece of research.  Well-grounded reasoning for exploring this area further.	Want to study the relationships between a number of variables. Quantitative analysis seems appropriate.	Questionnaires used within previous research were utilised.  Cronbach's alpha given for all measures. Good detail about scales and example questions given.  Example questions from measures seem logically related to constructs.	No explicit consideration of validity.  Some example questions given – concerned that questions relating to BPN's may not reflect the definition of the constructs from the original theory. (e.g. autonomy = working independently, relatedness = friendly and relaxed atmosphere)	Good detail of steps of data analysis.	Consideration is given to alternative data analysis methods with warranted arguments as to why one data analysis method was chosen over another.	Structural equation modelling of a proposed model based on literature.  No additional variables controlled for or considered.	Theory of motivation types relatively new and not thoroughly tested and explored as yet.  Over 1000 participants but all from one small area of Germany.  NB two Raufelder papers from same sample of students.	Findings and conclusions seem logical and grounded in previous theory and research.	Clear links made with previous research however motivation type research is still relatively new and therefore needs further exploration before conclusions can be considered warranted.  Author recognise limitations and give suggestions for further research.

## **Appendix 3 – Research Information Sheet**

Dear staff team member,

I am a trainee Educational Psychologist with Newcastle University working in Durham Educational Psychology Service. I am currently conducting research which hopes to explore how we can support pupils using a framework based on the theory of BPNs. I then hope to support staff to use this information to develop strategies to support these pupils. Please read the following information, and consider whether you would like to take part in the project.

### **What does the research involve?**

The first stage of the research will involve staff members coming together to explore how meeting BPNs might impact on pupils in school. It is likely that this session will take around 90 minutes and will take place after school. This session will lead to the creation of a framework which can be used to help structure your conversations with pupils in school. You will then have the opportunity to practise using the framework when working with a pupil. This will involve exploring the pupils' experiences using the framework before creating an action plan in collaboration with the pupil.

When staff have had the opportunity to use the framework I will then carry out a focus group lasting around one hour with those staff members who have been involved in this project. This will give you the opportunity to tell me about your experiences of using this framework where we can explore the strengths and difficulties of working in this way. You will then be given further opportunities to work with the framework before further feedback may be sought. At a later date, I will revisit the school to provide feedback to staff about the findings of my research.

### **What will happen to the information I share?**

During the focus group conversations will be recorded and later transcribed to allow for data analysis. Participants in the research will remain anonymous in the transcripts, in my project write up and in any feedback given the school and other participants. Findings may also be shared with other interested parties, for example Educational Psychologists, other schools or members of Durham County Council but again participants and their contributions will remain anonymous.

Names will not be shared during any part of the school feedback session, and no identifiable information will be included in the research paper. Any personal information (i.e. from consent forms or information from the discussions) will be kept securely and either locked away or password protected. Transcripts and recordings will be shared only with my supervisors, and those employed to transcribe the data. The recordings will be destroyed immediately after transcription. Written transcriptions will be destroyed after 10 years after the publication of this study.

### **Do I have to take part?**

Participation in the research is entirely voluntary and you can withdraw at any time without reason if you change your mind. It should be noted that once focus groups have been carried out I will be unable to remove contributions to discussions from the research. If you decide to withdraw either contact me on the contact details below or let me know on the day.

**If I require further information who should I contact?**

For more information please contact me on 03000 263333 or at [nicola.cockram@durham.gov.uk](mailto:nicola.cockram@durham.gov.uk). My work is being supervised by Dr Wilma Barrow, Reader in Educational Psychology at Newcastle University. If you have any questions or concerns about the project please contact her by emailing [wilma.barrow@ncl.ac.uk](mailto:wilma.barrow@ncl.ac.uk).

If you are interested in being involved with this research please complete the attached consent form, and return it to Miss Bowden, SENCo.

Many thanks,

Nicola Cockram

Trainee Educational Psychologist.



