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THE ROLE OF YOUNG ADOLESCENTS' PSYCHOLOGICAL NEEDS AT SECONDARY SCHOOL: APPLYING BASIC PSYCHOLOGICAL NEEDS THEORY

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A thesis submitted for the degree of

DOCTOR OF PHILOSOPHY

WORD COUNT: 73,963

School of Sport and Exercise Sciences

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Declaration of Authorship

I hereby declare that this thesis, and the work presented within it, is entirely my own work. Where I have consulted and referenced the work of others, this has been clearly stated.

Stephen Earl

Abstract

Drawing on basic psychological needs theory (BPNT; Deci & Ryan, 2000), the aim of this thesis was to investigate the influence that pupils' autonomy, competence and relatedness may have upon their personal and academic functioning at school. The purpose was to provide new conceptual insights into BPNT within young adolescents' schools and to identify practically viable interventions that could enhance educational practise. Specifically, this thesis addresses two methodological vacancies within BPNT research and two practically driven investigations.

The first methodological consideration involved a person-centred examination that identified distinct pupil profiles based on differences in their psychological need satisfaction composition. Hierarchal cluster analysis revealed four distinct pupil groups. Pupils reporting the highest satisfaction across the three needs displayed the highest levels of well-being, autonomous motivation, teacher rated performance, and the least ill-being. These person-centred findings emphasise the necessity for the satisfaction of all three psychological needs, as well as highlighting specific need deficits that some pupils may experience in classrooms. The second methodological consideration explored how the satisfaction of each psychological need may predict changes in school attainment patterns. Hierarchal growth modelling revealed that higher pupil competence satisfaction was a driving stimulus for temporal attainment increases across the school year, whereas higher pupil relatedness satisfaction buffered against the summer decay of school grades following the summer vacation. These findings offer unique insights into the dynamic nature of school attainment.

From a practical perspective, the thesis explored if the candid frustration of different psychological needs underpins active and passive types of classroom disengagement. Structural equation modelling demonstrated the frustration of pupil competence uniquely explained passive disengagement via reduced subjective vitality, whereas experiences of

autonomy frustration underpinned both active and passive disengagement but not via subjective vitality. All three disengaging processes were found as a consequence of perceived psychologically controlling teaching. Finally, the thesis explored the feasibility of conducting a novel pupil-focused intervention to enhance pupils' perceptual awareness of their own psychological needs. Using a pupil completed diary-log as a methodology, a two week pilot and focus group discussion highlighted practical issues and recommendations for the potential implementation of a future intervention. These findings indicated that the diary-log may need to be in the form of an electronic application and would need to be combined with existing need supportive sessions.

Overall, the thesis findings add to existing knowledge by indicating how pupils' psychological needs may enhance or diminish their academic and psychological development at school. The findings allude to the interplay between the three needs within school contexts and provide insights into the unique role the different psychological needs may have on school attainment and disengagement. The findings also suggest there may be scope to advance existing teacher-focused BPNT interventions by helping pupils become more active in their own experiences of psychological need satisfaction.

Acknowledgments

There are a number of different people I would like to thank for making this thesis possible. First, I would like to thank my supervisors, Dr Ian Taylor (Loughborough University), Dr Carla Meijen and Professor Louis Passfield for offering their time, expertise and support. I have found the PhD journey to be an extremely rewarding but, at times, quite challenging process and this thesis would not have been possible without their guidance and patience. I will be forever grateful for the opportunities they have provided me.

Second, I would like to thank all the schools, teachers and pupils that participated and contributed to this thesis. It has been a joy to be able to work with them all and this research would have been impossible to conduct without their co-operation and generosity. The experiences they have shared with me have been so insightful to the design of this research.

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Peer-Reviewed Publications & Presentations

Research reported in this thesis has contributed to the following peer-reviewed publications and presentations.

Peer-Reviewed Publications:

Earl, S.R., Taylor, I.M., Meijen, C., & Passfield, L. (2017) Autonomy and competence frustration in young adolescent classrooms: Different associations with active and passive disengagement. Learning and Instruction, 49, 32-40.

Conference Presentations:

Earl, S.R., Taylor, I.M., Meijen, C., & Passfield, L. (2015, May). Autonomy and Competence Frustration in the Classroom: Different Associations with Active and Passive Disengagement. Poster presentation presented at the British Psychological Society Annual Conference 2015, Liverpool, United Kingdom.

Ethical Approval Reference Numbers

The empirical research in Chapters 2, 3, 4 and 5 were ethically approved by the University of Kent's School of Sport and Exercise Sciences Research Ethics and Governance Committee.

Table i
Ethical Approval Reference Numbers for All Research Chapters

	Ethical Reference Number
Chapter 2	Prop105_2013_14
Chapter 3	Prop50_2012_13
Chapter 4	Prop02_2013_14
Chapter 5	Prop 132_2014_15

Chapter 1

General Introduction

Chapter Overview

The early phase of secondary school represents a substantial time for young adolescents' psychological and academic growth (Riglin, Frederickson, Shelton, & Rice, 2013). Pupils that thrive during these initial years will seemingly experience school in accord with sustained academic success, inquisitiveness, and sociability. On the other hand, secondary school can be a more aversive place for some pupils, signified by academic struggle, coercion, and isolation. In this latter case, such pupils may be suspect to prolonged displays of school disengagement, delinquent behaviour, poor social functioning and underachievement (Caraway, Tucker, Reinke, & Hall, 2003; Henry, Knight, & Thornberry, 2012). Ultimately, these pupils can be at risk of 'turning off' from school at a time when their engagement may be of paramount importance (Roeser, Eccles, & Sameroff, 2000). Teachers may face a challenging task to inspire pupils during latter school years if these pupils have already disconnected from school in the preceding years (Li & Lerner, 2011). Understanding factors that underpin pupils' academic and personal growth during early secondary school may be vital in guiding pupils towards a successful school journey (Roeser & Eccles, 1998).

Gaining insights into the variability of pupils' perceptual and psychological experiences at school may be essential in identifying underpinning reasons for their academic, behavioural, and personal functioning (Nicholls, 1984; Wang & Holcombe, 2010). This thesis adopts a perspective of basic psychological needs theory (BPNT; Ryan & Deci, 2002) with the central aim of investigating the role that pupils' basic psychological needs may play in enhancing or diminishing their academic and personal development. BPNT has been used as a theoretical framework to explore individuals' personal and behavioural functioning within the domains of physical education (e.g., Standage, Gillison, Ntoumanis, & Treasure, 2012), work (e.g., Ryan, Bernstein, & Brown, 2010), exercise (e.g., Vlachopoulos, Kaperoni, & Moustaka, 2011) and health-care (e.g., Kasser & Ryan, 1999). The current series

of studies attempt to address the application of BPNT within young adolescent schools and to provide potentially new insights into nurturing pupils' psychological needs at school.

Prior to reviewing the theoretical tents of BPNT, this opening chapter begins by providing a brief overview of the context and objectives of secondary school. This overview aims to offer a broader understanding of the context in which this research is positioned. Next, the psychological constructs of BPNT are reviewed to outline the potential methodological and practical gaps that the subsequent empirical chapters will directly explore. Finally, this chapter ends by outlining the various research chapters of the thesis and the specific objectives they intend to investigate.

The Context and Objectives of Secondary School

The existence of different types of secondary schools in the United Kingdom, such as selective grammar schools, non-selective comprehensive schools and state-funded academies, means that these institutions operate under different structures (Department of Education, 2016). Regardless of these institutional differences, all pupils are obligated to attend school and acquire the recommended literacy and numeracy grades. Indeed, the upholding of pupil academic performance (i.e. school grades) is given prominence within school policy agendas. Schools strive to ensure that as many pupils as possible achieve a grade C or above at GCSE level (i.e. standardly age 16), particularly in the core school subjects of English, Maths and Science (Department of Education, 2015). Higher school grades may be especially important during early school years to help engage pupils in subsequent school years (Poorthuis et al., 2015). Thus, identifying psychological correlates that underpin school attainment may be invaluable in helping schools meet their attainment objectives.

Beyond simply increasing academic attainment, school education also aspires to nurture pupils' personal agency towards their education so they can become thoughtful and proactive citizens that can benefit society (Department of Education, 2014). Schools are

required to facilitate young adolescents' personal and social development, whilst inspiring them to be motivated and engaged towards their own learning (e.g., Christenson, Reschly, & Wylie, 2012; Vallerand, Fortier, & Guay, 1997). With this in mind, however, pupil disengagement from school represents one of the most noticeable problems for teachers (Fredericks, 2014). It is often pupils that are seemingly detached and alienated from school that display signs of psychological ill-being, problem behaviours and school drop-out (Archambault, Janosz, Fallu & Pagani, 2009; Hascher & Hagenauer, 2010; Tam, Zhou & Harel-Fisch, 2012). Although schools strive for pupils to prosper academically and personally, overcoming school disengagement may be an equally essential objective (Skinner, Kindermann, & Furrer, 2009).

It is apparent that the fundamental purpose of school can be complex and concerns a variety of academic, personal, and social aims. The series of studies within this thesis aims to explore how the psychological correlates of BPNT may underpin the positive outcomes of pupil well-being, motivation, and academic attainment, as well as more aversive outcomes of ill-being and school disengagement. By considering both adaptive and maladaptive outcomes, the present thesis aims to unearth further insights into why some pupils may flourish at school and why others may show more deleterious functioning.

The Development of Self-Determination Theory

Prior to reviewing in depth the theoretical components of BPNT, it is worth providing an overview of the conceptual background to which the theory is situated. BPNT is one of six mini-theories that sit within the theoretical framework of self-determination theory (SDT; Deci & Ryan, 2000). Specifically, SDT adopts a qualitative perspective towards human behaviour and motivation by considering the underlying motives and reasons that drive an individual's behaviour (Deci & Ryan, 1991). Fundamental to SDT is its organismic dialectic nature, proposing that all individuals are active organisms that strive for growth and self-

development through their interaction with the surrounding environment (Deci & Ryan, 1991). In other words, all people have an innate tendency to intrinsically engage in activity for its own sake, develop their personal interests, seek challenges and interact with those around them. Yet the social context that a person is situated can nurture or deny this inherent tendency for growth depending on the extent it encourages intrinsic activity and harmonious interaction or promotes coercion and alienation (Deci & Ryan, 2000).

Cognitive evaluation theory (CET; Deci & Ryan, 1985a), the earliest mini-theory of SDT, specifically considers the role that the social context, such as external rewards and interpersonal controls, can have on intrinsic motivation. Intrinsic motivation refers to engaging in behaviours purely out of an inherent interest, love or enjoyment found in the activity itself (Deci & Ryan, 2000). Initial studies showed that monetary rewards (Deci, 1971), and controlling rather than informational feedback (Ryan, 1982), reduced intrinsic motivation. Yet it is not the mere presence of external contingencies that is detrimental to intrinsic motivation but rather the extent that these contingencies become the underlying reason for an individual's behaviour.

SDT recognises that not all activities are undertaken purely due to intrinsic interest or enjoyment, and could be driven by external reasons. This may be particularly prevalent within secondary schools given the compulsory and directive nature of the majority of school activities. Organismic integration theory (OIT; Deci & Ryan, 2000), the second mini-theory of SDT, specifies different forms of extrinsic motivation that differ in quality and the extent they are internalised. Specifically, OIT categorises motivation into autonomous, controlled or amotivated types which are positioned along a self-determined continuum (see Deci & Ryan, 2000). Autonomous motivation represents behavioural regulation that emanates from one's self and in accordance with personal values (Grolnick, Deci, & Ryan, 1997). Autonomous motivation can be separated into three distinct sub-types. The first sub-type is intrinsic

motivation which characterises behaviour that originates purely from oneself. Next, and further down the self-determined continuum, is integrated regulation. Here, participation may not be purely intrinsic but school activities will be integrated with one's personal values and fully assimilated with their sense of self, such as viewing school activities as integral to personal and lifelong development. Third is identified regulation, whereby pupils will understand and identify with the value of school activities and therefore their participation will emanate from themselves albeit to a lesser degree than integrated regulation. For example, pupils may not intrinsically enjoy learning about equations yet may identify with the value of equations for their maths lessons.

In contrast to autonomous motivation, controlled motivation reflects behavioural regulation that is not self-endorsed but hinges on pressure or external contingencies (Deci & Ryan, 2000). One form of controlled motivation is introjected regulation, whereby behaviour is driven by internal pressure relating to ego-enhancements and proving self-worth, or avoiding feelings of guilt and shame. These pupils may only do classwork to show others how good they are or to avoid internal feelings of guilt if they fail to complete the work. Alternatively, the least self-determined form of motivation is external regulation which indicates no internalisation at all. These pupils' participation at school will be completely controlled by an external demand or contingency, such as gaining a reward or praise, or avoiding punishment. At the end of the continuum, and contrary to both autonomous and controlled motivation, is amotivation. Amotivated pupils will lack any intention to behave and consider their behaviour to be futile in achieving a desired outcome (Deci & Ryan, 2000).

Empirically, autonomous motivation has been shown to be the optimal type of pupil motivation which is fundamental for adaptive cognitions, affections and behaviours. Autonomously motivated pupils will typically display higher effort, concentration, well-

being, effective study strategies and academic achievement (e.g., Kusurkar, Ten Cate, Vos, Westers, & Croiset, 2012; Standage, Duda, & Ntoumanis, 2005; Taylor, Ntoumanis, Standage, & Spray, 2010). Conversely, the adoption of controlled motivation has been associated with more deleterious pupil outcomes such as lower school engagement, academic adjustment, school performance and higher cheating behaviours (e.g., Guay et al., 2010; Vansteenkiste et al., 2010). Even worse, pupil reports of amotivation have been associated with higher school drop-out and poor academic performance (Leroy & Bressoux, 2016; Vallerand et al., 1997). Thus, SDT proposes it is autonomous pupil motivation that is pivotal in enhancing their cognitive, behavioural and academic development (Ryan & Niemiec, 2009).

A third mini-theory of SDT, causality orientations theory (COT; Deci & Ryan, 1985b), proposes that individuals may orient differently towards the same social context depending on their unconscious motivational disposition. For instance, pupils with a high autonomous orientation may tend to act in accord with their own interests, interpret external factors as informational and regulate their behaviour autonomously. In contrast, those with a dominant controlled orientation may tend to view external events as pressurising, focus on rewards or approval, and subsequently regulate their behaviour in a controlled manner. Finally, pupils with a high impersonal orientation may perceive their behaviour as out of their control and be prone to feelings of helplessness and passivity which are similar to that of amotivation. Studies have shown that helping individuals activate an autonomous orientation resulted in them reporting higher enjoyment, becoming less defensive, exerting more effort, and performing better on a given task (Hodgins, Yacko, & Gottlieb, 2006; Levesque & Pelletier, 2003; Radel, Sarrazin, & Pelletier, 2009).

Further developments in SDT, namely goal content theory (GCT; see Vansteenkiste, Niemiec, & Soenens, 2010), also consider the role that intrinsic and extrinsic goals may have

on a person's motivation and perceptions of the social context. Intrinsic strivings for personal development, health and meaningful relationships have been found to lead to greater well-being, whereas extrinsic strivings for wealth and reputation have been associated with higher ill-being (Kasser & Ryan, 1996). Distinct from motivation types, both intrinsic and extrinsic goals can be pursued for either autonomous or controlled reasons. For example, a pupil may strive to improve academically (i.e. intrinsic goal) either because they personally value schoolwork (i.e. autonomous motivation) or because they would feel guilty and ashamed if they did not (i.e. controlled motivation). Although goal content is valuable to consider, certain goals may hold different value depending on the context, and thus the underlying motivation for any goal may be particularly important in understanding any subsequent well-being or academic outcomes (Soenens, Berzonsky, Dunkel, Papini, & Vansteenkiste, 2011; Vansteenkiste, Lens, Elliot, Soenens, & Mouratidis, 2014).

Basic Psychological Needs Theory

BPNT sits at the heart of all the aforementioned mini-theories, positioning the fulfilment of the three innate psychological needs of autonomy, competence, and relatedness as essential for producing autonomous motivation, as well as optimal personal and psychological growth (Ryan & Deci, 2002). For instance, engrained within CET, was the notion that intrinsic motivation would be fostered when the needs of autonomy and competence were satisfied (Deci & Ryan, 2000). The need for autonomy refers to the degree to which an individual experiences volition and responsibility for their own behaviour, in accordance with their personal values and interests (deCharms, 1968). Pupils that feel they can freely be themselves and view school activities to be relevant with their personal values are likely to experience autonomy satisfaction at school. The need for competence relates to individuals' experience of effectiveness in their pursuits and ongoing interactions with the social context (White, 1959). Pupils that feel they are capable of completing prescribed work

and being successful at school will likely experience competence satisfaction at school. The experience of relatedness was later considered as an essential psychological experience referring to the need to form close, trusting interpersonal relationships and feel connected with others (Baumeister & Leary, 1995). Pupils that perceive emotionally supportive bonds with teachers (e.g., Davidson, Guest, & Welsh, 2010) and peers (e.g., Furrer & Skinner, 2003) will likely experience relatedness satisfaction at school.

The satisfaction of these three needs represent the conjoining mechanism between ones' goals, motivation and subsequent behaviour. For example, the adoption of intrinsic goals (e.g. for personal development) are more conducive to psychological need satisfaction compared to external strivings (e.g. for wealth) which may not, or only partly, satisfy these three needs (Vansteenkiste, Soenens, & Duriez, 2008). Subsequently, individuals are more likely to autonomously regulate their behaviour when they experience psychological need satisfaction. Relationship motivation theory (RMT; Deci & Ryan, 2014), the sixth and most recent SDT sub-theory, further specifies that the mutual satisfaction and support of relatedness, as well autonomy and competence, is essential for the development of high-quality relationships. It is only when both parties are autonomously engaged in the relationship and support each other's psychological needs will they each feel truly valued and supported. This is particularly important to develop in contexts where there may be an obvious position of authority, such as the teacher – pupil relationship (Deci & Ryan, 2014).

Following the organismic dialectic framework, BPNT specifies it is a natural human tendency to seek contexts in which these psychological needs are satisfied (Sheldon & Gunz, 2009). In other words, the experience of each psychological need derives from pupils' perceptions that their needs are supported or thwarted within the confines of a specific context. It is not the context itself that formulates this experience but rather the psychological meaning, or functional significance, that pupils place towards the context (Deci & Ryan,

1987). Thus, BPNT positions pupils' psychological need experience at the core of their behavioural and motivational regulation (Deci, Ryan & Williams, 1996). In a practical sense, pupils' psychological experiences can be problematic for educators to conceptualise, as they cannot be necessarily thought of as tangible, nor can these experiences be saliently observed (Reeve, 2002). Yet, a greater understanding and awareness of pupils' perceptions at school may yield valuable insights for educators to develop teaching practise that fosters adaptive pupil behaviour, feelings, and academic progression (Deci, 2009).

A large volume of cross-sectional evidence has demonstrated positive associations between pupils' psychological need satisfaction and their autonomous motivation (e.g., Chen, 2014; Standage et al., 2005), well-being (e.g., Taylor & Lonsdale, 2010; Saeki & Quirk, 2015) and school engagement (e.g., Raufelder, Regner, Drury & Eid, 2015; Wilson et al., 2012). These adaptive associations have also been illustrated longitudinally in regards to higher pupil well-being (e.g., Tian, Chen, & Huebner, 2014; Véronneau, Koestner & Abela, 2005), help-seeking strategies (Marchand & Skinner, 2007), and autonomous motivation (e.g., Cox, Smith, & Williams, 2008). Furthermore, the positive outcomes of psychological need satisfaction have been shown simultaneously as individual differences and within-person changes (e.g., Taylor et al., 2010) and universally across different cultures (Chen et al., 2015). In accord with this evidence, pupils' psychological need satisfaction seems to represent a valuable resource for educators to tap in order to promote pupil well-being, motivation and adaptive school behaviour (Niemiec & Ryan, 2009).

In contrast to pupil motivation, well-being and behaviour, the interplay between psychological needs and school performance has been much more inconsistent and unclear. Pupils' psychological need satisfaction has been associated with higher school grades when all three needs were combined into a composite variable (e.g., Badri, Amani-Saribaglou, Ahrari, Jahadi, & Mahmoudi, 2014). Yet differences have emerged when each psychological

need has been considered separately in relation to school grades. For instance, Korean pupils'
competence satisfaction was consistently associated with higher school grades across three
separate studies (studies 2, 3 and 4; Jang, Reeve, Ryan, & Kim, 2009). These associations are
similar to prior cross-sectional findings which also associated perceived competence with
both pupil self-reported performance (Hardre & Reeve, 2003) and official school grades
(Miserandino, 1996). In contrast to competence, Jang et al. (2009) found that autonomy
satisfaction showed positive links with school grades in only one of the three studies, while
relatedness satisfaction had no association in any study. These findings differ to longitudinal
evidence that found autonomy satisfaction predicted higher school grades over a school
semester, albeit indirectly as a consequence of higher school engagement (Jang, Kim &
Reeve, 2012), and negatively predicted school grades in a subsequent school year (Isakson &
Jarvis, 1999). Perceived relatedness satisfaction and emotional support have also been shown
to facilitate school achievement in future years (Furrer & Skinner, 2003; Song, Bong, Lee, &
Kim, 2015). Deducing from this evidence, the relationship between each psychological need
and school attainment may vary over time. Thus, further clarity of these relationships may be
provided by longitudinal investigation.

Although researchers have examined how school performance may be temporally
influenced by autonomous motivation (e.g., Alivernini & Lucidi, 2011), emotional
functioning (e.g., Riglin et al., 2013) and teacher support (e.g., Fall & Roberts, 2012), there
appears to be a vacancy for longitudinal exploration of all three psychological needs with
school grades. Previous BPNT longitudinal studies have predominately included outcomes of
well-being (e.g., Tian et al., 2014; Veronneau et al., 2005), adaptive academic behaviour
(e.g., Marchand & Skinner, 2007; Taylor et al., 2010) or school engagement (e.g.,
Opdenakker & Minnaert, 2014; Yu, Li, & Zhang, 2015). Conversely, longitudinal BPNT
studies that have considered school attainment mostly only focus on one need (e.g., Furrer &

Skinner, 2003) or only cover a school semester (e.g., Jang et al., 2009; 2012). One recent exception found that stable or increasing experiences of high psychological need satisfaction, particularly in competence, predicted higher future academic adjustment over multiple school years which included higher school grades (Ratelle & Duchesne, 2014). The present thesis attempts to extend this existing knowledge by examining how pupils' experiences of each psychological need may explain attainment patterns over different school years.

Delving further into BPNT propositions, more deleterious and darker aspects of pupil functioning at school are posited to ensue when pupils perceive their psychological needs to be dissatisfied, or worse, actively frustrated (Ryan & Deci, 2000; Vansteenkiste & Ryan, 2013). In particular, psychological need frustration has been differentiated as a more maladaptive concept than that of need dissatisfaction (i.e. a lack of need satisfaction; Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Haerens, Aelterman, Vansteenkiste, Soenens & Van Petegem, 2015). Pupils low in psychological need satisfaction may not experience the same harmful outcomes as pupils that perceive their needs to be actively frustrated. For example, pupils may experience low autonomy satisfaction because they cannot behave with full volition due to prescribed school rules or may not see the relevance of certain school activities. Yet the outcomes of these experiences may be less harmful compared to pupils experiencing autonomy frustration, whereby they feel actively forced or pressured to do activities against their will. Similarly, pupils may experience low competence satisfaction when they feel unable to do school work but this may not be as harmful as feeling like a failure at school if their competence is actively frustrated. Low relatedness satisfaction may result from pupils feeling unsupported by teachers and peers but this is not equal to feeling actively isolated and secluded at school which is signified by relatedness frustration (Haerens, Vansteenkiste, Aelterman, & Van den Berghe, 2016).

The frustration of pupils' psychological needs is posited to provoke defensive and compensatory behaviours such as passivity, alienation, misbehaviour, resistance, and defiance (Vansteenkiste & Ryan, 2013). Empirical evidence has shown the frustration of psychological needs to be associated with outcomes of ill-being, amotivation, and maladaptive interpersonal functioning (Bartholomew, Ntoumanis, Cuevas, & Lonsdale, 2014; Costa, Ntoumanis, & Bartholomew, 2015; Gunnell, Crocker, Wilson, Mack, & Zumbo, 2013). From a behavioural perspective, need frustration has also been linked with pupil bullying (Hein, Koka, Hagger, 2015) and school disengagement (Jang, Kim, & Reeve, 2016). In both these cases, pupils' need frustration occurred as a result of perceiving their teacher to be psychologically controlling (Vansteenkiste & Ryan, 2013). Psychologically controlling teachers will adopt a teacher-centred agenda and attempt to direct, manipulate or pressure pupils using external sources to motivate pupil behaviour (e.g. deadlines, incentives, threats of punishment, criticism; Reeve, 2009; Reeve & Jang, 2006). In its own right, teacher psychological control has been associated with school disengagement (Assor, Kaplan, Kanat-Maymon, & Roth, 2005), a lack of motivation (De Mayer et al., 2014), and oppositional defiance (Haerens et al., 2015). In view of this evidence, examinations of maladaptive pupil behaviour and school disengagement may be better understood by measurements of pupil perceived psychological need frustration and teacher psychological control.

Disengaged pupil behaviour at school can come in many different forms. Behaviours associated with passivity (Murdock, 1999; Paulsen & Bru, 2008), burnout (Wang, Chow, Hofkens, & Salmela-Aro, 2015), defiance (Van Petegem, Vansteenkiste, Soenens, Beyers & Aelterman, 2015), and disruption (Sun & Shek, 2012) all constitute school disengagement yet vary in their characteristics. Although research has differentiated between cognitive, emotional and behavioural disengagement (Jang et al., 2016), few studies have explored the psychological correlates of different disengaged pupil behaviours. Furthermore, BPNT

studies exploring psychological need frustration have predominately combined the three

psychological needs into a composite variable (e.g., Haerens et al., 2015; Hein et al., 2015).

The present thesis aims to build on this work by specifically exploring if the frustration of

distinct psychological needs may uniquely explain different types of pupil disengagement.

To summarise, the present thesis aims to extend knowledge of how the satisfaction

and frustration of pupils' basic psychological needs may explain their classroom functioning,

school attainment patterns and different types of school disengagement. The current series of

studies attempts to address two methodological and two practical gaps which are discussed in

more detail in the following sections. These studies are designed to help build on existing

theoretical knowledge of BPNT as well as offer practical recommendations for the support of

pupils' psychological need satisfaction at school.

Methodological Gaps

This next section identifies and reviews two methodological gaps within BPNT

school-based research which this thesis will address.

A Person-centred Methodology

The three psychological needs are conceptually different from one another and

possess distinct characteristics, yet Deci and Ryan (2000) have alluded to a degree of synergy

between each need. Researchers have indicated that optimal personal well-being will occur

when a person experiences a balanced satisfaction across all three needs, not just satisfaction

of an isolated need (Sheldon & Niemiec, 2006). One perspective of looking at human

functioning is that individuals behave as a consequence of the interaction between numerous

psychological influences (Bergman & Magnusson, 1997; Scholte, van Aken, 2001). Rather

than a traditional variable-centred approach, adopting a person-centred methodology to

psychological need satisfaction would consider the individual pupil as a whole rather than in

regards to individual BPNT variables. Prior person-centred methodologies have been

conducted in regards to SDT distinctions of motivation (e.g., Ratelle, Guay, Vallerand, Larose, & Senecal, 2007; Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). These studies revealed specific patterns of pupil motivation, illustrating that groups higher in autonomous, rather than controlled, motivation reported more adaptive academic and psychological outcomes. Following the theoretical tenets of BPNT (Ryan & Deci, 2002), psychological need satisfaction represents the mechanism for autonomous motivation to develop (e.g., see Haerens et al, 2015; Ntoumanis, 2005). Yet, no research to date has clustered pupils based upon their psychological needs.

A particular strength of a person-centred BPNT assessment is that it will bring the pattern and interplay between the three needs into focus (Bergman & Andersson, 2010). School classrooms embody settings that are compulsory and directive in nature, involving salient performance assessments and regular social interaction. Pupils that experience satisfaction across all three needs should display more optimal personal, social and academic functioning (Sheldon & Niemiec, 2006). With this said, pupils may experience specific deficits in particular needs within school classrooms. For instance, a pupil may feel particularly competent at classwork but feel forced to do classwork (i.e. a lack of autonomy) and feel relatively unsupported in class (i.e. a lack of relatedness). It seems unlikely that pupil groups reporting deficits in one or more psychological needs will display the most adaptive psychological and academic outcomes. Clustering pupils based on differences in their psychological need composition, and exploring the associated outcomes, may unearth valuable practical knowledge into different sub-groups of pupils that may exist within school classrooms. Such knowledge may also help guide future teaching practise for specific pupil groups.

This approach was used within Chapter 2 to assess how distinct pupil psychological need profiles may differ in the outcomes of well-being, ill-being, motivation and teacher-

rated performance. The concepts of well-being and ill-being are considered diametrically distinct from each other, rather than simply opposing one another, and thus require individual assessment (Ryan & Deci, 2001). For example, pupils experiencing a lack of well-being and vital functioning (e.g., positive affect and subjective vitality) may not equate to experiencing severe aspects of ill-being (e.g., negative affect, and stress). Previous findings have shown higher psychological need satisfaction to be positively associated with pupils' subjective vitality, emotional functioning and higher quality of life (e.g., Saeki & Quirk, 2015; Standage et al., 2012; Taylor & Lonsdale, 2010). Examining group differences in both well- and ill-being may identify specific pupil groups that are at a higher risk of psychological ill-health compared to profiles that may experience higher well-being at school.

In regards to pupil motivation, previous findings have shown that introjected regulation can be distinguished into introjected approach (i.e. to fulfil a sense of self-worth) and introjected avoidance (i.e. to minimise low self-worth by evading guilt and shame) distinctions (Assor, Vansteenkiste & Kaplan, 2009). Introjected avoidance regulation was found to be less autonomous compared to introjected approach, and subsequently predicted lower pupil well-being (Assor et al., 2009). Yet, identified regulation (i.e. autonomous) was still found to be the superior motivation showing much stronger associations with pupil well-being and school engagement than introjected approach motivation. Despite this evidence, no research to date has explored if the approach-avoidance distinction also extends to external regulation. This may be relevant within schools as externally regulated pupils may be driven to avoid negative consequences of punishments and detention, or driven to achieve desired consequences such as teacher praise or tangible rewards for good schoolwork. The person-centred approach in Chapter 2 attempts to incorporate this distinction by examining differences in school motivation consisting of identified regulation along with approach and avoidance types of introjected and external regulation.

Conceptualisation of Change in Academic Attainment

   The second methodological gap relates to the necessity for longitudinal investigation of the association between each psychological need and school attainment. An important consideration is that pupils' academic attainment is dynamic rather than static. That is, pupils' school grades will show variation across time rather than remain consistently the same. Indeed, annual fluctuations in school grades have been evidenced with increases over the school year but decreases over transition into a new school year (Barkoukis, Taylor, Chanal, & Ntoumanis, 2014). These increases in school attainment were found to be driven by pupils' autonomous motivation at school. Indications of academic growth and pupil development may be exposed by investigating patterns of change in their school attainment. Despite the importance of increasing pupil attainment, few studies have explored how psychological need satisfaction may influence change in grades over school years. This may be particularly valuable during young adolescent schooling, when pupils also experience biological and psychological developmental changes (see Steinberg, 2005; Wigfield, Byrnes, & Eccles, 2006). Such an investigation may provide useful insights for educators in facilitating pupils' academic development throughout their time at school.

   Previous attainment fluctuations (e.g., Barkoukis, Taylor, Chanal, & Ntoumanis, 2014) have exemplified the well-established summer decay of school grades (e.g., Alexander, Entwistle, & Olson, 2001; Cooper, Nye, Charlton, Lindsay & Greathouse, 1996). That is, school grades typically show a seasonal decline following pupils' summer vacation away from school. Previous research has suggested this summer decay may accentuate differences in high and low school achievers (Rambo-Hernandez & McCoach, 2015), and pupils from different socio-economic backgrounds (Alexander, Entwisle, & Olson, 2007). Given its existence, it seems necessary to account for this summer decay when investigating attainment patterns across school years. It is unknown how, if at all, the satisfaction of each

psychological need may buffer against this summer decay of school grades. Deducing from previous evidence (Gillison, Standage, & Skevington, 2008), the satisfaction of pupils' autonomy and relatedness were found particularly important for their quality of life during the transition between primary and secondary school. Additionally, relatedness satisfaction at school has been shown to have protective qualities against negative family relations at home (Loukas, Roalson, & Herrera, 2010). It may be that autonomy and relatedness satisfaction at school provide a beneficial resource for pupils' academic development when they face a layoff from school. The research in Chapter 3 of this thesis may help fill this void in knowledge by examining how differences in the satisfaction of each psychological may predict temporal change and the summer decay of pupil grades across two school years.

Practical Gaps

In this next section, two practical gaps are outlined and discussed which this thesis will attempt to address. Although the theoretical concepts of BPNT are heavily integrated in both cases, they have been outlined as practical gaps as they may have substantial practical implications for educators and school institutions.

Different Types of School Disengagement

The first practically driven consideration of this research is to identify different forms of pupil disengagement and investigate the potential psychological correlates of such maladaptive behaviour. Disengagement has emerged as conceptually distinct from engagement and is worthy of examination in its own right. For instance, behavioural and emotional aspects of engagement (i.e. enthusiastic involvement) are viewed distinctive from behavioural and emotional aspects of disaffection (i.e. apathetic or frustrated withdrawal; e.g. Skinner, Furrer, Marchand, & Kindermann, 2008). Likewise, agentic engagement (i.e. the active contribution to enhance one's experience of the learning environment) is dissimilar to

agentic disengagement (i.e. a submissive acceptance of the learning environment, regardless if experienced negatively; Reeve & Tseng, 2011; Reeve, 2013).

In its broadest sense, disengaged behaviour refers to pupils' detachment and disconnection from academic and social activities at school (Appleton, Christenson, & Furlong, 2008). Moving beyond this generic interpretation, however, disengaged and irrelevant classroom behaviour can manifest in a variety ways. Specifically, maladaptive reactions in classrooms may portray an active type of disengagement or a passive type. Active disengagement refers to pupils' disconnecting themselves from classroom activities in an animated and reactive manner, such as disrupting the class, talking over or arguing with others, and disobeying the teacher (Way, 2011). These behaviours are analogue with the concept of oppositional defiance and disruption (Van Petegem et al., 2015; Sun & Shek, 2012). This reactive and rebellious type of maladaptive behaviour represents a more overt form of disengagement that is non-compliant and off-task in nature. In contrast, passive disengagement signifies a more subtle and inactive withdrawal in classrooms. Such passivity will be displayed by lethargy and daydreaming with pupils becoming unresponsive to interpersonal interaction and avoiding difficult tasks. In spite of the clear existence of both active and passive types of disengagement, no research to date has explicitly explored the potential psychological mechanisms that may underpin each.

Extrapolating from the concept of learned helplessness (Abramson, Seligman, & Teasdale, 1978), it may be that the frustration of pupils' competence underpins a passive disengaging response. Pupils perceiving low ability beliefs reported higher passivity (Patrick, Skinner, & Connell, 1993) and amotivation at school (Legault, Green-Demers, & Pelletier, 2006). Measuring pupils' experiences of competence frustration may be indicative of passive disengagement in the classroom. Conversely, evidence within the parenting domain has indicated that more delinquent and reactive behaviours are associated with the obstruction of

children's autonomy (Joussemet, et al., 2008). Concordant with existing literature on defiance and reactance (Koestner & Losier, 1996; Pavey & Sparks, 2009), it may be that pupils are inclined to actively reject authority if they feel coerced to do things against their will. Thus, pupils' experience of autonomy frustration may underpin active disengagement in classrooms.

It may be that the frustration of pupil autonomy and competence initiate different disengaging responses. In accord with the origins of SDT, the candid needs of autonomy and competence are posited as the integral properties of intrinsically motivated behaviour (Deci & Ryan, 2000; also see Vansteenkiste, Niemiec & Soenens, 2010). Thus when frustrated, these two needs may represent the central drivers of disengaged behaviour. Building on previous work on teacher psychological control and psychological need frustration (e.g., Haerens et al., 2015; Jang et al., 2016), disentangling the frustration of these two psychological needs may explain distinct mechanisms underpinning active and passive forms of school disengagement. From an applied perspective, identifying distinct mechanism of different disengaged behaviours may be valuable for educators in reducing pupil detachment within classrooms. This was the primary objective of research in Chapter 4 of this thesis.

To summarise to this point, two methodological gaps and one practical consideration have been explored in relation to pupils' psychological needs. From a methodological perspective, new conceptual insights may be uncovered by profiling pupils based on their psychological need satisfaction as well as exploring how psychological need satisfaction may predict temporal changes in school attainment. From a practical perspective, the thesis attempts to extend knowledge of the darker side of pupil functioning by investigating if the frustration of pupils' competence and autonomy underpin distinct active and passive disengaging responses. In addition to these considerations, however, investigation of how to best nurture pupil psychological need satisfaction may be of substantive value for schools. In

the next section, existing interventions that aim to support pupils' psychological needs are reviewed and critiqued to inform potentially new methods of fostering pupil psychological need satisfaction.

Fostering Psychological Need Satisfaction

Given the importance of psychological needs for pupils' optimal school and personal functioning (Niemiec & Ryan, 2009), empirically supported recommendations have been formulated as to how teachers can support, rather than thwart, pupils' psychological needs (e.g., Reeve & Jang, 2006). One such method is through the teaching strategies of autonomy support. Autonomy support accentuates a tone of understanding towards the pupil perspective by identifying with pupils' personal goals, offering choice, and providing rationales for activities (e.g., Assor, Kaplan & Roth, 2002; Reeve, 2015). Alternatively, teaching strategies of structure foster competence satisfaction by providing clear instructions to pupils regarding teacher expectations, how to achieve desired classroom outcomes, and consequences for their behaviour (Hospel & Galand, 2016; Wang & Eccles, 2013). Third, strategies of interpersonal involvement are proposed to foster relatedness satisfaction by offering pupils emotional support in a warm and friendly manner, whilst also actively considering their feelings and opinions (Connell & Wellborn, 1991; Skinner & Belmont, 1993).

Correlational (e.g., Gillet, Vallerand & Lafreniere, 2012; Taylor & Ntoumanis, 2007) and observational (e.g., Jang, Reeve & Deci, 2010; Van den Berghe et al., 2013) findings have associated pupil perceptions of these need supportive strategies with higher need satisfaction, autonomous motivation and school engagement. Consequently, a growing body of experimental BPNT based interventions have been designed to increase the support of pupils' psychological needs. For instance, a meta-analysis reviewed 19 interventions that trained a social agent (e.g. teachers, parents or medical practitioners) to become more autonomy supportive (Su & Reeve, 2011). Specifically within education, these reviewed

interventions included pre-service teachers (Reeve, 1998) and secondary school teachers (Reeve, Jang, Carrell, Jeon, & Barch, 2004; Tessier, Sarrazin & Ntoumanis, 2008; 2010). This meta-analysis revealed that teachers could be trained to display more autonomy supportive strategies following an intervention, resulting in learners reporting positive motivational and academic outcomes.

In a practical sense, need supportive teaching can present a challenge for many educators to conceptually understand, and may require a conscious awareness and educational strategy to promote (Aelterman et al., 2013; Reeve & Cheon, 2016). More recent school-based interventions have been centred upon educating and changing teachers' beliefs towards autonomy supportive strategies (Cheon, Reeve, & Moon, 2012; Cheon & Reeve, 2015; Wang, Ng, Liu, & Ryan, 2016), or the combination of autonomy support and structure (e.g., Aelterman, Vansteenkiste, Van den Berghe, De Mayer, & Haerens, 2014; De Naeghel, Van Keer, Vansteenkiste, Haerens & Aelterman, 2016). These studies revealed that providing workshops, group discussions and instruction to teachers helped enhance their use of the relevant need supportive strategies and resulted in pupils' need satisfaction, autonomous learning, better school grades, and lower amotivation. In fact, teachers were found to be able to maintain these strategies across the subsequent school year (Cheon & Reeve, 2013). Collectively, these studies provide encouraging evidence for the benefit of teachers adopting and implementing need supportive teaching strategies.

Despite the apparent benefits of increasing teachers' need supportive behaviour, the extent that pupils perceive this change in teacher behaviour themselves is inconsistent. For instance, whereas congruence has been found between teacher and pupil perceptions of autonomy supportive strategies (e.g., Chatzisarantis & Hagger, 2009; Cheon & Reeve, 2013), teachers' perceptions of their competence support were not perceived by pupils (Aelterman et al., 2014). Similarly, teacher reports of autonomy support and structure were found not to

correspond with their pupils' perceptions of the same behaviours, although weak congruence was found relating to the teacher's use of involvement strategies (Taylor & Ntoumanis, 2007). Thus, although teachers may feel they demonstrate need supportive behaviours, these behaviours may not always communicate to the pupils. Further observational evidence has shown that independent observers' ratings of teacher relatedness support were actually perceived by pupils to support their competence satisfaction (Haerens at al., 2013). Given the importance of pupils' own perceptions to their motivation and behaviour (Deci & Ryan, 1987), school interventions that solely modify the learning context may be ineffective if pupils perceive the context in an alternative way, or not all, to that which is intended.