**Appendix 4 – Consent form**

**STAFF CONSENT FORM**

**Exploring the experiences of the application of a theory of BPNs in a  
Secondary School.**

Please read the following statements and place a tick in each box if you agree with the statement.

I have read and understood the information sheet.

I understand that I don't have to take part in the research and that I am free to drop out without giving reason. However, I realise that any contributions to discussions cannot be removed after the focus group is completed.

I am happy to take part in a focus group

**Print name:** \_\_\_\_\_

**Job Title:** \_\_\_\_\_

**Email Address:** \_\_\_\_\_

**Signed:** \_\_\_\_\_

**Date:** \_\_\_\_\_



## Appendix 5 - Debrief Form



Dear \_\_\_\_\_,

Thank you for taking part in my research project. My research hopes to explore the factors that might influence how members of staff are able to apply psychology within their practice. This involved coming together as a group to think about how the fulfilment of pupil's BPNs could be supported through making changes within your practice. The work we have carried out will be important in helping us find out more about the kind of things that may help teachers to make changes to support pupils in the future.

The information you have shared during our recorded session will be analysed alongside the views of other staff who have taken part. This information will then be fed back to school in order to help inform future practice.

Once I have completed my research I am happy to come back into school to explain my findings and open this up to further discussion. If you have any questions before then you can contact me on 03000 263333 or at [nicola.cockram@durham.gov.uk](mailto:nicola.cockram@durham.gov.uk).

Many Thanks,

Nicola Cockram

Trainee Educational Psychologist

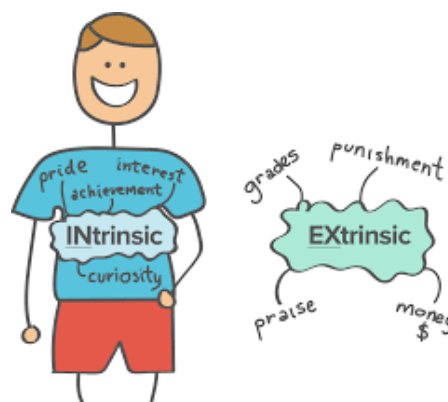
## Appendix 6 – SDT Information Sheet

### Self Determination Theory and Basic Psychological Needs

Self Determination Theory is a theory of motivation based on the work of Deci and Ryan (1985; 2000; 2002). This theory suggests that there are three universal basic psychological needs which need to be fulfilled to promote human psychological growth and effective functioning. These needs are;

- **Autonomy** - the need to have your voice heard and feel that you are in control of your own behaviour
- **Competence** - the need to feel effective in your environment
- **Relatedness** - the need to care for and feel cared for by others

The theory suggests that if pupils are immersed in environments that fulfil their need for autonomy and competence they are more intrinsically motivated to engage in activities that are presented to them. The need for relatedness is also important as pupils are more likely to behave in a way that is in line with the beliefs and values of those around them if they are in social contexts where they feel secure, important and cared for.



The fulfilment of these needs is context specific and therefore in order for students to feel motivated and engaged they must feel that these needs are fulfilled within the school context.

### Key Research Findings

The fulfilment of Basic Psychological Needs has been suggested to be related to a number of positive outcomes including;

- emotional and behavioural school engagement (Raufelder et al, 2014; Park, Holloway, Arendtsz, Bempechat and Li, 2012; Saeki and Quirk,

2015; Reeve and Lee, 2014; Van Ryzin, 2011; Jang, Reeve, Ryan and Kim, 2009; Zimmer-Gembeck, Chipuer, Hanisch, Creed and McGregor, 2006; Raufelder, Regner, Drury and Eid 2016)

→ general and school related wellbeing (Tian, Chen and Huebner, 2014; Véronneau, Koestner, and Abela, 2005; Eryilmaz, 2012)

→ academic outcomes (Ratelle, Guay, Vallerand, Larose and Senécal, 2007)