Notwithstanding the clear necessity for fostering need supportive teaching, a potential caveat of placing sole reliance on the teacher is that it may overlook the development of adaptive pupil cognitions. Interventions that exclusively target the learning context seem to fulfil the environmental conditions required for autonomous motivation but are somewhat limited in the extent they nurture pupils' cognitive development. This contextual focus seems to view pupils as passive in their psychological need satisfaction by relying on the social context to offer need support. Yet BPNT maintains that psychological need satisfaction derives from the personal meaning that pupils will place on the social context (Deci & Ryan, 1987; 2000). Indeed, the same classroom context may be perceived very differently by different pupils. It is a natural human tendency to seek out the fulfilment of the three psychological needs (Sheldon & Gunz, 2009) but this may get lost in contexts that do not provide regular need support. To supplement the existing contextual interventions, there may be scope to devise an intervention that directly targets pupils' own understanding and awareness of their psychological needs.

Targeting pupils' subjective experiences at school can often been seen as a 'quick fix' to school wide problems, when in fact they may be a powerful psychological and academic

tool (Yeager & Walton, 2011). Learner-focused initiatives have grown in application, considering the concepts of growth mind-sets (e.g., Park, Gunderson, Tsukayama, Levine & Beilock, 2016; Yeager et al 2016), self-affirmation (Brady et al., 2016) and self-control (Duckworth, White, Matteucci, Shearer & Gross, 2016). To date, no research has conducted a pupil-focused intervention underpinned by BPNT, nor investigated if such an initiative would be feasible to conduct with young adolescent pupils.

One rationale behind this thinking is that pupils may be able to develop awareness of their own psychological needs which may help them become active in their search for need satisfaction, even with variation in teachers, social groups or learning context. Although similar reflective practises are emphasised with adult students in higher education (e.g., De Martin-Silva et al., 2015; Travers, 2011), it seems important to evaluate if young adolescent pupils can understand their psychological experiences in some way (Gestsdottir & Lerner, 2008). Secondly, a common problem for many learning-based initiatives is getting learners to participate and complete the intended activity (e.g. see Grant, Kinnersley, Metcalf, Pill, & Houston, 2006). Regardless of a theoretical rationale, if the intervention does not have any relevance or personal meaning for the pupils it will be ineffective in imparting the intended psychological awareness (i.e. social validity; Lyst, Gabriel, O'Shaughnessy, Meyers, & Meyers, 2005; Miltenberger, 2011). Thus, research in Chapter 5 directly explores the feasibility of conducting a pupil focused intervention that is designed to enhance pupils' awareness of their own psychological needs.

Overview and Aims of Research Chapters

It is clear from the large evidence base that the satisfaction (e.g., Ratelle & Duchesne, 2014) and support (e.g., Diseth, Danielsen, & Samdal, 2012) of pupils' psychological needs is beneficial for their academic motivation, well-being, engagement and achievement. Building on this evidence, the present thesis aims to address the methodological (Chapters 2

and 3) and practical (Chapter 4 and 5) issues outlined previously in this chapter. By doing so, the findings aim to advance knowledge of how pupils' basic psychological needs may enhance and diminish their academic and personal development. Furthermore, by addressing these issues, the thesis hopes to provide insights into potentially novel methods of nurturing pupils' psychological needs at school (Chapter 5).

The empirical research begins in Chapter 2 by conducting a person-centred methodology to cluster pupils based on differences in the composition of their psychological need satisfaction. From a conceptual perspective, such clustering of pupils may reveal specific psychological need patterns that emerge within compulsory school classrooms. Furthermore, group differences were examined in the outcomes of teacher-rated performance, and pupil reported well-being, ill-being and motivation. By exploring these group differences, specific pupil types may be identified that are at particular risk of maladaptive personal and academic functioning. Valuable practical implications may also emerge from such findings by identifying the distinct underlying reasons for different group's classroom functioning. For example, one group may struggle in class because they perceive themselves to be incompetent whereas another group may do so because they feel unrelated. For educators, understanding these group differences and the associated outcomes may help inform future teaching practise for pupil groups with specific psychological need deficits.

The research then moves to address the second methodological issue in Chapter 3 by investigating how pupil differences in the satisfaction of each psychological need may explain temporal change and the summer decay of school grades. Considering the inconsistent cross sectional (e.g., Jang et al., 2009) and longitudinal (e.g., Furrer & Skinner, 2003; Jang et al., 2012) findings found between each psychological need and school attainment, Chapter 3 attempts to provide some clarity on the relations between the three needs and the dynamic nature of school attainment. Although the summer decay has become

well established in literature (e.g., Alexander et al, 2001; 2007), no BPNT based study has explored if the satisfaction of each psychological need offer protective qualities against this summer decline. By investigating both the change and summer decay of school grades, this study may provide a more thorough conceptual understanding of how psychological need satisfaction may explain longitudinal attainment patterns.

The research then moves on to investigate the more deleterious practical aspects of pupil functioning by investigating the potential psychological correlates of active and passive disengagement. The concept of psychological control has become rooted within the darker side of BPNT (Vantseenkiste & Ryan, 2013), resulting in the frustration of pupils' psychological needs as well as school disengagement, amotivation and bullying (e.g., Haerens et al., 2015; Hein et al., 2015; Jang et al, 2016). Building on previous evidence associating passive withdrawal with a lack of ability beliefs (Patrick et al., 1993) and delinquency with autonomy obstruction (Pettit, Laird, Dodge, Bates & Criss, 2001), Chapter 4 provides an investigation to see if the frustration of pupils' autonomy and competence may explain distinct mechanisms that lead to active and passive disengagement, respectively. Identifying distinct mechanisms underpinning each type of disengagement may be valuable for teachers attempting to minimise pupil disengagement in classrooms.

Extending existing contextual interventions (e.g., Cheon et al., 2012; De Naeghel et al., 2016), the feasibility of a novel initiative to nurture pupils' awareness of their own psychological needs is investigated in Chapter 5. Focus group discussions and a two week pilot of a pupil completed diary-log were conducted to highlight any potential barriers and practicalities that would need to be considered in order to conduct such an intervention with pupils. These methods were intended to generate suggestions to help engage pupils with the dairy-log, identify if pupils would complete the diary and highlight any potential

improvements that may be need to be incorporated. Identifying these factors would help inform the design and implementation of the intervention in the future.

Chapter 2

Psychological Need Profiles in the Classroom: Associations with Pupil

Performance, Well-Being, and Motivation

Abstract

Classrooms comprise diverse pupil groups that differ in their perceptions, experiences, and functioning, however the psychological factors that underlie these pupil differences can be overlooked by educators. This study adopted a person-centred approach to identify distinct psychological need satisfaction profiles that may help identify differences in pupils' classroom experiences and behaviour. Participants were 586 pupils (age $= 11 - 15$ years old) from three secondary schools in the United Kingdom. Cross-sectional responses from pupils were analysed using hierarchical cluster analysis to identify distinct pupil groups. MANOVA and discriminant function analysis subsequently explored group differences in teacher-rated pupil performance, and pupil self-reported well-being, ill-being, and motivation. Four distinct profiles were revealed: a dissatisfied group (low satisfaction of each need); a satisfied group (high competence and relatedness satisfaction, moderate autonomy satisfaction); a competent group (high competence satisfaction, low autonomy satisfaction, moderate relatedness satisfaction); and a related group (high relatedness satisfaction, moderate competence and autonomy satisfaction). The highest levels of satisfaction for each need were reported by the satisfied group, who displayed the highest classroom performance, autonomous motivation and well-being. Conversely, the dissatisfied group showed the lowest satisfaction of each need and reported the least adaptive outcomes accompanied by the highest levels of ill-being. Similar moderate outcomes were reported by the competent and related groups. Such a person-oriented approach may help understand the connectivity between the psychological needs and adds further validity for the necessity of pupils' psychological need satisfaction in schools.

Keywords: basic psychological needs, person-centred, pupil profiles, motivation, classrooms.

Introduction

Secondary school pupils attend classes on a daily basis and, therefore, classrooms represent opportune contexts for educators to facilitate pupils' academic and psychological development (Baker, Dilly, Aupperlee, & Patil, 2003). Classrooms contain diverse groups of pupils that differ in their psychological experiences, perceptions of the learning environment, and the extent to which they thrive (Reeve, 2012; Wang & Holcombe, 2010). For example, some pupils may feel capable towards classwork but unsupported by others; whereas other pupils may develop close bonds with others but feel incapable of completing classwork. Different experiences may warrant distinct teaching support strategies and initiatives. Identifying pupil sub-types that share similar classroom experiences may be fundamental in developing effective, tailored interventions to increase classroom thriving.

Basic psychological needs theory (BPNT; Ryan & Deci, 2002) has received consideration within schools, positing that the satisfaction of pupils' basic psychological needs of autonomy, competence, and relatedness are required for psychological growth and optimal performance (Deci & Ryan, 2011; Niemiec & Ryan, 2009). Autonomy refers to the experience of volition and psychological freedom towards one's behaviour, in accordance with personal values and interests (deCharms, 1968). Competence refers to being effective in one's pursuits and goals (White, 1959). Relatedness refers to the forming of close, interpersonal relationships and feelings of connection with significant others (Baumeister & Leary, 1995). A vast amount of cross-sectional evidence has indicated that psychological need satisfaction may be a necessary resource for pupils to succeed at school, promoting pupil well-being, effort, autonomous motivation, adaptive social functioning, school engagement and academic achievement (Badri et al., 2014; Raufelder et al., 2015; Saeki & Quirk, 2015; Standage et al., 2005; Taylor & Lonsdale, 2010). Such adaptive processes have also been demonstrated longitudinally, across single school terms (Tian, Chen, & Huebner,

2014; Véronneau et al., 2005), and academic years (Opdenakker & Minnaert, 2014; Ratelle & Duchesne, 2014).

Although substantial findings illustrate the importance of pupils' psychological need satisfaction, this evidence base predominately derives from variable-centred research. That is, they explore the general associations between psychological need satisfaction and affective or academic outcomes by considering each need individually (e.g. Opdenakker & Minnaert, 2014; Raufelder et al., 2015) or averaging the three needs into a composite variable (e.g. Badri et al., 2014; Saeki & Quirk, 2015). In reality, the associated outcomes of psychological need satisfaction may differ depending on how pupils experience the needs in combination (Scholte, van Lieshout, & van Aken, 2001). Indeed, BPNT authors have inferred a degree of connectivity and symbiosis among the three psychological needs, with all three required for optimal functioning (Deci & Ryan, 2000). The associated outcomes for pupils high in competence satisfaction but low in autonomy and relatedness may be comparatively different to pupils high in relatedness satisfaction but low in the other two needs, for example. Examining pupils as individuals would offer a more holistic account of psychological need satisfaction in schools by allowing sub-groups or profiles of pupils to be identified that show similar patterns in psychological need satisfaction (Bergman, & Andersson, 2010; Bergman & Magnusson, 1997). A person centred approach may be better suited to investigate the complex and simultaneous interactions between the three needs, as hypothesised by BPNT's theoretical framework, compared to contemporary variable-centred analytical procedures (e.g. structural equation modelling; Haerens et al., 2015; Raufelder et al., 2015). From a practical perspective, assessment of these subgroups may also unearth valuable insights for tailoring classroom interventions, specifically towards pupil groups that display maladaptive psychological need profiles.

Person-centred research within education and SDT has previously been used to describe clustering criteria based on self-regulated learning styles (Liu, Wang, Kee, Koh, Lim, & Chua, 2014), goal content (Lindwall, Weman-Josefsson, Sebire, & Standage, 2016), SDT-based motivational regulations (e.g. Ratelle et al., 2007; Vansteenkiste et al., 2009), or a combination of SDT motivations and additional concepts such as achievement goals or social physique anxiety (e.g., Cox, Ullrich-French, & Sabiston, 2013; Wang & Biddle, 2001). These findings generally showed that self-determined pupil groups demonstrated more favourable academic and well-being outcomes. Previous studies have also used pupils' perceptions of the learning context to cluster pupils, distinguishing groups that differed in the extent they felt the learning climate supported their psychological needs (e.g., Jaakkola, Wang, Soini, & Liukkonen, 2015; Vansteenkiste et al., 2012). Pupils that perceived their learning environment to be highly autonomy and relatedness supportive reported higher classroom enjoyment (Jaakkola et al., 2015); whereas pupils that experienced a highly autonomy and competence supporting climate reported better time management, concentration and lower school truancy (Vansteenkiste et al., 2012). Despite the importance of adaptive motivation and learning climates for pupils' academic development, the experience of psychological need satisfaction is hypothesised to represent an underlying mechanism associated with both and therefore constitutes a valuable process for educators to target (Niemiec & Ryan, 2009). However, to the author's knowledge, no study has exclusively clustered school pupils based upon the satisfaction of their three psychological need satisfaction and examined how these groups may differ in academic or psychological outcomes.

Study Overview

Guided by BPNT, the present work adopted a person-centred approach to identify distinct pupil psychological need satisfaction profiles. The identification of pupil sub-groups who differ in classroom psychological need satisfaction is novel and, to some degree,

exploratory. In accord with BPNT definitions (Ryan & Deci, 2002), the three psychological needs possess distinct characteristics that are conceptually different from one another. Thus, pupils may experience high satisfaction in one need but not another. With this said, it is the satisfaction of all three needs in harmony that is required for optimal psychological growth (Deci & Ryan, 2000). Given this apparent synergy, the optimal satisfaction of each need will likely occur when pupils experience satisfaction in all three needs (Sheldon & Niemiec, 2006). For instance, some pupils may experience high competence at school but feel a lack of autonomy and relatedness with others. It may be unlikely that this group experiences optimal competence satisfaction due to deficits in autonomy and relatedness satisfaction. Likewise, pupils may not be able to experience optimal autonomy satisfaction in the classroom if they feel unable to the work and feel unsupported by others. Thus, it is hypothesised that the highest satisfaction levels of each need will occur in a group that reports the highest satisfaction across all three needs (hypothesis 1a). Equally, the lowest satisfaction levels of each need will be reported by a group low in all three needs (hypothesis 1b). Any other pupil clusters that show variation across the three needs are expected to report satisfaction levels that fall in-between these two groups.

The second aim of the study was to investigate if the identified profiles differed in teacher ratings of pupil performance (achievement and attentiveness), as well as self-reported outcomes of well-being (vitality and positive affect), ill-being (academic stress and negative affect), and motivation. In accord with BPNT propositions (Ryan & Niemiec, 2009), a pupil group displaying the highest satisfaction levels across the three needs is expected to demonstrate the most adaptive levels of teacher perceived performance, motivation and well-being, and the lowest levels of ill-being (hypothesis 2a). Conversely, a pupil group reporting the least satisfaction across the three needs will be expected to demonstrate the highest ill-being, and lowest levels in the favourable outcomes (hypothesis 2b). It is reasoned that any

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group relatively high in the satisfaction of one psychological need may be able to compensate for deficits in other psychological needs and may display moderate levels in the outcome variables. In particular, feelings of competence satisfaction have been shown important for academic achievement (Hardre & Reeve, 2003; Jang et al., 2009), pupil effort (Taylor & Lonsdale, 2010), and school well-being (Véronneau et al., 2005). Indeed, school classrooms signify contexts that are often performance and assessment driven. Consequently, any pupil group characterised by low competence satisfaction is expected to report relatively low levels of autonomous motivation, well-being, and particularly teacher-rated performance (hypothesis 3).

Method

Participants

The study sample consisted of 586 pupils (387 male, 199 female; mean age = 12.61 years, SD = 0.88 years, age range = 11 − 15 years old) from three selective grammar schools (two co-educational, and one boys school) in the United Kingdom (UK). The three schools ranged between 16% - 21% of their total pupils that were considered from ethnic minority backgrounds, which is below the UK national average. Fifteen teachers completed the ratings for the pupils' performance in their class. A total of 24 different classrooms were used with the taught subject varying between classes (Physical Education = 38%; Creative Learning = 33%; Citizenship = 21%; Geography = 8%).

Procedure

Full ethical approval was obtained from the principal researcher's university ethics committee. Teachers provided written consent to participate (see Appendix A) and opt-out forms were provided to all pupils' parents to indicate if they did not wish for their child to participate (see Appendix B). Three parents chose for their child not to participate in the study. Pupils confirmed their willingness to participate in writing (see Appendix C). Questionnaires were administered at the start of a school lesson by the principal researcher

(see Appendix D). All pupils were instructed that they did not have to complete the questionnaire if they did not wish to and that all items referred to the specific lesson in which the questionnaire was administered. The pupil questionnaire took approximately ten minutes to complete. The class teacher remained a passive observer in the classroom and pupils were asked to direct any questions regarding the study to the principal researcher to ensure confidentiality. The teacher-rated pupil attentiveness and achievement questionnaires were provided to teachers at the end of the school lesson and were completed and returned to the principal researcher within a week of being administered (see Appendix E).

Measures

    Autonomy. Autonomy satisfaction was measured using six items (e.g. "I have a say regarding what skills I want to learn") derived from previous research with young adolescents (Standage et al., 2005). The stem used was, "When in this class . . .", and responses were rated on a 7 point scale, ranging from 1 (not at all true) to 7 (very true). These six items have previously demonstrated acceptable internal consistency (α = .80; Standage et al., 2005).

    Competence. Competence satisfaction was measured using five items (e.g. "I think I am pretty good at activities in this class") from the Perceived Competence subscale of the Intrinsic Motivation Inventory (McCauley, Duncan, & Tammen, 1989). Items were adapted to the broader classroom context, rather than a specific task. For example, "I am satisfied with my performance at this task" was modified to "I am satisfied with my performance in this class". Responses were rated on a 7 point scale, ranging from 1 (not at all true) to 7 (very true). The original items demonstrated good internal consistency (α = .84; McCauley et al., 1989).

    Relatedness. Relatedness satisfaction was measured using the five item Acceptance subscale of the Need for Relatedness Scale (Richer & Vallerand, 1998). The stem "When in this class I feel . . ." was followed by the items (e.g. "listened to", "understood",

"supported,"). Responses were rated on a 7 point scale, ranging from 1 (not at all true) to 7 (very true). All items previously demonstrated good internal consistency ($\alpha = .85$-$.94$; Richer & Vallerand, 1998).

Pupil Attentiveness. Teacher perceptions of pupils' attentiveness were assessed using two adapted items from the Attentiveness subscale of the Pupil Behaviour Patterns Scale (Friedman, 1995). The items were "This student concentrates and works quietly in my class" and "This student is co-operative and enthusiastic during my class". Both items were rated on a 6 point scale ranging from 1 (never) to 6 (always). The scale items demonstrated good internal consistency ($\alpha = .85$; Friedman, 1995) and the two chosen items have demonstrated satisfactory factor loadings (.75 and .51 respectively; see Hastings & Bham, 2003).

Pupil Achievement. Guided by previous measures of pupil achievement (Pianta & Stuhlman, 2004; Rabiner, Murray, Schmid, & Malone, 2004), we used teacher perceptions of pupils' achievement in class due to the unavailability of objective school grades. Two items were designed for the purpose of this study: "Compared to the average student, this student performs well in this class" and "This student achieves a high academic level in this class". Both items were designed to reflect teachers' general perceptions of pupils' overall attainment in class, and were checked by teachers not participating in the study for clarity and comprehension. Each item was rated on a 6 point scale ranging from 1 (never) to 6 (always) and scores demonstrated acceptable internal consistency (see Table 2.1) and factor loading on to an achievement latent factor (see Appendix F for factor loadings).

Subjective Vitality. Pupils' feelings of aliveness and energy available to the self in the class were measured using a five item version of the Subjective Vitality Scale (Ryan & Frederick, 1997), previously used by Bartholomew et al. (2011). Items were rated on a 7 point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Example items include "I have energy and spirit" and "I nearly always feel alert and awake". Scores from the items

demonstrated good internal consistency (α =.92) and factorial structure in previous work (Ryan & Frederick, 1997).

Academic Stress. To measure pupils' feelings of stress in class we used the shortened four item Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) and adapted the stem to "When in this class...". Example items included "Do you feel that things are going your way" and "How often do you feel difficulties are piling up so high that you cannot overcome them". Items were rated on a 5 point scale, ranging from 1 (never) to 5 (very often). All items previously demonstrated acceptable internal consistency (α =.86) and scale validity (Cohen et al, 1983).

Positive and Negative Affect. Pupils' general positive and negative feelings in class were measured using the 10 item short form of the Positive and Negative Affect Schedule (PANAS; Thompson, 2007). Both positive affect (e.g. 'alert' and 'inspired') and negative affect (e.g. 'upset' and 'ashamed') had five items. The questionnaire stem used was "Thinking about yourself and how you normally feel in this class, to what extent do you generally feel", and pupils rated how often they experienced each feeling on a 5 point scale, ranging from 1 (never) to 5 (often). The short version of the PANAS has demonstrated good internal consistency (positive affect: α =.74; negative affect: α =.80) and factorial validity (Thompson, 2007).

Motivation. Extrinsic regulations that vary in their self-determination were measured with additional consideration of work differentiating between approach and avoidance sub-types (Assor et al., 2009). That is, identified regulation (behaviour is experienced with a sense of ownership), and approach and avoidance types of both introjected (striving for a sense of self-worth versus avoiding internal guilt or shame), and external regulation (striving for reward versus avoidance of punishment).

Previously validated items were used to measure introjected avoidance (five items), introjected approach (four items), and identified regulation (five items; Study 1, Assor et al., 2009). Items for all three subscales previously demonstrated satisfactory internal consistency ($\alpha = .78 - .79$) and factorial structure (Assor et al., 2009). External avoidance was measured using two items from the external regulation subscale of the Perceived Locus of Causality Questionnaire (Goudas et al, 1994) and two items created for the purpose of this study. The author observed that no established external regulation items were approach orientated, thus four items were created for the purpose of this study. All motivation items were rated on a 7 point scale ranging from 1 (strongly disagree) to 7 (strongly agree). For a complete list of the items used see Appendix G. Due to the creation of several items and using subscales from different questionnaires, we conducted preliminary validation work prior to the main study analysis. Latent confirmatory factor analysis and item factor loadings for motivation subscales were all found to be acceptable (see Appendix G). Cronbach's alpha coefficients can be seen in Table 2.1.

Data Analysis

Preliminary analysis involved calculation of descriptive statistics, Cronbach's alpha coefficients, and bivariate correlations (see Table 2.1). As there was not a priori hypothesised number of clusters, a combination of both hierarchical and non-hierarchal cluster analysis was conducted (Gore, 2000), using SPSS statistical software (version 22.0). Based upon pupils' scores for autonomy, competence, and relatedness satisfaction, Ward's method was used to conduct hierarchical cluster analysis. The optimal number of clusters was determined when the squared Euclidian distances were not substantially distinguishable (Hair, Anderson, Tatham, & Black, 1998). Subsequently, iterative non-hierarchical k-means clustering assigned pupils to a relevant cluster, using the determined number of clusters from the first step as a non-random clustering solution (Gore, 2000).

After assigning all pupils into groups, univariate analysis of variance (ANOVA) was conducted to explore group differences in each of the measured variables. Subsequently, four multivariate analysis of variance (MANOVA) tests were conducted to investigate the differences in the composite outcome variables across the pupil groups. Vitality and positive affect were entered as outcome variables in a 'well-being' MANOVA, academic stress and negative affect in an 'ill-being' MANOVA, the five motivation subscales in a 'motivation' MANOVA, and the teacher-rated pupil attentiveness and achievement comprised the MANOVA assessing 'performance'. Significant multivariate effects were followed up with discriminant function analysis.

Results

Descriptive Statistics

Means, standard deviations, internal consistency values, and bivariate correlations for all measurement scales are presented in Table 2.1. Cronbach's alpha values all demonstrated good internal consistency ($\alpha > .70$), with the exception of academic stress ($\alpha = .58$). Evaluation of removing each item and a supplementary confirmatory factor analysis revealed one problematic item ("In this class, do you feel that you are unable to control the important things"), which was removed and improved internal consistency ($\alpha = .64$). Variance across the measured variables was found predominately at the pupil-level, rather than class-level. For instance, variance across the three psychological needs was attributable between 89 and 97% at the pupil-level and only between 3 and 11% at the class-level. Similarly, between 68 and 99% of variance for all other variables was at the pupil-level, therefore between 1 and 32% was at the class-level.

Identification of Pupil Psychological Need Satisfaction Profiles

Inspection of the Euclidian distances (shown in Table 2.2) determined four distinguishable pupil groups. Mean values and partial η^2 for this four cluster solution are displayed in Table 2.3. A three-cluster solution was found to slightly reduce partial η^2 for

each need (autonomy = .42; competence = .53; relatedness = .55), merging two of the groups into a single cluster. A five-cluster solution appeared less parsimonious and explained variance in autonomy less adequately (partial η^2: autonomy = .24; competence = .50; relatedness = .66).

Table 2.3 depicts group comparisons across the four cluster solution based on mean scores for each psychological need, F values and effect sizes. This four cluster solution consisted of a dissatisfied group (n = 185, 32%), comprising of pupils that were relatively low in satisfaction of each of the three needs. A satisfied group (n = 110, 19%) was characterised by pupils with moderate autonomy satisfaction, and high competence and relatedness satisfaction. A competent group (n = 173, 29%) was characterised by pupils high in competence satisfaction, but with low autonomy satisfaction and moderate relatedness satisfaction. Finally, a related group (n = 118, 20%) comprised of pupils with relatively high relatedness satisfaction, but moderate levels of autonomy and competence satisfaction (see Appendix H for graphical representation of the four clusters).

Group Differences in Teacher-Rated Performance, Well-being, Ill-being, and Motivation

Mean scores and specific group differences based on ANOVA for all outcome variables are presented in Table 2.4, along with F values and effect sizes. With the exception of attentiveness, the satisfied group statistically differed from the dissatisfied group in all study variables. The competent and related groups typically fell in-between these two groups in every study variable but were not statistically different from one another. Subsequent multivariate group centroids obtained from the discriminant analysis are presented in Table 2.5.

Performance. The MANOVA identified that there was a significant difference in teacher-rated performance across the four psychological profiles, $F(6, 1104) = 5.46$, $p < .001$;

Wilk's $\Lambda = 0.94$, partial $\eta^2 = .03$. Discriminant analysis revealed two discriminant functions for teacher-rated performance; the second function did not significantly differentiate the pupil clusters, $\Lambda = 0.99$, $\chi^2 = 1.55$, $p = .46$. The first function explained 95.4% of the variance, canonical $R^2 = .24$, with pupil achievement loading predominately (achievement, $r = .99$; attentiveness, $r = .43$). This first function discriminated to a small degree between the four groups. The satisfied group were reported by the teacher to perform best in class, but only slightly better than the competent group. Next was the related group but with only minimal differences from the competent group, whilst the dissatisfied group were reported to perform relatively poorly (although differences between the related and unsatisfied group were minimal).

Well –Being. MANOVA revealed a significant difference across the four psychological need profiles, $F(6, 1162) = 49.17$, $p < .001$; Wilk's $\Lambda = 0.64$, partial $\eta^2 = .20$. Follow up discriminant analysis revealed two discriminant functions, however the second function did not significantly differentiate the pupil clusters, $\Lambda = 0.99$, $\chi^2 = 5.06$, $p = .08$. The first function explained 98.5% of the variance, canonical $R^2 = .61$, with vitality and positive affect contributing equal and meaningful loadings (both $r = .89$). Group centroids showed that the first function discriminated between all four groups, with the exception of the competent and related profiles. Specifically, the satisfied group tended to report higher levels of well-being, followed by the related and competent groups, and the unsatisfied group reported the lowest levels of well-being.

Table 2.1
Descriptive Statistics and Bivariate Correlations Among Study Variables

Variable	Range	Mean	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Autonomy	1-7	3.36	1.01	.72	-													
2. Competence	1-7	4.66	1.33	.86	.33**	-												
3. Relatedness	1-7	4.49	1.32	.90	.49**	.50**	-											
4. Vitality	1-7	4.38	1.27	.79	.52**	.52**	.54**	-										
5. Academic Stress [+]	1-5	2.63	0.83	.64	-.30**	-.47**	-.45**	-.37**	-									
6. Positive Affect	1-5	3.39	0.81	.78	.50**	.51**	.57**	.71**	-.42**	-								
7. Negative Affect	1-5	1.86	0.66	.71	-.12**	-.34**	-.53**	-.24**	.44**	-.18**	-							
8. External Avoidance	1-7	4.49	1.46	.71	-.11**	-.11**	-.11*	-.11**	.13**	-.07	.21**	-						
9. External Approach	1-7	4.41	1.31	.74	.26**	.35**	.26**	.30**	-.17**	.36**	-.02	.35**	-					
10. Introjected Avoidance	1-7	4.10	1.42	.86	.24**	.19**	.23**	.26**	-.11**	.28**	.09*	.24**	.43**	-				
11. Introjected Approach	1-7	3.93	1.31	.79	.29**	.37**	.31**	.36**	-.20**	.38**	-.00	.19**	.66**	.65**	-			
12. Identified Regulation	1-7	4.81	1.44	.71	.42**	.46**	.48**	.45**	-.32**	.51**	-.16**	-.05	.39**	.43**	.49**	-		
13. Pupil Attentiveness	1-6	4.77	0.91	.77	.04	.12**	.12**	.16**	-.09*	.19**	-.09*	-.01	.13**	.15**	.17**	.20**	-	
14. Pupil Achievement	1-6	4.29	0.89	.83	.07	.25**	.15**	.18**	-.15**	.22**	-.16**	-.06	.11*	.10*	.12**	.16**	.57**	-

Note: *p<.05. **p<.01. [+] Factor analysis revealed one problematic item for this factor which was removed to increase internal consistency.

Table 2.2
Euclidian Distances From Hierarchical Cluster
Analysis

Number of Clusters	Fusion coefficient
1	2647.46
2	1605.08
3	1286.11
4	1086.30
5	956.93
6	862.90
7	786.65

Table 2.3
Comparison of Profile Groups Based on Psychological Need Satisfaction Mean Scores,
with F values and effect sizes.

	Dissatisfied	Satisfied	Competent	Related	F	η_p^2
Autonomy	2.70	4.37	3.01	3.96	149.168[*]	**.44**
Competence	3.24	6.14	5.41	4.42	437.310[*]	**.69**
Relatedness	3.31	5.94	4.24	5.33	262.727[*]	**.58**

Note. All measures were rated on a 7-point scale. All profile means for each psychological need were significantly different across groups (p < .01) using Tukey's honestly significant difference test. [*]p <.001

Table 2.4
Group Differences in Mean Scores for all Outcome Variables with SD's, F values and effects sizes.

Variable	1. Dissatisfied Mean	SD	2. Satisfied Mean	SD	3. Competent Mean	SD	4. Related Mean	SD	F	η_p^2
Vitality	3.55 [2,3,4]	1.06	5.56 [1,3,4]	0.98	4.38 [1,2]	1.06	4.61 [1,2]	1.06	89.379[**]	.32
Positive Affect	2.82 [2,3,4]	0.76	4.06 [1,3,4]	0.53	3.46 [1,2]	0.63	3.57 [1,2]	0.63	88.633[**]	.31
Academic Stress	3.22 [2,3,4]	0.76	2.17 [1,3]	0.74	2.49 [1,2]	0.72	2.38 [1]	0.63	64.158[**]	.25
Negative Affect	2.18 [2,3,4]	0.71	1.64 [1]	0.57	1.80 [1]	0.61	1.69 [1]	0.57	23.843[**]	.11
External Avoidance	4.61 [2]	1.40	4.08 [1]	1.57	4.53	1.51	4.58	1.35	3.490[*]	.02
External Approach	3.76 [2,3,4]	1.32	5.01 [1,4]	1.27	4.65 [1]	1.12	4.53 [1,2]	1.17	29.235[**]	.13
Introjected Avoidance	3.63 [2,3,4]	1.35	4.59 [1]	1.52	4.23 [1]	1.29	4.24 [1]	1.40	12.357[**]	.06
Introjected Approach	3.28 [2,3,4]	1.17	4.60 [1,3,4]	1.32	4.13 [1,2]	1.19	4.03 [1,2]	1.24	31.402[**]	.14
Identified	3.88 [2,3,4]	1.21	5.84 [1,3,4]	0.86	4.97 [1,2]	1.58	5.07 [1,2]	1.05	62.800[**]	.25
Attentiveness	4.63	0.97	4.84	0.93	4.86	0.91	4.81	0.80	2.417	.01
Achievement	4.03 [2,3]	0.86	4.54 [1,4]	0.96	4.46 [1]	0.85	4.23 [2]	0.84	10.477[**]	.05

Note. Numerical superscripts indicate statistically significant differences (p <.05) between the respective profiles for each given variable, based on Tukey's honestly significant difference test. [*]p <.05. [**]p <.001.

Ill –Being. MANOVA revealed a significant difference across the four psychological need profiles, $F(6, 1160) = 32.30$, $p < .001$; Wilk's $\Lambda = 0.73$, partial $\eta^2 = .14$. Discriminant analysis revealed two discriminant functions, however the second function did not significantly differentiate the pupil clusters, $\Lambda = 0.99$, $\chi^2 = 0.68$, $p = .71$. The first explained 99.7% of the variance, canonical $R^2 = .52$, with academic stress loading more predominately (academic stress, $r = .97$; negative affect, $r = .58$). This first function discriminated between all four groups, with the exception of the competent and related profiles. Specifically, the unsatisfied group tended to report higher levels of ill-being, followed by the related and competent groups, and the satisfied group reported the lowest levels of ill-being.

Motivation. MANOVA revealed a significant difference across the four psychological need profiles, $F(15, 1598) = 15.37$, $p < .001$; Wilk's $\Lambda = 0.69$, partial $\eta^2 = .12$. Discriminant analysis revealed three discriminant functions, however, removing the first function indicated that the combination of the second and third functions did not differentiate the pupil clusters, $\Lambda = 0.98$, $\chi^2 = 6.60$, $p = .58$, nor did the third function independently ($\Lambda = 0.99$, $\chi^2 = 2.55$, $p = .47$). The first function explained 97.5% of the variance, canonical $R^2 = .56$. Identified regulation and both approach motives loaded predominately (identified, $r = .85$; introjected approach, $r = .60$; external approach, $r = .57$; introjected avoidance, $r = .38$; external avoidance, $r = -.16$). This first function discriminated between all four groups, with the exception of the competent and related profiles. Specifically, the satisfied group tended to report higher levels of motivation, followed by the competent and related groups, and the unsatisfied group reported the lowest levels of motivation.

Discussion

The purpose of this study was to use a person-centred approach to determine different pupil profiles based upon satisfaction of BPNT's psychological needs for autonomy, competence, and relatedness. BPNT maintains that satisfying pupils' innate psychological

needs is essential for optimal psychological development and functioning (Deci & Ryan, 2000; 2011). The present analyses was used to explore the processes associated with psychological need satisfaction from a holistic angle by investigating the complex interplay between the three psychological needs. In accordance with this proposal, four distinct psychological need satisfaction profiles were identified, each displaying different associations with well-being, ill-being, motivation, and performance outcomes. Conceptually, these findings further confirm the importance for all three needs to be satisfied by focusing on the individual pupils rather than each need as a separate variable. Taking a more applied outlook, this person-centred approach may offer a valuable platform for facilitating pupil academic performance and psychological well-being by alluding to pupils that may have specific psychological need deficits.

The Composition of Pupil Profiles

The cluster-analytic results revealed that pupils can exist in classrooms with markedly different psychological need compositions. In support of hypothesis 1a, the highest levels of satisfaction for each psychological need were reported by the satisfied group. No other pupil group displayed higher satisfaction in any one need. Building on previous evidence regarding the balanced satisfaction of all three needs (Sheldon & Niemiec, 2006), the present findings highlight that the optimal satisfaction of each psychological need may require the high satisfaction of the other two needs. For instance, the competent group did not report as high competence as the satisfied group when experiencing deficits in their autonomy and relatedness satisfaction. Although these competent pupils may feel they could do the work, they may be unlikely to experience optimal competence satisfaction in contexts where they lack volition and close emotional support. Pupils in the related group experienced close supportive bonds but to a lesser degree than the satisfied group, when only reporting moderate competence and autonomy satisfaction in classrooms.

Table 2.5
Group Centroid Values for Well – Being, Ill-Being, Motivation and Classroom Performance Composites

Pupil Profiles	Function		
	1	2	**3**
Teacher-Rated Performance			
Dissatisfied	-.30	-.04	**-**
Satisfied	.29	-.05	**-**
Competent	.19	.02	**-**
Related	-.09	.09	**-**
Well-Being			
Dissatisfied	-.93	-.07	**-**
Satisfied	1.19	-.12	**-**
Competent	.05	.11	**-**
Related	.27	.06	**-**
Ill-Being			
Dissatisfied	.85	.00	**-**
Satisfied	-.68	.03	**-**
Competent	-.21	.02	**-**
Related	-.39	-.06	**-**
Motivation			
Dissatisfied	-.86	-.05	**.00**
Satisfied	.97	-.12	**.00**
Competent	.19	.08	**-.08**
Related	.17	.09	**.11**

In accord with hypothesis 1b, the lowest levels of satisfaction for each psychological need were reported by the dissatisfied group which reported low satisfaction across all three needs. When experiencing a dearth of satisfaction across all three needs, pupils may develop deleterious self-beliefs, such as the degrading of themselves and others (Ryan & Deci, 2000). The development of such maladaptive beliefs may magnify pupils' feelings of coercion, incapableness and lack of support from teachers and classmates. For instance, no other group reported lower satisfaction than the dissatisfied group in any one need. Although each psychological need is conceptually distinct and can be experienced uniquely, the current person-centred findings emphasise that there may be synergy between the three needs with optimal psychological need satisfaction requiring the satisfaction of all three needs in unison.

The value of a person-centred methodology is that it is able to uncover patterns that may exist between the clustering variables (Bergman & Andersson, 2010). It was somewhat unexpected that autonomy represented the least satisfied need within each respective profile. Even in the satisfied group, autonomy satisfaction was reported to a lower degree than competence and relatedness satisfaction. School classrooms represent compulsory contexts that pupils have to attend, yet evidence has shown that pupils can experience high autonomy satisfaction when they perceive the classroom to be autonomy supportive (e.g., Cheon & Reeve, 2015). The present pattern of autonomy satisfaction may be an indication that the schools in the present sample may not effectively nurture pupils' autonomy satisfaction within the classroom. These schools may benefit from teacher interventions to help educate teachers on how to effectively support pupils' autonomy at school (e.g., Cheon & Reeve, 2013; Reeve et al., 2004).

An alternative explanation for these lower levels of autonomy satisfaction may be underpinned by the measurement of autonomy in the present study. The concept of autonomy is posited to be multi-faceted in nature, consisting of aspects of perceived choice, volition (i.e. psychological freedom) and locus of causality (i.e. authorship of behaviour; Reeve, Nix, & Hamm, 2003). The majority of the items measuring autonomy in the present study focus on pupils' sense of perceived choice for school activities rather than their volitional participation in these activities. Pupils will likely understand that they do not have free choice over compulsory school activities which may potentially explain why autonomy satisfaction was the lowest need in each profile. This is not to say that perceived choice cannot enhance pupils' autonomy. Previous literature has illustrated that autonomy enhancing choice needs to be explained and offered in a way that is personally relevant to pupils and in line with their interests and goals (e.g., Assor et al., 2002; Katz & Assor, 2007; Stefanou, Perencevich, DiCintio & Turner 2004). For example, pupils being allowed choice over how they go about

solving a certain task or how they present their work may foster their autonomy satisfaction. In contrast, pupils that are provided choice over compulsory school activities may still feel forced to do these activities and thus will not experience autonomy satisfaction (i.e. option choice; Reeve et al., 2003). Future replications of the present study may need to ensure that the measure of autonomy taps directly into pupils' volition and behavioural ownership as opposed to their behavioural choice for school activities.

Group Differences in Classroom Performance, Motivation, Well-Being and Ill-Being

As proposed by hypothesis 2a, the satisfied group displayed the most adaptive outcomes. This group was rated the highest in classroom performance by their teachers, reported the highest well-being and autonomous motivation, and lowest levels of ill-being. In other words, these pupils seem more likely to value classroom activities, be more attentive, experience positive feelings and energy and ultimately perform better in class. These findings are concordant with BPNT evidence that have shown pupil psychological need satisfaction is associated with pupil well-being (e.g., Tian, Chen, & Huebner, 2014), social functioning (e.g., Ratelle & Duchesne, 2014; Saeki & Quirk, 2015), autonomous motivation (e.g., Standage et al., 2005), engagement (e.g., Opdenakker & Minnaert, 2014) and school achievement (Badri et al., 2014). The present evidence adds additional validity to these variable-centred findings, highlighting that pupils reporting a satisfied psychological need profile will function better psychologically and academically in classrooms.