→ persistence in school (Ratelle, Guay, Vallerand, Larose and Senécal, 2007; Ratelle, Guay, Larose and Senécal, 2007)

→ self-efficacy (Diseth, Danielsen and Samdal, 2012)

→ achievement goals (Diseth, Danielsen and Samdal, 2012)



## Appendix 7 – Information relating to BPN fulfilment in school

### BPN Fulfilment in School.

The table below outlines some of the features of a learning environment that supports the fulfilment of the need for autonomy, competence and relatedness. These suggestions have been taken from the academic literature exploring psychological need satisfaction in schools however you may be able to think of other ways that the fulfilment of these needs may be supported.

<u>Autonomy</u>	<u>Competence</u>	<u>Relatedness</u>
<ul style="list-style-type: none"> <li>• Teachers listen carefully to students and acknowledge their perspectives</li> <li>• Students are provided with meaningful rationale for learning tasks.</li> <li>• Students are given opportunities to exercise choice relating to how and what to learn.</li> <li>• Staff and students are involved in joint decision making. This may be in relation to               <ul style="list-style-type: none"> <li>○ individualised education plans such as part time timetables or alternative education provision,</li> <li>○ how to approach learning tasks</li> <li>○ target setting or the creation of support plans (this may be related to both learning and behaviour support)</li> </ul> </li> <li>• Teachers allowing students to use regulation strategies to support behavioural self-regulation (eg. The use of time out strategies and movement breaks)</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers recognise and praise effort over achievement.</li> <li>• Students feel that they are improving and making progress.               <ul style="list-style-type: none"> <li>○ Staff provide students with personalised feedback that celebrates individual achievements and does not consider their progress in relation to the achievements of other students.</li> <li>○ Students and staff are involved in appropriate goal setting for each individual to allow for success</li> </ul> </li> <li>• Students are provided with a structured and predictable environment which has clear criteria for success and failure.</li> <li>• Students are given the opportunity to use their skills and talents</li> <li>• Students are provided with appropriately differentiated work.</li> </ul>	<ul style="list-style-type: none"> <li>• Students experience positive and warm relationships with peers and teachers are both important. This involves feeling;               <ul style="list-style-type: none"> <li>○ Supported</li> <li>○ Liked</li> <li>○ Accepted</li> <li>○ Included</li> <li>○ Encouraged to participate</li> <li>○ Cared about</li> <li>○ Emotional closeness</li> </ul> </li> <li>• All of these aspects are important in BOTH teacher and peer relationships.</li> </ul>

## Appendix 8 – BPN fulfilment in Schools with References

Article	Autonomy	Competence	Relatedness
Van Ryzin (2011)	Opportunities for choice and self-regulation whilst learning.	Recognition of effort, treating students fairly, individual evaluation that is not considered in comparison to others.	Support available for teachers and peers
Raufelder et al. (2016)	Teachers listening carefully to students and acknowledge their perspectives, provide meaningful rationale for learning tasks, and allow them opportunities to exercise choice.	Providing feedback on academic performance.	Fostering positive relationships with peers and feelings of social connection.
Zimmer-Gembeck et al. (2006)	Opportunities for joint decision making.	Structured and predictable environment where contingencies for success and failure are made clear	Fostering involved and warm relationships
Jang et al. (2009)	Providing an environment where there is volition in the initiation and regulation of behaviours.	Opportunities for exercising capacities and accessing optimal challenges.	Opportunities to develop close and secure attachments with teachers and peers
Park et al. (2012)	Choices about how and what to learn, shared decision making about the conditions for learning, offering a context where learning efforts relatively free from external controls	Ensuring students can identify and adopt appropriate strategies to identify what is required to do well.	Support available from teachers, parents and peers.
Reeve and Lee (2014)	Offering choices about what to do and how to do it.	Supporting students to feel capable of doing well and improving in class.	Creating feelings of belonging and providing opportunities to develop warm and caring relationships.