In contrast to the satisfied group, the dissatisfied group were rated the lowest in classroom performance by their teachers, reported the lowest levels of well-being and autonomous motivation, and experienced the highest levels of ill-being. These pupils seem more likely to de-value classroom activities, achieve poorer performance, experience classrooms as highly stressful and negative contexts, and be void of positive feelings and energy. These associations confirm hypothesis 2b, and are in line with BPNT proposals of the

darker side of pupil functioning associated with a lack of psychological need satisfaction (Vansteenkiste & Ryan, 2013). Previous evidence has found that need dissatisfaction, or worse need frustration, to be associated with deleterious outcomes of ill-being (Bartholomew et al., 2011), anger (Hein, Koka, Hagger, 2015), controlled motivation (Haerens et al., 2015), unsatisfying learning experiences (Jang et al., 2009) and school disengagement (Jang et al., 2016). The present person-centred findings emphasise that pupils experiencing a dissatisfied profile, which has low satisfaction in all three psychological needs, will struggle psychologically and academically in classrooms. Of concern for the schools in the present sample, nearly a third of pupils in the sample displayed this unfavourable type of profile. From a teaching perspective, this group may represent the greatest risk for classroom disruption, emotional outbursts, or school disengagement (Hein et al., 2015; Jang et al., 2016).

The competent and related groups, that were relatively high in only one need, reported similar but moderate outcomes of well-being, motivation and ill-being. Thus, it seems that the high satisfaction of one need may compensate for deficits in other needs and allow pupils to experience some positive feelings, autonomous motivation and slight reductions in ill-being. Still both these groups showed substantially less adaptive outcomes than the satisfied group. The exception being in teacher rated performance, whereby the competent group were rated higher than the related group and only marginally lower than the satisfied group. Thus similar to prior evidence (Hardre & Reeve, 2003; Jang, et al., 2009), groups higher in competence satisfaction seemed to be rated higher in classroom performance. It should be noted that the effect size for the group differences in classroom performance were small which may indicate that classroom performance is influenced by additional factors other than psychological need satisfaction. Extending the work by Sheldon and Niemiec (2006), the less adaptive outcomes of the related and competent groups, compared to the satisfied group, accentuate the necessity

for pupils to not only experience equal satisfaction in all three needs but that this satisfaction is high in quantity.

In regards to the proposal that no group would display adaptive outcomes if reporting low competence satisfaction (hypothesis 3), it is notable that the dissatisfied group's score in competence satisfaction was the furthest below the overall mean score. The satisfaction of pupil competence has been shown an important psychological need for academic grades (Jang et al., 2009), pupil effort (Taylor & Lonsdale, 2010) and school well-being (Véronneau et al., 2005). In this regard, the competent group were still able to report moderate levels of adaptive outcomes despite particularly low levels of autonomy. It is striking that nearly two thirds of the present pupil sample reported a dissatisfied or competent profile. Neither group reported particularly high autonomy or relatedness satisfaction but revealed large differences in competence satisfaction. This suggests that, for many pupils in the present sample, school classrooms are not environments in which they experience volition or close supportive relationships. In such contexts, pupils' experiencing a lack of competence satisfaction may be at particular risk of ill-being, none self-determined motivation and poor academic performance. Yet, optimal school functioning will not be facilitated by competence satisfaction alone but requires the accompanying satisfaction of both autonomy and relatedness (see difference between satisfied and competent group).

Implications of Findings

The present study is one the first to use a person-centred methodology to cluster pupils based on all three psychological needs. From a theoretical perspective, these pupil-orientated findings add further validity to the proposition that all three needs are required for optimal psychological development (Deci & Ryan, 2000). Two pupil groups were found to have relatively high levels of satisfaction in a single need but this satisfaction was to a lesser degree than the satisfied group. Although pupils will experience each psychological need

independently, apparent connectivity between the needs may mean that the optimal satisfaction of each need will be experienced when the other two needs are also satisfied. Conversely, the dissatisfaction of each need may be highest when pupils experience a lack of satisfaction in all three needs simultaneously. Thus it seems fundamental that pupils' experience the satisfaction of all three needs, rather than one in isolation, during secondary school (Niemiec & Ryan, 2009).

From an applied perspective, the identification of distinct pupil groups may be informative for future teaching practice within schools. Specifically, the findings may help recognise pupils that have specific psychological need deficits that could be addressed with targeted teaching strategy. For instance, the competent group may require specific autonomy supportive teaching to help enhance their low autonomy satisfaction. Effective autonomy supportive teaching will adopt a tone of pupil understanding and opinion, rather than pressure and teacher-focus (Jang, Reeve, & Halusic, 2016; Smit, Brabander & Martens, 2014). Such environments would welcome pupil opinion and negative expression, offer patience toward pupil learning, avoid controlling language, emphasise the relevance of activities, and only offer choice that is relevant to pupil's personal goals (e.g., allowing them to complete work in a preferred manner; Assor et al., 2002; Katz & Assor, 2007; Reeve, 2016). In addition, teaching strategies that provide structure are central to supporting pupil competence (Connell & Wellborn, 1991). The provision of structure involves clear communication to pupils regarding teacher expectations, how to achieve desired classroom outcomes, and consequences for their behaviour, along with the avoidance of overly critical pupil appraisals (Wang & Eccles, 2013). Given the high prominence of pupils found in the competent group, however, it is important that structure is not provided without autonomy support (Jang et al., 2010). Pupils in the dissatisfied group may also benefit initially from teaching that offers both competence and autonomy support together (e.g., Hospel & Galand, 2016).

The satisfaction of relatedness satisfaction is fostered by teachers offering strategies of interpersonal involvement (Skinner & Belmont, 1993). Involvement strategies concern the degree of emotional support and consideration shown in regards to pupils' feelings and opinions in class. It is important that this involvement is provided not only by the teacher, but is also monitored and encouraged between pupils (Ruzek, Hafen, Allen, Gregory, Mikami, & Pianta, 2016). It is noteworthy that higher reports of autonomy satisfaction coincided with higher reports of relatedness satisfaction across every pupil group (for comparable links between these two needs, see Gillison et al., 2008; Noom et al., 1999). Autonomy supportive teaching comprises aspects similar to involvement strategies, such as interpersonal sentiments that consider pupils' feelings and perspective (Reeve, 2006; 2015). The affiliation between the two needs may indicate that incorporating autonomy supportive strategies may facilitate the satisfaction of pupils' autonomy and relatedness. In summary, optimal pupil need satisfaction will likely occur when teachers offer strategies of both structure and interpersonal involvement in an autonomy supportive manner (e.g., Reeve, 2006).

Limitations and Directions for Future Research

The current findings provide some useful insights that advance the application of BPNT with young adolescent pupils. To avoid reliance on pupil self-report measures, and reduce potential common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), the present study obtained teacher ratings of pupils' classroom attentiveness and achievement. Future work may consider the addition of observed ratings of pupil attentiveness (see Hafen, Allen, Mikami, Gregory, Hamre, & Pianta, 2012) and school recorded attainment grades to provide a more complete assessment of pupils' classroom performance. Furthermore, it is understood that school classrooms are not the only contexts that may influence pupils' psychological needs. Future person-centred BPNT studies could investigate if pupils clustered within specific groups predominately come from similar family

or socio-economic backgrounds. Such investigations may help detect specific pupil types that represent a higher risk for maladaptive psychological need profiles at school.

Conclusions

The present study adopted a person-centred approach, identifying four distinct pupil profiles based upon the satisfaction of their psychological needs of autonomy, competence, and relatedness. The findings not only emphasise that the satisfaction of all three psychological needs are required for optimal pupil development but that the optimal satisfaction of each need may require the satisfaction of the other two need simultaneously. Furthermore, the psychological need for competence may be fundamental to pupils' psychological and academic functioning but that this needs to be accompanied by experiences of relatedness and autonomy satisfaction. The present findings may also provide valuable practical insights into distinct psychological need deficits that some pupils may experience. Educators may need to investigate effective methods to best support pupils' satisfaction of all three psychological needs within school classrooms. Consequently, the profiling of pupils based upon their psychological needs may provide useful insights into the future development of school-based interventions.

Chapter 3

An examination of the role that psychological needs play in the development and summer decay of early secondary school achievement.

Abstract

Sustaining pupils' academic grades is of paramount importance for educators. The existence of a decline in school grades following a summer vacation period has highlighted that pupil grades may typically fluctuate over the course of multiple school years (Alexander et al., 2007). Despite this knowledge, few studies have explored the potential psychological correlates of dynamic school attainment patterns. Grounded by basic psychological need theory, the present longitudinal analysis was used to investigate if pupil differences in the satisfaction of autonomy, competence and relatedness may distinctively explain temporal change and the summer decay of pupil grades. Participants were 378 secondary school pupils from a single comprehensive school in the United Kingdom. Pupils completed self-report questionnaires at five time points across two school years, with school grades collected from official school records. Hierarchal growth modelling revealed that pupil differences in competence satisfaction predicted increases in school grades over the course of the school year. Differences in pupils' relatedness satisfaction at school were found to buffer the summer decay of pupils' school grades. In contrast, autonomy satisfaction did not to predict changes in pupil attainment or the summer decay of school grades. The findings outline distinct processes associated with each psychological need in predicting pupil attainment patterns across different school years. Such evidence may provide valuable insights for educators striving to enhance pupil grades over multiple school years.

Keywords: competence, relatedness, school attainment, summer decay, perceived choice.

The early years of young adolescent schooling can be pivotal in developing pupils'

academic initiative, engagement and attainment (Danielsen, Wiium, Wilhelmsen, & Wold,

2010; Li & Lerner, 2011; Riglin et al., 2013). In particular, the sustainment of early academic

attainment can be fundamental in guiding young adolescents towards flourishing at school

(e.g., Poorthuis et al., 2015). However, ample evidence has emerged of a seasonal pattern in

which school grades typically decline following the summer vacation (Alexander et al., 2001;

Barkoukis et al., 2014; Cooper et al., 1996). The present study investigates why this 'summer

decay' and general temporal patterns might occur by asking whether pupils' school

attainment can be predicted by proposed basic psychological needs. This is important as this

seasonal decline may exacerbate existing attainment gaps between high and average

achieving pupils (Rambo-Hernandez & McCoach, 2015), and pupils from varying socio-

economic backgrounds (Alexander et al., 2007). Identifying potential psychological

correlates of a 'summer decay' and temporal attainment patterns may provide valuable

insights into maintaining early pupil academic attainment.

Basic psychological needs theory (BPNT; Ryan & Deci, 2002) postulates that all

individuals have three innate psychological needs for autonomy, competence and relatedness

that are essential for optimal development and growth. The need for autonomy refers to the

extent one feels a sense of ownership and volition over their behaviour (deCharms, 1968).

The need of competence refers to the experience of being effective within ones' environment

and towards one's own goals (White, 1959). Finally, the need for relatedness refers to the

requirement for close, interpersonal relationships and feelings of connection with significant

others (Baumeister & Leary, 1995). When satisfied these psychological needs have been

found to be the catalyst for self-determined motivation and academic engagement (e.g. Chen,

2014; Opdenakker & Minnaert, 2014; Raufelder et al., 2015; Standage et al., 2005; Taylor &

Ntoumanis, 2007), whereas the frustration of these needs has been shown to lead to amotivation and school disengagement (Haerens et al., 2015; Jang et al., 2016). Thus, pupils are more likely to adaptively function, persist and absorb themselves in school activities when they experience satisfaction of their psychological needs (Niemiec & Ryan, 2009).

In addition to adaptive motivation and affections, the satisfaction of these three psychological needs is also theorised to lead to one's optimal performance (Deci & Ryan, 2000). Indeed, the satisfaction of pupils' psychological needs have been associated with higher school attainment when all three needs were combined into a composite variable (Badri et al., 2014). When considering the role of each need individually, substantial evidence has shown the performing enhancing potential associated with the satisfaction of each need. For example, pupils' competence satisfaction has been linked with better study strategies, the dealing of academic demands and increased effort at school (e.g. Durik, Vida, & Eccles, 2006; Ratelle & Duchesne, 2014; Taylor & Lonsdale, 2010). Likewise, both autonomy and relatedness satisfaction have been associated with increased engagement at school (Furrer & Skinner, 2003; Jang et al., 2012), with relatedness particularly important for help-seeking behaviours at school (Marchand & Skinner, 2007). Collectively, these findings highlight potential mechanisms between the satisfaction of each psychological need and higher school attainment.

Nonetheless, empirical findings regarding the association between each need and actual academic performance are inconsistent. For instance, comparable with other research (e.g., Hardre & Reeve, 2003; Miserandino, 1996), competence satisfaction was shown to consistently predict school grades of Korean pupils in three separate studies (studies 2, 3 and 4; Jang et al., 2009). Yet autonomy satisfaction only predicted grades in one of these studies and relatedness had no association in any of the three studies. Contrary to Jang et al.'s (2009) findings, longitudinal evidence has shown relatedness satisfaction and emotional support to

be been linked with higher future pupil achievement (e.g., Furrer & Skinner, 2003; Song, Bong, Lee, & Kim, 2015). Further studies have revealed greater inconsistencies with autonomy satisfaction as some studies revealed a positive (e.g., study 2; Jang et al., 2009) and others a negative (Isakson & Jarvis, 1999) relationship with school attainment. This negative relationship, however, may be explained by autonomy being conceptualised as pupils' independent decision-making and self-reliance away from parents (Isakson and Jarvis, 1999). Previous literature (e.g., Assor et al., 2002; Katz & Assor, 2007), and indications from the previous chapter, highlighted that perceived choice over behaviour may not be autonomy enhancing, and could even be detrimental to academic and behavioural functioning, if the choice is not meaningful to their goals and personal preferences. From a BPNT perspective, perceived choice will enhance autonomy when it provides pupils with a sense of volition (i.e. psychological freedom) and ownership of their own behaviour (e.g., allowing pupils choice over to complete work in a preferred method; Reeve et al., 2003). In view of these generic inconsistencies, further investigation seems required regarding the relationships between each psychological need and pupil attainment.

Longitudinal examinations between psychological need satisfaction and school attainment are scarce, with most studies focusing on indices of academic engagement (e.g., Marchand & Skinner, 2007; Yu, Li, & Zhang, 2015) or well-being (e.g., Tian, Chen, & Huebner, 2014; Véronneau et al., 2005). One exception found that pupil autonomy satisfaction mid-way through a school semester indirectly predicted pupils' final semester grades as a consequence of higher school engagement; however, this study did not assess competence or relatedness, nor changes in attainment patterns over time (Jang et al., 2012). Based on this limited evidence, the examination of whether the satisfaction of basic psychological needs is associated with change in attainment over a period of time may uncover valuable theoretical and practical insights for the advancement of BPNT in

adolescent schooling. Exploring change is a fundamental element of investigating any dynamic process that is often overlooked, and may be particularly important during young adolescence given the biological and cognitive developments pupils will experience (Steinberg, 2005; Wigfield, Byrnes, & Eccles, 2006). Trajectories in academic attainment represent a useful indicator of children's growth and development that is hypothesised to occur as a result of psychological need satisfaction, as well as being an important educational outcome in its own right (Riglin et al., 2013).

In addition, the present longitudinal study allows the investigation of potential protective properties of psychological need satisfaction in reducing the commonly observed 'summer decay' (e.g. Cooper et al., 1996). Observations of attainment patterns (e.g., Barkoukis et al., 2014) indicate that the summer decay of pupil grades derives from a lengthy vacation away from school. A growing number of studies have illustrated that pupils higher in psychological need satisfaction typically display sustained school engagement (Marchand & Skinner, 2007; Opdenakker & Minnaert, 2014; Yu et al., 2015) and better academic adjustment over time (Ratelle & Duchesne, 2014). Yet no BPNT study has explored if pupils experience of psychological need satisfaction may help reduce the summer decay of grades, despite substantial evidence of its existence. Previous authors have insinuated that time within school may play a compensatory role in bridging disparities that may exist between pupils outside school (e.g., low socio-economic status; Downey, Hippel, & Broh, 2004). Specifically, pupils' feelings of connectedness at school have been shown to buffer delinquent behaviour associated with negative family relations (Loukas, Roalson, & Herrera, 2010), as well as offering a protective resource against poor social and academic adjustment (Baker, 2006). Furthermore, both autonomy and relatedness satisfaction but not competence were found predictive of pupils' quality of life during the transition between the elementary and middle school (Gillison et al., 2008). Such evidence suggests that pupils' experience of

autonomy and relatedness satisfaction may help their academic and behavioural functioning even after a period away from school or aversive contexts outside of school. It is still unclear, however, if these protective mechanisms translate to the summer decline in school grades. Given the prominence for schools to reduce attainment deteriorations, investigating if the satisfaction of psychological needs at school reduce the summer decline of pupil grades may prove valuable for sustaining pupil attainment over multiple years.

Study Overview

The current study aims to enhance understanding of the potential underlying psychological correlates for a 'summer decay' and more general changes in academic attainment. Specifically, the present research represents one of the first longitudinal investigations of how pupil differences in autonomy, competence and relatedness satisfaction may predict changes in objective school attainment (i.e., school grades). In the first instance, it was sought to clarify that a summer decay and general variance in attainment existed within the present sample. Next, the investigation explored if pupil differences in each psychological need explained changes in school attainment patterns over a two year period that included a summer vacation period.

Based on previous cross-sectional evidence (Miserandino, 1996; Hardre & Reeve, 2003), it is proposed that pupils' competence satisfaction may be important in predicting increases in pupils' school grades over the course of the study (hypothesis 1). Equally, previous findings have shown relatedness satisfaction to predict future academic grades (Furrer & Skinner, 2003). Thus it is proposed that relatedness satisfaction may also predict increases in school grades (hypothesis 2). In regards to autonomy, previous evidence has shown autonomy satisfaction to predict future school grades, albeit indirectly via school engagement (Jang et al., 2012). Extrapolating from this evidence, it is hypothesised that autonomy satisfaction may also predict increases in school grades over time (hypothesis 3).

With this said, the measurement items for autonomy in this study replicate those used in Chapter 2 and predominately tap into pupils' perceived choice for school activities. In light of the negative relations found between autonomy and attainment (e.g., Isakson & Jarvis, 1999), it may be that the current measure of autonomy has no or negative relations with school grades over time.

No analysis to date has been used to explore the relationship between pupils' psychological needs and the summer decay in pupil attainment, and therefore specific hypothesis are difficult to determine. Extrapolating on previous evidence regarding the buffering qualities of school connectedness (e.g., Baker, 2006; Loukas, Roalson, & Herrera, 2010), and the importance of relatedness and autonomy for pupils' school transitions (e.g., Gillison, et al., 2008), it may be that both autonomy and relatedness satisfaction help reduce the summer decay of school grades following a summer vacation. This is speculative at this stage and will be investigated directly in the present research. Taken in its entirety, the present study aims to provide a thorough examination of the extent pupil differences in psychological need satisfaction can predict the dynamic trajectories of school attainment over two school years.

Method

Participants

Participants in the study were 378 secondary school pupils (208 male; 170 female; mean age = 12.11 years, SD = 0.90 years, age range = 11 – 14 years), from a state-funded, selective school in the United Kingdom. All pupils were in either Year 7 (n=292) and 8 (n=86). Ethnicity was predominately White English (87%), with Asian (4%), Arabic (1%), Black African (5%), and other (3%). Nineteen pupils had English as an additional language, rather than their native language. Across the sample, 130 pupils (34%) were registered as having a specified Special

Education Need (e.g. learning difficulty; Autistic Spectrum Disorder; behaviour, emotional and social difficulties).

Procedure

Full ethical approval was obtained from the principal researcher's university ethics committee. The study was conducted over a year and a half, across two different academic years. The study involved five separate data collections. The first data collection was conducted in the final term of the first academic year and, therefore, these pupils were available for the full five time points. Subsequent to the summer vacation, pupils from a new pupil cohort joined at the beginning of the next academic year, and were available for four data collections. These additional students account for the increase in pupil numbers between time points 1 and 2 (see Table 3.1). Data at time point 2 was collected six weeks into the new academic year, following the summer holiday, to allow pupils to accustom themselves with the school and complete early school assignments. The remaining three data collections were conducted at the end of each school term in the second academic year (i.e. the winter, spring, and summer terms).

Prior to the study commencing, parental opt-out forms provided to enable parents to indicate if they did not wish for their child to participate (see Appendix I). Four parents opted their child out of the study. Pupils were provided with details of the study, both verbally and in writing, and provided written assent to confirm their willingness to participate (see Appendix J). Pupil questionnaires were administered by the principal researcher at the beginning of a school lesson and collected in the same lesson, taking approximately ten minutes to complete (see Appendix K). To avoid potential over-estimation associated with self-report data, particularly with lower ability pupils (Kuncel, Crede, & Thomas, 2005), school records of pupil grades were obtained at each time point.

Measures

    Autonomy. Autonomy was measured using six items (e.g. "I have a say regarding what skills I want to learn") derived from previous research with young adolescents (Standage et al., 2005). The stem used was, "When at school . . .", and responses were rated on a 7 point scale, ranging from 1 (not at all true) to 7 (very true). This six item questionnaire has demonstrated good internal consistency (α = .80; Standage et al., 2005).

    Competence. Competence was measured using five items (e.g. "I think I am pretty good at activities in this class") from the Perceived Competence subscale of the Intrinsic Motivation Inventory (McCauley et al., 1989). Items were adapted to a school context, rather than generic activities. For example, "I am satisfied with my performance at this task" was modified to "I am satisfied with my performance at school". Responses were rated on a 7 point scale, ranging from 1 (not at all true) to 7 (very true). The original subscale demonstrated good internal consistency (α = .84; McCauley et al., 1989).

    Relatedness. Relatedness was measured using the five item Acceptance subscale of the Need for Relatedness Scale (Richer & Vallerand, 1998). The stem used was, "When at school, I feel . . ." followed by the relevant items (e.g. "listened to", "understood", "supported,"). Responses were rated on a 7 point scale, ranging from 1 (not at all true) to 7 (very true). The original scale demonstrated good internal consistency (α = .85-.94; Richer & Vallerand, 1998).

    School Attainment. Pupils' termly grades for the core subjects of English, Maths and Science were obtained from official school records. Pupils were graded based upon a numeric achievement level, ranging from the lower Level 1 up to the higher Level 8. Pupils that had transitioned into Year 9 by the end of the study were then graded based upon 8 letter grades (i.e. A[*], A, B, C, D, E, F, U). To standardise all pupil attainment, all letter grades were

converted to the respective numeric level (i.e. $A^* = 8$; $U = 1$). Pupil's scores across the three subjects were then averaged to create an overall school attainment composite for each pupil.

Data Analysis

Using MLwiN software (version 2.31: Rashbash, Steele, Browne, & Goldstein, 2014), hierarchical growth modelling was conducted to test whether psychological need satisfaction predicted changes in attainment. Hierarchical growth modelling is well-suited for longitudinal analysis, given that repeated measures of need satisfaction and attainment (time varying Level 1) were nested within pupils (time invariant Level 2; Curran & Bauer, 2011; Peugh, 2010). Prior to hypothesis testing, separate intercept-only models were constructed for all study variables (i.e. no predictor variables) to calculate the explained variance in each variable at both levels (i.e., intraclass correlation coefficients; Hox, 2010). Next, unconditional growth models were constructed to clarify the existence of linear changes in pupil attainment and summer decay. General linear changes in attainment were modelled using a linear time variable centred on the first time point (i.e. equal to zero). Step changes in attainment over the summer vacation (i.e., summer decay) were modelled by including a binary variable where 0 represented attainment before the summer break and 1 represented attainment after the summer vacation. The intercept of these growth models could be interpreted as attainment at the beginning of the study, with the two slope coefficients representing linear and summer changes in attainment, respectively. The slope coefficients were considered as fixed (i.e., changes in attainment are uniform across the sample) and random effects (i.e., changes in attainment differs across the sample).

Conditional growth models were then constructed to test if satisfaction of each psychological need could explain changes in school attainment. This was achieved by adding time × need satisfaction interactions, and the associated main effect, to the unconditional growth models described above. The influence of each psychological need on linear change

and summer decay were explored separately and then simultaneously, leading to a total of nine models. In other words, three models for each need; one including × time interaction, another including × summer interaction, and a final model including interactions with both conceptualisations of change. Pupils' psychological need satisfaction was averaged across time and grand mean centred (Enders & Tofighi, 2007). This provided an accurate estimation of whether individual differences in psychological need satisfaction predict intra-individual changes in attainment (Raudenbush & Bryk, 2002). As the first time point was centred at a value of zero, mean psychological need satisfaction could be interpreted as predicting attainment at the beginning of the study. Discovery of a significant interaction was followed up by a simple slope analysis (Preacher, Curran, & Bauer, 2006) to plot the extent of the slope variations using values 1 standard deviation above and below the mean of each predictor (Cohen, 1983). In the event of multiple significant interactions, differences in - 2*log likelihood values and chi-squared distribution were calculated to identify the best fitting model to plot (Rashbash, et al., 2014).

Results

Completion Rate

Of the full sample, 27 pupils (7%) provided data for all five time-points; 249 pupils (66%) completed four time-points; 63 pupils (17%) completed three time-points; 21 pupils (6%) completed two time points, and 18 pupils (5%) completed one data collection. In general, participants did not participate at a time point due to absence, rather than a refusal to participate. Nevertheless, an advantage of hierarchical growth modelling is that it is able to manage unbalanced data sets and therefore does not require equal number of participant responses at each time point.

Descriptive Statistics

For information, means, standard deviations, Cronbach's alpha coefficients, and intraclass correlations (ICCs) for all measurement scales at each time point are presented in

Table 3.1. Cronbach's alpha coefficients for all self-report variables demonstrated acceptable internal consistency. Intercept only models revealed that between 35 and 66% of variance in the study variables were attributable to pupils' interpersonal differences (therefore, between 34 and 65% of the variance was attributable to pupils' intrapersonal change). This indicates that variance exists at both levels and justifies our use of multilevel modelling (Curran & Bauer, 2011). For information and possible future meta-analytic analysis, Table 3.2 shows the bivariate correlations between the study variables across all five time-points.

Trajectories of Change in School Attainment

Table 3.3 shows the results of unconditional growth models and depicts change in attainment. School attainment generally increased over the course of the study and this trend was uniform across our sample. Attainment also decreased on average following the summer holidays, but some pupils declined more than others. As depicted in Figure 1, this clarifies the existence of linear changes in attainment and a summer decay (i.e. at time point 2 following the summer holiday) in our sample.

Does Psychological Need Satisfaction Explain Growth in Attainment and Summer Decay?

Table 3.3 depicts the interactions with time and summer break, and respective main effects, for each psychological need. Mean differences in competence satisfaction were found to significantly predict school attainment at the start of the study. Confirming hypothesis 1, differences in competence satisfaction were found to significantly predict linear changes in attainment over the course of the study but did not explain the summer decay of attainment grades following the summer vacation. Simple slopes analysis for the competence × time interaction is illustrated in Figure 2, revealing pupils higher in competence satisfaction performed better and demonstrated greater increases in attainment over the course of the school year (high competence satisfaction: $b = .0.161$, $p < .001$; low competence satisfaction: $b = 0.111$, $p = < .001$). Separate significant time and summer interactions were found with

relatedness satisfaction, but only the × summer interaction remained significant when both interactions were included simultaneously. Differences in -2*log likelihood values revealed that inclusion of both interactions did not yield a better fitting model and illustrated relatedness × summer interaction model to be the best model. Figure 2 shows the simple slopes analysis of this interaction. Partly confirming hypothesis 2, pupils higher in relatedness satisfaction did show increases in attainment over time but that this was due to demonstrating less deterioration in school grades following the summer vacation (high relatedness satisfaction: b = -0.4733, p < .001; low relatedness satisfaction: b = -0.9207, p < .001). Simple slopes analysis of this interaction is depicted in Figure 3. Refuting hypothesis 3, however, autonomy satisfaction was found not predict school attainment at the beginning of the study or explain the linear change and summer decay of school grades.

Table 3.1

Descriptive Statistics, Cronbach Alpha's and Intraclass Correlations Coefficients (ICCs)

Variable	Range	Time 1 (n=183)			Time 2 (n=241)			Time 3 (n=327)			Time 4 (n=331)			Time 5 (n=298)			ICC
		M	SD	α	M	SD	α	M	SD	α	M	SD	α	M	SD	α	
Self-Report Data																	
Autonomy	1-7	3.93	1.10	.66	3.92	1.07	.64	3.68	1.11	.72	3.57	1.16	.77	3.58	1.13	.80	**.50**
Competence	1-7	5.16	0.97	.71	4.97	1.01	.68	4.99	1.01	.75	4.70	1.06	.75	4.79	1.08	.80	**.50**
Relatedness	1-7	4.74	1.35	.86	4.84	1.19	.80	4.52	1.26	.85	4.10	1.37	.87	4.20	1.37	.90	**.55**
School Record Data																	
Attainment	1-8	4.98	1.01	-	4.49	0.68	-	4.57	0.99	**-**	4.77	0.89	-	4.92	0.98	-	**.66**

Note. Cronbach Alpha's could not be computed for school recorded data on attainment.

Table 3.2

The Distribution of Bivariate Correlations Between Study Variables Across All Time Points

	1	2	3	4	5
1. Autonomy	-				
2. Competence	$.41^{**} \sim .55^{**}$	-			
3. Relatedness	$.55^{**} \sim .68^{**}$	$.48^{**} \sim .60^{**}$	-		
4. Attainment	$-.03 \sim .15^{*}$	$.14^{**} \sim .35^{**}$	$-.11 \sim .30^{**}$	$-.43^{**} \sim -.26^{**}$	-

Note. $^{*}p<.05.$ $^{**}p<.01.$

Table 3.3.
Psychological Needs - Attainment Relations – Interactions With Time & Summer Break

	Competence Interactions						Relatedness Interactions						Autonomy Interactions					
	Time		Summer		Both		Time		Summer		Both		Time		Summer		Both	
	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
Fixed Effects																		
Intercept	5.01	0.07**	5.01	0.07**	5.01	0.07**	5.02	0.07**	5.00	0.07**	5.00	0.07**	5.02	0.07**	5.02	0.07**	5.02	0.07**
Time	.14	0.01**	.14	0.01**	.14	0.01**	.14	0.01**	.14	0.01**	.14	0.01**	.14	0.01**	.14	0.01**	.14	0.01**
Summer	-.71	0.08**	-.71	0.08**	-.71	0.08**	-.72	0.08**	-.70	0.08**	-.69	0.08**	-.72	0.08**	-.72	0.08**	-.72	0.08**
Mean Competence	.27	0.05**	.37	0.09**	.39	0.09**	-	-	-	-	-	-	-	-	-	-	-	-
Mean Relatedness	-	-	-	-	-	-	.05	0.04	-.08	0.06	-.08	0.06	-	-	-	-	-	-
Mean Autonomy	-	-	-	-	-	-	-	-	-	-	-	-	.03	0.05	-.03	0.08	-.03	0.08
Competence × Time	.03	0.01**	-	-	.03	0.01**	-	-	-	-	-	-	-	-	-	-	-	-
Relatedness × Time	-	-	-	-	-	-	.02	0.01*	-	-	.01	0.01	-	-	-	-	-	-
Autonomy × Time	-	-	-	-	-	-	-	-	-	-	-	-	.01	0.01	-	-	.01	0.01
Competence × Summer	-	-	-.10	0.09	-.16	0.09	-	-	-	-	-	-	-	-	-	-	-	-
Relatedness × Summer	-	-	-	-	-	-	-	-	.20	0.07**	.18	0.07**	-	-	-	-	-	-
Autonomy × Summer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.09	0.08	.08	0.09
Random Effects																		
Intercept	.78	0.09**	.77	0.09**	.78	0.09**	.87	0.10**	.84	0.10**	.84	0.10**	.86	0.10**	.86	0.10**	.86	0.10**
Slope (Time)	.00	0.00	.01	0.00	.00	0.00	.00	0.00	.01	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00
Slope (Summer)	.92	0.15**	.90	0.15**	.90	0.15**	.93	0.15**	.90	0.15**	.89	0.15**	.92	0.15**	.92	0.15**	.92	0.15**
Level 1 Error	.12	0.01**	.12	0.01**	.12	0.01**	.12	0.01**	.12	0.01**	.12	0.01**	.12	0.01**	.12	0.01**	.12	0.01**
-2*log likelihood	2391.27		2396.64		2388.47		2428.34		2422.75		2421.35		2434.41		2433.86		2433.64	

Note. *p<.05, **p<.001
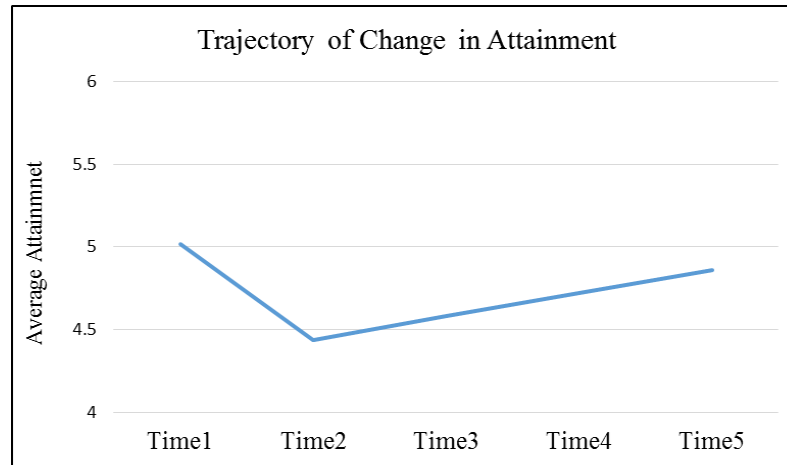
Figure 1. Trajectory of change in average pupil attainment patterns over time and following the summer break (i.e. at time point 2).
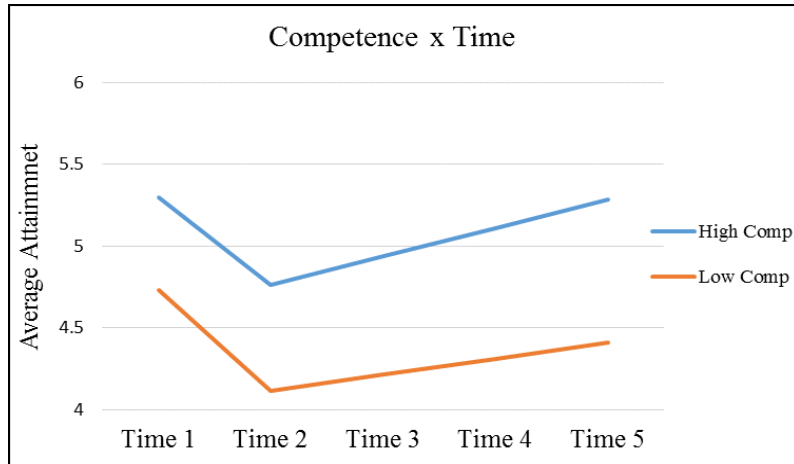
Figure 2. Pupil differences in competence satisfaction predicting changes in school attainment across the course of the study.
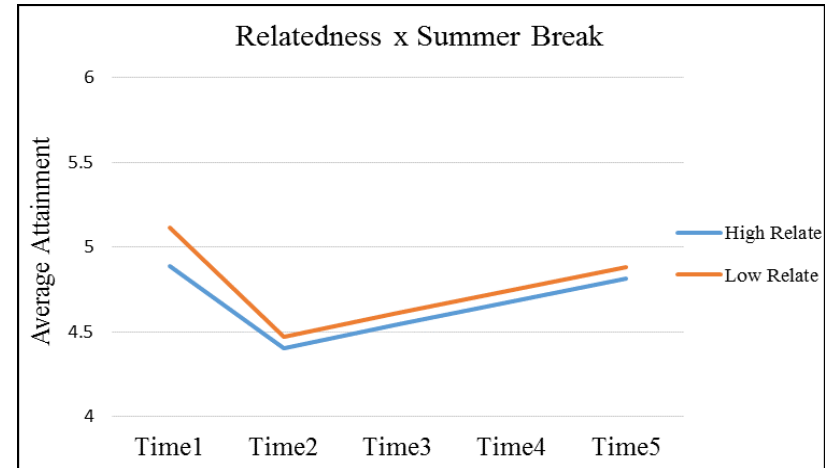
Figure 3. Differences in pupil relatedness satisfaction predicting changes in school attainment over the course of the summer break.

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Discussion

The present study provides a longitudinal examination of how interpersonal differences in the satisfaction of pupils' autonomy, competence and relatedness may predict temporal attainment patterns, as well as buffer against an apparent summer decay (Cooper et al., 1996). Similar to previous attainment patterns (Barkoukis et al., 2014), pupil grades in the present study were found to gradually increase over the school year but showed evidence of a summer decay at the start of the new academic year (Downey et al., 2004). Our findings expand previous knowledge (e.g., Alexander et al., 2001), illustrating that competence satisfaction may be the driving impetus for pupil increases in school grades over the course of the school year but that these effects may not buffer against the summer decay of attainment. Although pupils' relatedness satisfaction may lead to increased attainment over time, this seems to derive from protective properties that shield pupils' against substantial deterioration in school grades over a summer vacation. These findings provide insights into how differences in pupils' psychological need satisfaction may differentially explain dynamic trajectories in pupil's academic attainment and the summer decay of school grades.

The present findings revealed that pupils higher in competence satisfaction achieved higher grades at the beginning of the study and showed greater increases in their grades throughout the school year. Extending previous findings (e.g., Jang et al., 2009), the satisfaction of competence seems to be associated with higher and increasing academic achievement. Sharing conceptual similarities as achievement motivation (e.g. Linnenbrink-Garcia & Fredricks, 2008), pupils' competence satisfaction has been associated with better dealing of academic demands at school (Ratelle & Duchesne, 2014), more adaptive study strategies (e.g., Durik, Vida, & Eccles, 2006), and higher school effort (Taylor & Lonsdale, 2010). Such behaviours may help pupils progress in their academic attainment over the course of the school year. It is noteworthy that even pupils low in competence satisfaction

still demonstrated increases in their grades over the school year (see Figure 2). Given the achievement orientated nature of schools, it seems all pupils may be liable to improve academically over the course of the school year regardless of their competence satisfaction. This finding is somewhat encouraging for the present school as pupils may naturally improve academically through their progression at school. Alternatively teachers may have a tendency to mark pupils' work progressively higher over the course of the school year. This natural attainment increase should be taken into account when interpreting the present findings as there may be additional factors other than perceived competence that may predict increases in school grades.

Similar to cross-sectional evidence (e.g., Jang et al, 2009), higher relatedness satisfaction was found not to predict school grades at the beginning of the present study but did evidence temporal increases over time. Specifically, the present findings revealed pupils higher in relatedness displayed slightly less of a decline in their school grades following the summer vacation. Although the difference in this reduction was minimal in size (i.e. $< .02$ in school grade average). Nevertheless, it would appear that relatedness satisfaction may bring about temporal benefits for school grades following pupils' summer vacation away from school. Previous findings have evidenced that close interpersonal school bonds can negate maladaptive effects of negative family relations and school transitions (Gillison et al., 2008; Loukas, et al., 2010). Pupil feelings of relatedness and supportive bonds at school have been associated with positive affections for school (e.g., Gest, Welsh, & Domitrovich, 2005), increased help-seeking behaviours (Marchand & Skinner, 2007), increased school engagement (Furrer & Skinner, 2003), and protections against maladaptive academic achievement (Baker, 2006). Pupils that feel accepted at school may be more likely to strive to meet the expectations of school and seek help from close supportive social group, either over the summer holiday or once they return to school. Conversely, pupils lacking school

relatedness may potentially strive to detach themselves from negative feelings of school and be less likely to seek help once returning to school after the summer holidays. Although a natural summer deterioration may be expected simply due to pupils' absence from school, the finding that relatedness satisfaction may buffer this attainment decline may be invaluable knowledge for educators striving to sustain pupil grades over different school years.

In contrast to BPNT proposals (Deci & Ryan, 2000), autonomy satisfaction was found not to predict school attainment at the beginning of the study, nor explain temporal change and the summer decay of pupil grades. Two potential explanations may underpin these findings. First, it may be that any positive association between autonomy satisfaction and school grades is facilitated through other mechanisms rather than directly. For instance, autonomy satisfaction was found to predict school grades as a consequence of higher school engagement (Jang et al., 2012). An alternative explanation may derive from the present measurement of autonomy which predominately tapped into pupils' perceived sense of choice for school activities. Deducing from previous work regarding pupil choice (e.g., Assor et al., 2002; Katz & Assor, 2007), pupils that perceive choice which is not personally meaningful to them may not be experience volition in their participation. For instance, pupils will likely understand that they do not have free choice over compulsory school activities and thus may feel forced to complete them even if given choice over the activities. Thus autonomy satisfaction in the present study may not fully reflect pupils' volition or behavioural ownership (Reeve et al., 2003). Indeed, autonomy satisfaction was found not to associate with pupils' school effort when autonomy was assessed by the same items (Taylor & Lonsdale, 2010), and has been negatively associated with attainment when conceptualised as independent decision-making (Isakson & Jarvis, 1999). It may be that future measures of autonomy need to explicitly tap into pupils' perceived relevance and volition for school activities rather than the behavioural choice they perceive over the activities.

Implications of Findings

Collectively, the present findings offer novel theoretical insights into previous inconsistent associations between pupils' psychological need satisfaction and school attainment. The finding that pupils' school competence and relatedness satisfaction may trigger differential properties in predicting school attainment is particularly notable. Extending previous findings (Jang et al., 2009), pupils' competence satisfaction appears important for the sustainment and enhancement of school grades throughout the school year. In contrast, pupils' relatedness satisfaction appears particularly valuable in reducing declines in school attainment following a layoff from school. Such findings would go undetected through cross-sectional examination of school attainment at a given time point.

Given the importance for schools to foster early school achievement (Poorthuis et al., 2015), it seems practically fundamental that school institutions support pupils' psychological needs. The support of competence is fostered through strategies of structure which clearly communicate expectations, ways of achieving desired academic outcomes, consequences for certain behaviour, and avoid overly critical appraisals (Wang & Eccles, 2013). It is noticeable that differences in pupil competence already exist at the onset of the present study (see Figure 2), thus it seems essential competence support is offered at the start of secondary school to avoid these competence disparities increasing. Alternatively, pupil relatedness is nurtured by strategies of interpersonal involvement which create a supportive school environment by offering emotional support and the actively acknowledgment of pupils' thoughts, feelings and opinions (Skinner & Belmont, 1993). These interpersonal strategies need to be endorsed not only between teacher and pupils but also between pupils themselves (Ruzek et al., 2016; Song et al, 2015).

It is essential, however, that both structure and involvement are offered in a manner that supports pupils' autonomy satisfaction (Jang et al., 2010; Reeve & Jang, 2006). In accord

with previous work (e.g., Katz & Assor, 2007), the finding that autonomy satisfaction did not predict change in school grades may indicate that autonomy support in schools should not merely provide pupils with choice over school activities. Autonomy supportive teaching needs to adopt tone of understanding towards pupil perspectives which welcomes pupil opinion, fosters patience towards pupil learning and provides choices that are personally relevant to pupils' interests and goals (Assor et al., 2002; Reeve, 2006; 2015; Reeve & Cheon, 2016).

Limitations and Directions for Future Research

A particular strength of the current work is that it assessed objective school grades to reflect pupils' actual school attainment, as opposed to relying on pupil or teacher reported achievement (Kuncel et al, 2005). Nevertheless, one caveat of the current findings is that it was conducted using a single school sample. Future studies may aim to replicate if the present attainment trajectories and summer decay are similar across multiple school institutions. Furthermore, the present study was not privy to pupils' socio-economic status which has been suggested to be a potential antecedent of the summer decay of school grades (Alexander et al., 2007; Downey et al., 2004). Future inclusion of this data would allow researchers to investigate if lower socio-economic pupils may be more likely to experience lower relatedness satisfaction at school which may explain their greater summer attainment deteriorations. A second lacuna is that the causality direction of the relationships between each psychological need and school attainment were not tested in this analysis. Previous findings have shown that increased academic engagement (Opdenakker & Minnaert, 2014) and physical activity levels (Gunnell, Bélanger & Brunet, 2016) may predict higher competence satisfaction. It may be that pupils achieving high grades are also predisposed to experiencing higher competence satisfaction at school.

Third, the early years of secondary school were the specific focus of the present research. The addition of multiple year examinations (i.e. over several school years) may add further developmental insights into the satisfaction of pupils' psychological needs. For instance, do pupil differences in competence satisfaction drive continued increases in school grades throughout school (i.e. up to 18 years old in the UK) or does this pattern plateau at a certain stage. Such an investigation could also explore if the summer decay in school grades alters over multiple school years. Finally, BPNT theorists have posited that a lack of need satisfaction may result in less deleterious outcomes compared to more extreme experiences of need frustration (see Bartholomew et al., 2011; Haerens et al., 2015). Future longitudinal studies could investigate if interpersonal differences in psychological need frustration may exemplify more deleterious attainment and summer decay patterns. The incorporation of need frustration may help educators identify pupils that are at particular risk of attaining continuously poor academic grades.

Conclusions

The present findings help advance knowledge by investigating how differences in pupils' autonomy, competence and relatedness satisfaction predict the temporal changes and summer decay of school grades during middle school. Pupil differences in competence satisfaction were found to drive increases in school grades over the course of the school year, whereas differences in relatedness satisfaction were shown to buffer the summer decay of pupil grades. In contrast, pupil differences in autonomy satisfaction were found not to predict temporal change or the summer decay of school attainment. This unexpected finding may potentially derive from the measurement of autonomy predominately tapping into pupils' perceived sense of choice for school activities, rather than a sense of volition. The findings provide theoretical rationale for further investigations of dynamic school processes associated

with pupils' psychological need satisfaction. Furthermore, the findings may be beneficial for educators to develop and sustain young adolescents' school attainment.

Chapter 4

Autonomy and Competence Frustration in Young Adolescent Classrooms:

Different Associations with Active and Passive Disengagement

Abstract

Few studies have attempted to identify distinct psychological correlates of different forms of classroom disengagement. Drawing from basic psychological needs theory (Deci & Ryan, 2000), this study investigated two divergent mechanisms predicting active and passive classroom disengagement. Pupils (N= 647; age = 11–14 years) and their respective teachers completed a questionnaire measuring the study variables. Using structural equation modelling, pupils' perceptions of teacher psychological control positively predicted pupils' autonomy and competence frustration in class. Pupils' competence frustration indirectly and positively associated with teacher-rated passive disengagement (e.g. daydreaming in class), via reduced feelings of vitality. Pupils' autonomy frustration demonstrated positive associations with both active disengagement (e.g. talking and making noise) and passive disengagement but neither relationship was explained by feelings of vitality. These distinct mechanisms may have implications for educators, identifying potential causes of different forms of pupil disengagement and the importance of avoiding psychological control in classrooms.

Keywords: teacher control, motivation, psychological needs, frustration, disengagement.

Introduction

Engaging school pupils is a principal goal for most teachers in school classrooms. As such, theoretical and empirical research has investigated the adaptive teacher behaviours (e.g., Assor et al., 2002) and pupil perceptions of learning contexts (e.g., Fall & Roberts, 2012; Patrick, Ryan, & Kaplan, 2007) that may effectively promote pupil engagement. Teachers are, however, often confronted with pupils that do not participate, become disruptive, and withdraw themselves from classroom activities. Despite the presence of these behaviours, there seems a lack of conceptual understanding and theoretical evidence concerning the negative processes underpinning classroom disengagement. The present study investigates whether the frustration of two candidate basic psychological needs (i.e., autonomy and competence) could explain distinct disengagement processes.

Disengaged pupils are one of the biggest difficulties that teachers face in school classrooms and can be an indicator of prolonged academic and social pupil problems (Fredericks, 2014; Henry et al., 2012). Classroom disengagement reflects negative classroom conduct and detachment from learning activities (Appleton, Christenson, & Furlong, 2008; Skinner et al., 2008). Disengaged pupils will typically not try hard, give up when faced with challenging tasks, and alienate themselves in the classroom by withdrawing from learning activities (Reeve 2006; Skinner et al., 2009). Pupils are considered disengaged if they lose focus (e.g. daydream), or participate in off-task conversation or argument with classmates, instead of listening to the teacher or completing class activities (Gobert, Baker, & Wixon, 2015). In other words, pupils may be engaged in irrelevant behaviour or thought processes which constitute academic disengagement as they are disconnected from classroom activities.

A closer examination of maladaptive reactions in classrooms suggests two different forms of classroom disengagement. Pupils can actively disengage by detaching themselves from classroom activities in an animated and reactive manner, such as disrupting the class,

talking over or arguing with others, or disobeying the teacher (Way, 2011). These pupils direct their behaviour towards irrelevant stimuli and away from instructional information or classroom tasks. Such active detachment within the classroom should not be confused with contrasting displays of interest and enthusiasm associated with classroom engagement, such as passionate debating of learning material between pupils. Rather, the present definition of active disengagement refers to reactive and animated types of maladaptive behaviour that is both non-compliant and off-task in nature.

Alternatively, pupils may passively disengage by withdrawing in an inactive manner, signified by lethargy, daydreaming, and tiredness in class. These pupils will become unresponsive to teacher or peer interactions that relate to classwork, often not attempting tasks, and avoiding or refusing to answer questions. Pupils who passively disengage do not impose an immediate problem in classrooms and often do not receive the same focus from educators as actively disruptive pupils (Paulsen, Bru, & Murberg, 2006). Researchers have not explored the distinction between active and passive types of pupil disengagement or the associated social and cognitive correlates, despite the clear differences in their respective characteristics. Adopting a generic disengagement perspective does not allow for targeted interventions aimed at minimising passive or active disengagement and this may stunt theoretical advancement.

When examining the social and intrapersonal processes associated with pupil behaviour, self-determination theory (SDT; Ryan & Deci, 2002) has gained extensive empirical support within the domains of education and human motivation. In particular, it is posited within SDT that pupils will function less effectively in classroom environments that are perceived as psychologically controlling (Hein, Koka, & Hagger, 2015). Teachers that use psychological control will attempt to direct, manipulate or pressure pupils by disregarding the pupils' perspective and adopting a teacher-centred agenda. Typically, such maladaptive

teaching will use external sources to motivate pupil behaviour (e.g. deadlines, incentives, threats of punishment, criticism; Reeve, 2009; Reeve & Jang, 2006). SDT posits that pupils' basic psychological needs will be frustrated when they perceive their teacher as psychologically controlling (Niemiec & Ryan, 2009; Ryan & Deci, 2000; Vansteenkiste & Ryan, 2013). We further propose that the frustration of two needs, namely autonomy and competence, may be differentially associated with active and passive disengagement in the classroom. The need for autonomy refers to the experience of volition and psychological freedom towards one's behaviour (deCharms, 1968). Frustration of this need, therefore, concerns feeling oppressed and pressured to behave in certain ways (Bartholomew et al., 2011). The need for competence refers to the experience of effectiveness in one's pursuits (White, 1959). Thus competence frustration concerns feelings of inadequacy or failure (Bartholomew et al., 2011).

Recent research findings have helped to expand knowledge of this 'darker side', postulating that need frustration may be distinct from need dissatisfaction, and is associated with ill-being and comprised interpersonal functioning (Bartholomew et al., 2014; Costa et al., 2015; Gunnell et al., 2013). Attempts to cope with experiences of need frustration typically provoke defensive and compensatory behaviours such as passivity, alienation, misbehaviour, resistance, and defiance (Vansteenkiste & Ryan, 2013). In line with this evidence, investigating classroom disengagement may be better understood by measuring competence and autonomy frustration, rather than dissatisfaction, to appropriately tap into the intensity associated with negative psychological experiences (Bartholomew, Ntoumanis, Ryan, Bosch et al., 2011). Indeed, recent evidence demonstrated that pupils reported higher classroom disengagement and bullying behaviours, when they perceived their psychological needs to be frustrated due to psychologically controlling teachers (Hein et al., 2015; Jang et al., 2016). This evidence, in line with many other studies, adopted a composite approach

whereby general need frustration was measured. A more nuanced approach to psychological need frustration may unearth new insight into maladaptive educational processes.

School classrooms represent contexts where learners face regular demands relating to their performance and ability (Reis, Sheldon, Gable, Roscoe & Ryan, 2000). In such environments, it will be difficult for pupils who experience competence frustration to maintain active involvement in activities (Nicholls, 1989). In fact, when pupils perceive themselves to lack competence in the classroom, they are likely to withdraw from class activities in a passive manner. A lack of competence has been associated with greater amotivation in education settings (e.g., Legault et al., 2006), which is characterised by an absence of effortful behaviour (Deci & Ryan, 2000). Similarly, students that were passively detached from school have reported little belief in their capability of being successful at school (Patrick et al., 1993). This process is analogous to learned helplessness, where pupils develop a belief that they cannot influence or bring about a desired outcome and develop self-defeating behaviour patterns, such as giving up, withdrawing effort and passive avoidance of tasks (Abramson et al., 1978; Elliot & Dweck, 1988). Collectively this evidence suggests that if competence is frustrated in the classroom, it will result in learners withdrawing their effort and demonstrating passive, avoidance type behaviours in attempts to evade demonstrating their perceived incapableness.

In contrast to the relationship between competence frustration and passive behaviours, an active and disruptive response may be more likely associated with the frustration of ones' autonomy. Research in the parenting domain indicates that children tend to have actively adverse responses to an absence of autonomy, including higher levels of delinquency (Barber, 1996), problem behaviours (Pettit et al., 2001), and aggressive behaviour (Joussemet et al., 2008). Young adolescents have also been found to reject parental authority when prevented from acting volitionally (i.e. in line with endorsed values and interests; Van Petegem et al.,

2015). Extrapolating from this knowledge base, it is proposed that the frustration of autonomy in classrooms is likely to lead to reactive disengagement and avoidance which manifests itself as making noise or talking to other pupils. In contrast, frustrated competence may be a stronger correlate of passive disengagement in class. No previous research has tested this important distinction despite it being implied by the evidence described above. Exploring potentially distinct correlates of autonomy and competence frustration is required to identify theoretical mechanisms that explain different types of disengagement.

This portrayal of active and passive types of disengagement suggests adverse behaviours that are underpinned by different levels of subjective vitality, a feeling of aliveness and energy (Ryan & Frederick, 1997). From a broad SDT perspective, the frustration of autonomy and competence will deplete vitality (Ryan & Deci, 2008). Nonetheless, research in adolescent athletes and physical education students has evidenced a stronger association between competence and feelings of vitality, compared to autonomy (Adie, Duda, & Ntoumanis, 2012; Reinboth, Duda, & Ntoumanis, 2004; Taylor & Lonsdale, 2010). These studies examined psychological (dis)satisfaction, rather than competence and autonomy frustration. In an adult sample, competence but not autonomy frustration, was associated with reduced vitality (Gunnell et al., 2013). It may be that frustration of the two needs have unique depleting influences on pupils' vitality. Identifying processes that differ in the reduction of subjective vitality may be fundamental in identifying underlying causes of active and passive disengagement.

Study Overview

On the basis of the foregoing considerations, the aim of this study was to assess the maladaptive processes that underlie active and passive disengagement in class. In accordance with SDT (Bartholomew, et al., 2011; Ryan & Deci, 2000; Vansteenkiste & Ryan, 2013), it is hypothesised that teacher psychological control will be positively associated with pupils'

perceived autonomy and competence frustration (hypothesis 1). Concordant with learned helplessness processes (Abramson et al., 1978; Elliot & Dweck, 1988) and previous evidence (Adie et al., 2012; Gunnell et al., 2013; Reinboth et al., 2004; Taylor & Lonsdale, 2010), it is proposed that the frustration of competence will be associated with teacher ratings of passive disengagement via decreased feelings of vitality (hypothesis 2). In contrast, the frustration of autonomy in class will be directly associated with teacher ratings of active disengagement and not explained by pupils' subjective vitality (hypothesis 3). Reflecting the overall model, it is expected there will be significant indirect effects between teacher psychological control and the two forms of disengagement (hypothesis 4).

Method

Participants

Six hundred and forty seven secondary school pupils (386 male, 260 female; mean age = 12.59 years, SD = 0.93 years, age range = 11 − 14 years old) and their teachers (n = 22) participated in the study, coming from three schools in the United Kingdom (two selective grammar schools and one comprehensive school). A total of 29 different classrooms were used for the study. All three schools catered for pupils ageing from 11-18 years of age, with class sizes ranged from 17 to 31 pupils per class. Ethnicity data was not obtained for individual pupils, however, the three schools ranged between 10% - 21% of their total number of pupils being considered from ethnic minorities, which is below the UK average of 27% (Drake, 2015).

Procedure

Full ethical approval was obtained from the principal researcher's university ethics committee. Pupils and teachers were provided with details of the study both verbally and in writing prior to the study commencing. All teachers provided written consent (see Appendix L), with parental opt-out forms provided to enable parents to indicate if they did not wish for their child to participate (see Appendix M). Four pupils opted out of the study. All pupils were instructed that they did not have to complete the questionnaire if they did not wish to

and provided written consent of their willingness to participate (see Appendix N). The pupil questionnaire was administered by the principal researcher at the beginning of a school lesson and collected once each pupil had completed the questionnaire (see Appendix O). The taught subject varied between classes (Physical Education = 41%; Humanities = 24%; Citizenship = 21%; Sciences = 14%)[1].

Prior to administering the questionnaire, it was explained to the pupils and teachers that all items referred to the specific class that the questionnaire was administered in. Once the questionnaires had been administered, the principal researcher explained the instructions to each class and allowed the opportunity for pupils to ask any additional questions. The pupil questionnaire took approximately ten minutes for pupils to complete. To ensure confidentiality, pupils were asked to direct any questions regarding the study to the principal researcher and not the class teacher (who remained a passive observer during data collection). Teacher-rated pupil disengagement questionnaires were provided to teachers at the end of the school lesson, subsequent to pupils completing the questionnaire, and were completed and returned to the principal researcher within a week of being administered (see Appendix P).

Measures

      Perceptions of teacher psychological control. Pupil perceptions of their specific teacher's psychological control were measured using 10 items (e.g. "My teacher does not allow me to work at my own pace" and "My teacher makes me feel guilty when I do not please them"), previously used by Madjar, Nave, and Hen (2013). Items were rated using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale authors

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[1] The processes under investigation are proposed to be universal (Deci & Ryan, 2000; Niemiec & Ryan, 2009) and there is no evidence to suggest that the processes vary across subjects. In addition, a MANOVA revealed very few subject differences in the mean levels of the study variables, apart from higher vitality and lower active disengagement in Physical Education classes, compared to the other classroom subjects. After controlling for these differences in PE, all substantive conclusions remained the same as our reported model.

demonstrated satisfactory factorial structure and internal consistency (α =.71 - .74; Madjar et al., 2013).

Autonomy and competence frustration. Pupil perceptions of autonomy and competence frustration during the class were measured using the respective subscales of the Psychological Need Thwarting Scale (Bartholomew, Ntoumanis, Ryan et al., 2011). Items were adapted to an educational context with some words simplified for use with secondary school children. These items were also checked by teachers and modified where necessary to ensure pupils' understanding of each item's terminology and phrasing. For instance, the original questionnaire stem "In my sport" was changed to "In this class", with any original item relating to training (e.g. "I feel prevented from making choices with regard to the way I train") modified to represent learning (e.g. "I feel prevented from making choices about the way I learn"). Both subscales consisted of four items: autonomy (e.g. "I feel forced to follow decisions made for me,"); competence (e.g. "There are situations where I am made to feel I am not good enough"). Items were rated on a 7 point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Both subscales have previously demonstrated satisfactory internal consistency (autonomy frustration: α =.67; competence frustration: α =.79) and factorial validity (Bartholomew, Ntoumanis, Ryan, Bosch et al., 2011).

Subjective Vitality. Pupils' feelings of subjective vitality in the class were measured using a five item version of the Subjective Vitality Scale (Ryan & Frederick, 1997), previously used by Bartholomew, Ntoumanis, Ryan, Bosch et al., (2011). Items were rated on a 7 point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Example items include "I have energy and spirit" and "I nearly always feel alert and awake". All original items demonstrated good internal consistency (α =.92) and factorial validity, with all items used in this study loading above .50 onto their respective latent factor (Ryan & Frederick, 1997).

Pupil disengagement. Pupil disengagement can be measured in variety of different ways, such as pupil self-report, school data, independent observations and teacher ratings. We obtained teacher ratings of each pupil's active and passive classroom disengagement to avoid over-reliance on pupil self-report and minimise measurement error associated with common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Teacher perceptions of pupils' active disengagement in class were assessed using two adapted items from the disrespect subscale of the Pupil Behaviour Patterns Scale (Friedman, 1995; see Hastings & Bham, 2003, for construct validity). These items were selected to measure classroom behaviour that was both non-compliant and disruptive, assessing active disobedience (e.g. "Student X in my class argues with other students") and active inattentiveness (i.e., "Student X in my class often speaks over others and makes a lot of noise"). Both items were rated on a 6 point scale ranging from 1 (never) to 6 (always). The original scale demonstrated good internal consistency (α =.87; Freidman, 1995), with the two items used in this study loading .60 and .51 onto their respective latent factor (Hastings & Bham, 2003).

Teacher perceptions of pupils' passive disengagement in class were measured using two items designed for the purpose of this study: "To what extent does Student X daydream" and "To what extent does Student X switch off in class". Each item was rated on a 6 point scale ranging from 1 (never) to 6 (always). These items were designed to reflect teachers' general perceptions of pupils' withdrawal from both social and performance situations, typically associated with pupil passivity (Paulsen et al., 2006). Two items for each type of disengagement were chosen to enable each teacher to feasibly rate each individual pupil in their class. Internal consistency and factor loadings are presented in Table 4.1.

Data Analysis

Preliminary analysis involved calculation of descriptive statistics, Cronbach's alpha coefficients, and bivariate correlations (see Table 1). We also conducted confirmatory factor

analysis using Mplus software (Version 7:2; Muthén & Muthén, 1998 - 2012) to test the item

factor loadings on their respective latent factor. Each item was used as an indicator of its

respective subscale latent factor (e.g. the four autonomy items were indicators of the

autonomy frustration latent factor). We used maximum likelihood estimation with robust

standard errors and the TYPE = COMPLEX command in Mplus. These analytical steps

meant that calculation of standard errors was robust to deviations from normality (Olsson,

Foss, Troye, & Howell, 2000) and accounted for potential clustering effects associated with

pupils being nested within different classrooms (Hox, 2010). A full multi-level model was

unfeasible as our sample size did not contain enough Level 2 units (i.e. classrooms; n = 29) to

meet suggested guidelines (i.e. n > 50; Maas & Hox, 2005).

After the confirmation of acceptable factorial structure for all latent variables, we

tested a fully forward model, depicting all paths between every latent factor as a baseline to

compare subsequent models (Model 1). The non-hypothesised paths were then systematically

removed to arrive at our proposed model (for similar procedures see Marshall, Parker,

Ciarrochi, & Heaven, 2013). Firstly, the non-hypothesised direct paths from teacher control

to each disengagement and vitality were removed (Model 2). Next, the non-hypothesised

direct paths between competence frustration and both types of disengagement (Model 3) and

the non-hypothesised path between autonomy frustration and passive disengagement (Model

4) were removed. Finally, the hypothesised model was tested (shown in Figure 1) by

removing the non-hypothesised paths between autonomy frustration and vitality, and vitality

and active disengagement (Model 5).

Each model was evaluated to clarify if the solution was well defined, the size and

direction of the regression paths were conceptually plausible and model fit indices were

acceptable. The indices used for estimating goodness of fit of the models were the

Standardised Root Mean Square Residual (SRMR < .06), Root Mean Square Error of

Approximation (RMSEA < .08; along with 90% confidence intervals) and Comparative Fit Index (CFI > .90). Although CFI values greater than .90 are considered representative of a well-fitting model (Bentler, 1992), values closer to .95 have been recommended as indicative of good model fit (Hu & Bentler, 1999). If the more parsimonious model did not show reduced fit to the data compared to the previous model (i.e., ΔCFI < .01 and ΔRMSEA < .015; Chen, 2007; Cheung & Rensvold, 2002) then the parsimonious model was accepted. Satorra-Bentler scaled chi-square difference tests are also reported, however, these tests have been shown to be overly strict with large sample sizes, therefore, more emphasis was placed upon the interpretation of delta CFI and RMSEA (Brown, 2006; also see Gunnell et al., 2016 for a comparable analytical procedure).

Results

Descriptive Statistics

Means, standard deviations, and internal consistency values for all measurement scales are presented in Table 4.1. All mean values, with the exception of subjective vitality, were below the midpoint of their scales. Cronbach's alpha values all demonstrated satisfactory internal consistency ($\alpha > .70$). Between 82 and 90% of the explained variance in the four pupil-reported variables was at the pupil-level, thus between 10 and 18% was explained at the class-level. In regards to teacher-rated active and passive disengagement, between 66 and 73% of the variance was found at the pupil-level with the remaining variance at the class-level ranging between 27 and 34%.

Measurement Model

Confirmatory factor analysis specified a measurement model (i.e., no paths between latent factors), with all indicator items predicting their respective latent factor. Model fit indices produced a well-fitting measurement model: $\chi^2 = 633.63$; df = 309; SRMR = .05; CFI = .94; RMSEA = .04; (90% confidence intervals: 0.036 - 0.045). Correlations between latent factors are presented in Table 4.1. Teacher control was found to correlate positively with the

frustration of both needs and both types of disengagement, and negatively with vitality. In accordance with SDT, autonomy and competence frustration positively correlated with each other. Both autonomy and competence frustration negatively correlated with vitality and positively correlated with passive disengagement. Active and passive disengagement were moderately and positively correlated with each other. Standardised factor loadings and residual variances are presented in Table 4.2. All items were included in the subsequent analyses.

Primary Analysis

Model fit indices, standardised regression coefficients and standard errors for every model are presented in Table 4.3. Model 1 (the fully forward model) showed acceptable fit to the data; however, the inclusion of all paths led to several parameter estimates suggesting relationships that were theoretically unlikely (possibly due to statistical suppression; MacKinnon, Krull & Lockwood, 2000). For instance, teacher psychological control positively predicted vitality, and autonomy and competence frustration both negatively predicted active disengagement. Removal of the direct effects from teacher psychological control to both disengagement types and vitality (Model 2) did not meaningfully reduce the fit of the model to the data (based on ΔCFI and ΔRMSEA) and produced conceptually defendable relationships; therefore, Model 1 was rejected. Model 3 (removal of direct paths between competence frustration and both types of disengagement), Model 4 (removal of the path between autonomy frustration and passive disengagement), and Model 5 (the hypothesised model) similarly led to well-defined solutions, defendable conclusions, and limited reduction in model fit. As a result, the hypothesised model was accepted as the most parsimonious model.

In the proposed model, teacher psychological control was positively associated with autonomy and competence frustration (hypothesis 1). Based on criteria for establishing

magnitude of indirect effects (Cohen 1988; Preacher & Kelley, 2011), a small to moderate indirect association was found between competence frustration and passive disengagement, via reduced pupil vitality ($\beta = .08$, p = .01; hypothesis 2). The proposed direct association between autonomy frustration and active disengagement was found to only approach conventional levels of statistical significance (hypothesis 3). Reflecting the overall hypothesised process (hypothesis 4), a moderate indirect association between teacher psychological control to active disengagement via autonomy frustration was found, although only approaching conventional levels of statistical significance ($\beta = .09$, p =.07). The indirect association between teacher psychological control and passive disengagement through competence frustration and vitality was small to moderate ($\beta = .06$, p = .01).

In models 2 and 3, an unexpected direct association between autonomy frustration and passive disengagement was observed that led to the consideration of this pathway in an alternative model (see Model 6). This association is conceptually defendable, however, the inclusion of this path did not improve model fit. Furthermore, across Models 2, 3 and 6, the inclusion of this path led to other aspects of the model that were less theoretically defensible. Specifically, competence frustration had no association with passive disengagement despite considerable previous evidence suggesting the contrary (e.g., learned helplessness; Abramson et al., 1978; Elliot & Dweck, 1988). Consequently, the path between autonomy frustration and passive disengagement was not included in the final model (Model 5) but the meaningfulness of this observed relationship could not be ruled out (which is depicted in Figure 5).

Table 4.1
Descriptive Statistics and Latent Factor Correlations

Variable	Range	Mean	SD	α	1	2	3	4	5	6
1. **Teacher Control**	1-5	2.19	0.77	.84	-					
2. **Autonomy Frustration**	1-7	2.45	0.96	.78	.85***	-				
3. **Competence Frustration**	1-7	2.24	1.01	.81	.74***	.88***	-			
4. **Vitality**	1-7	4.69	1.36	.82	-.36***	-.47***	-.50***	-		
5. **Active Disengagement**	1-6	1.65	0.99	.84	.28***	.12*	.08	-.01	-	
6. **Passive Disengagement**	1-6	1.92	1.06	.84	.26***	.20***	.16***	-.13*	.56***	-

Note: *p<.10, **p<.05, ***p<.001.

Table 4.2
Standardised Factor Loadings and Residual Variances for Latent Variables

Variable	Factor Loading	Residuals
Teacher Control (TC)		
My teacher is only willing to listen to opinions that match their opinion	.37	**.86**
My teacher always tries to change me	.48	**.78**
My teacher stops me before I have finished saying what I wanted	.65	**.58**
My teacher clearly shows that I have hurt their feelings when I do not meet their expectations	.46	**.79**
My teacher often interrupts me	.70	**.51**
My teacher makes me feel guilty when I do not please them	.66	**.57**
My teacher does not allow me to work at my own pace	.71	**.50**
My teacher avoids talking to me when I have disappointed them	.63	**.60**
My teacher interrupts me in the middle of activities that interest me	.70	**.51**
My teacher tells me what to do all the time	.63	**.60**
Autonomy Frustration (AF)		
I feel prevented from making choices about the way I learn.	.69	**.52**
I feel pushed to behave in certain ways.	.67	**.55**
I feel forced to follow decisions made for me.	.71	**.49**
I feel under pressure to agree with the school activities I am given.	.68	**.54**
Competence Frustration (CF)		
There are situations where I am made to feel I am not good enough.	.73	**.47**
I don't feel good enough because I am not given opportunities to fulfil my potential.	.66	**.57**
Situations occur in which I am made to feel I am incapable.	.73	**.47**
There are times when I am told things that make me feel that I lack ability.	.77	**.41**
Vitality (Vit)		
I don't feel very energetic.	.55	**.69**
I have energy and spirit.	.70	**.51**
I look forward to this class.	.64	**.60**
I nearly always feel alert and awake.	.74	**.46**
I feel energised.	.84	**.30**
Active Disengagement (Active)		
In class, this student often speaks over others and makes a lot of noise	.83	**.31**
In class, this student argues with other students	.87	**.25**
Passive Disengagement (Passive)		
To what extent does this student daydream in class	.73	**.47**
To what extent does this student switch off in class	.99	**.01**

Table 4.3
Regression Coefficients, Standard Errors, and Model Fit Indices for Each Tested Model.

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
TC > AF	.90****	0.03	.92****	0.03	.91****	0.02	.91****	0.03	.91****	0.03	.91****	0.03
TC > CF	.80****	0.04	.80****	0.04	.80****	0.04	.80****	0.04	.80****	0.04	.80****	0.04
TC > Vit	.41***	0.15	-	-	-	-	-	-	-	-	-	-
TC > Active	.96****	0.21	-	-	-	-	-	-	-	-	-	-
TC > Passive	.47**	0.23	-	-	-	-	-	-	-	-	-	-
AF > Vit	-.45**	0.22	.10	0.14	-.10	0.14	-.12	0.15	-	-	-	-
CF > Vit	-.48****	0.12	-.42***	0.13	-.41***	0.13	-.41***	0.13	-.51****	0.05	-.50****	0.04
AF > Active	-.51**	0.23	.32***	0.11	.24***	0.08	.12*	0.06	.10*	0.06	.19***	0.07
AF > Passive	-.14	0.19	.27**	0.11	.22***	0.07	-	-	-	-	.20***	0.06
CF > Active	-.30**	0.15	-.11	0.13	-	-	-	-	-	-	-	-
CF > Passive	-.15	0.13	-.06	0.11	-	-	-	-	-	-	-	-
Vit > Active	-.01	0.10	.07	0.10	.09	0.10	.03	0.09	-	-	-	-
Vit > Passive	-.09	0.08	-.05	0.08	-.04	0.08	-.15**	0.07	-.16***	0.07	-.08	0.06
$\chi^2_{(df)}$	697.23(310)		724.00(313)		724.11(315)		738.60(316)		734.27(318)		721.69(317)	
S-B$\Delta\chi^2_{(df)}$	-		32.939****(3)		0.751(2)		10.503***(1)		-4.330(2)		-	
SRMR	.053		.056		.056		.064		.064		.056	
CFI	.926		.922		.922		.920		.921		.923	
RMSEA	.044		.045		.045		.045		.045		.044	
RMSEA 90% CI	[.040, .048]		[.041, .049]		[.041, .049]		[.041, .050]		[.041, .049]		[.040, .049]	

Note. $\chi^2_{(df)}$ = Chi-square and degrees of freedom; S-B = Satorra-Bentler Scaled Chi-Square Difference; SRMR = Standardized Root Mean Square Residual; CFI = Comparative Ft Index; RMSEA = Root Mean Square of Approximation; CI = confidence interval; TC = Teacher Psychological Control; AF = Autonomy Frustration; CF = Competence Frustration; Vit = Subjective Vitality; Active = Active Disengagement; Passive = Passive Disengagement. Chi-square difference was not reported between Model 5 and 6 as Model 6 was not nested within Model 5. *p <.10, **p <.05, ***p <.01, ****p <.001.
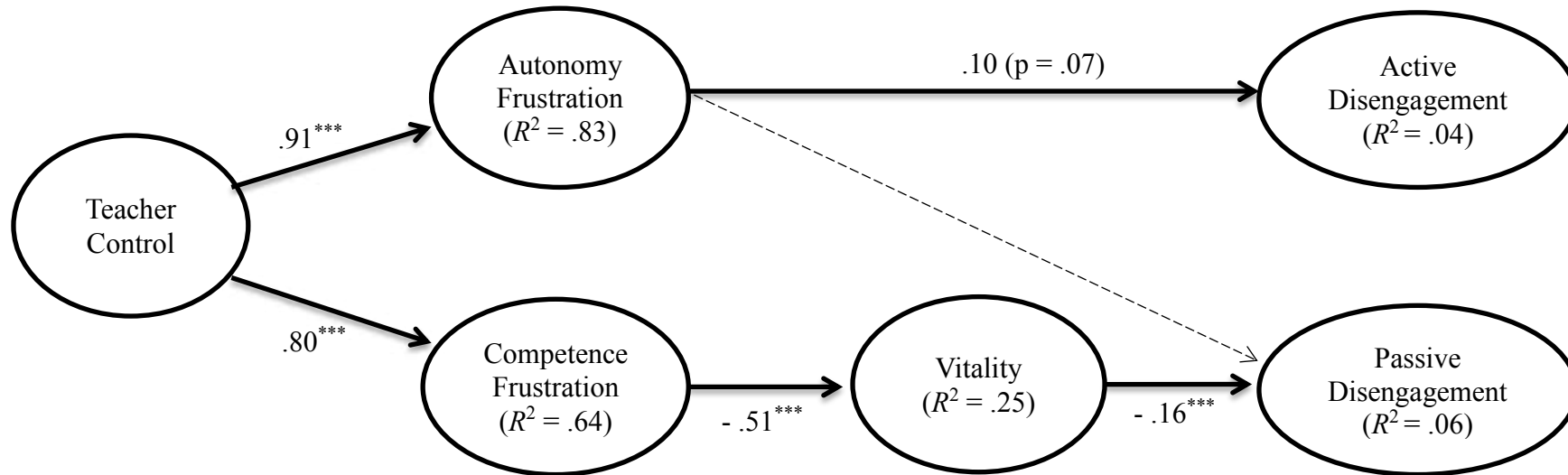
Figure 4. Structural equation model depicting our hypothesised model (Model 5) with separate processes predicting active and passive classroom disengagement. The dotted pathway depicts an unexpected association between autonomy frustration and passive disengagement. Full inclusion of this path resulted in other aspects of the model becoming less theoretically defensible but we acknowledge the potential meaningfulness of this observed relationship. For brevity, latent factor indicators are not shown.

*p <.05, **p <.01, ***p <.001.

Discussion

The purpose of this study was to determine if passive and active disengagement were associated with perceived teacher control, and to examine if the frustration of pupils' basic psychological needs of autonomy and competence would associate differentially with separate disengagement responses. No research to date has explored if the frustration of these psychological needs may trigger different maladaptive processes in school settings. The findings of the present study provide cross-sectional evidence for the potential association between these needs and active and passive disengagement processes.

In line with extant evidence (Jang et al., 2016), the present findings demonstrate that pupil disengagement is indirectly associated with teachers' psychological controlling strategies, such as adopting guilt inducing tactics, disregarding pupil opinions and using criticism to pressure pupils. The use of teacher psychological control has been associated with a range of maladaptive learning outcomes including pupil amotivation and resistance to authority (Haerens et al., 2015), decreased academic engagement (Assor et al., 2005), and reduced enjoyment (Reeve & Jang, 2006). Yet despite this evidence, educators still regularly demonstrate, and often prefer, the use of psychological controlling strategies in the classroom (Newby, 1991; Reeve, 2009; Reeve & Assor, 2011; Taylor, Ntoumanis & Smith, 2009). The findings in the present study extend current knowledge by detailing potential mechanisms which may explain how psychologically controlling teaching may lead to passive withdrawal or active disengagement in classrooms. Specifically, the present study suggests that teachers' use of psychological control will thwart, rather than support, pupils' needs for autonomy and competence in the classroom. As a consequence, pupils that perceived their autonomy to be frustrated may become disruptive and disobedient, whereas perceived competence frustration may lead to pupil passivity in class.

The findings illustrate that pupils who perceived that their competence was frustrated were rated as passive, daydreaming pupils by their teacher. Low perceived competence has been previously associated with feelings of learned helplessness (Elliot & Dweck, 1988), amotivation (Legault et al., 2006), and passive detachment from school (Patrick et al., 1993). In other words, pupils that feel they do not have the ability to be successful in the classroom may withdraw passively from learning activities in an attempt to hide their perceived incompetency and avoid failure. These pupils may attempt to avoid attention by becoming unwilling to answer questions, offer their opinion or attempt difficult tasks. The present associations suggest that this relationship between competence frustration and passive disengagement may be a consequence of reduced vitality. That is, pupils that perceive themselves as a failure or being incapable in class will likely experience reductions in their vitality, resulting in passive classroom behaviour. These pupils will typically participate less in activities and may appear tired in class. As a result, such passive behaviours may actuate as a helpless response which may impede academic development and progression, often without the teacher's awareness (Tam, Zhou, & Harel-Fisch, 2012).

In line with previous evidence found within the parenting domain (Barber, 1996; Pettit et al., 2001), autonomy frustration positively predicted active disengagement, albeit the relationship was borderline statistically significant considering conventional standards. Pupils lacking in autonomy may struggle to apply social rules and standards to their behaviour in the classroom (Ryan, Deci, & Vansteenkiste, 2016; Weinstein, Przybylski, & Ryan, 2012). For instance, pupils that feel forced to behave in regimented ways may become restless, disobedient and disruptive. Unlike competence frustration and passive disengagement, vitality did not play a role in this process. Rather, a threat to a person's psychological freedom may result in reactive attempts to gain independence away from the source of the perceived threat and heteronomy (Pavey & Sparks, 2009). Therefore, pupils' experience of

autonomy frustration manifests as active disengagement, disobedience and disruption. Pupils that experience autonomy frustration may actively disengage as a method of distraction from any negative feelings associated with perceived coercion (Skinner & Wellborn, 1997).

Throughout the analysis, support for an association between autonomy frustration and passive disengagement was observed; however, inclusion of this path in analytic models resulted in theoretically spurious associations among other variables. It may be that classroom constraints that are perceived to be coercive may also cause some pupils to passively switch off and daydream. Unlike competence frustration, this passive autonomy process may not be driven by reduced feelings of vitality, but rather signifies a simple avoidance of the perceived heteronomous context and associated negative affect. Reasons why the inclusion of this association led to potentially spurious conclusions among the other variables remain unknown, but they were likely of a statistical nature.

Implications of Findings

From a theoretical perspective, the different relationships of autonomy and competence frustration with vitality and active disengagement are noteworthy. This study represents the first empirical evidence that frustration of pupils' competence and not autonomy may reduce vitality in the classroom. The obstruction of autonomy may potentially manifest in pupils' reactance and rebellion towards the source of the perceived heteronomy (i.e., oppositional defiance; Vansteenkiste & Ryan, 2013). In contrast, competence frustration is not implicated in these rebellious processes and may manifest as passivity in the classroom. In addition, autonomy frustration may be associated with both active and passive disengagement. The concept of autonomy comprises affective and decisional components (Houlfort, Koestner, Joussemet, Nantel-Vivier, & Lekes, 2002). Passive reactions may represent avoidance of the negative affect associated with autonomy frustration. In contrast, the active and rebellious reactions may be initiated as a response to the frustration of

decisional aspects of autonomy (e.g., experiences of overt force to control behaviour, such as threats of punishment; see Haerens, Vansteenkiste, Aelterman, & Van den Berghe, 2016 for comparisons with internally versus externally controlling teaching).

From an applied perspective, identifying different disengaging processes associated with autonomy and competence frustration can inform educators of the underlying reasons for specific types of classroom disengagement. Some teachers may interpret psychological control as an effective method of engaging pupils (Reeve et al., 2014), as a response to poor pupil behaviour (Reeve, 2009) or motivation (Pelletier, Séguin-Lévesque, & Legault, 2002). The moderate indirect effects sizes observed in the present findings highlight why this approach may be counterproductive and may result in both active and passive disengaged pupils. Thus, teacher directed interventions may be required to help teachers understand the consequences of employing psychological control and teach them methods to avoid such strategies (Hospel & Galand, 2016; Reeve & Assor, 2011). Teachers should not force pupils to do activities, but demonstrate the relevance of learning activities, and provide the opportunity for pupils to give their opinion without using controlling language (e.g. "you must" or "have to"; Assor, et al., 2002; Reeve, 2015; Reeve & Assor, 2011; Reeve & Jang, 2006).

Limitations and Directions for Future Research

This study presented a number of findings concerning maladaptive teacher behaviours and internal processes that lead to different types of pupil disengagement. A particular strength of this study is the use of teacher reported pupil disengagement as it provides an observed assessment of pupil disengagement, rather than relying on a self-report measure. Nevertheless, the addition of independent classroom observations in future research may also offer an alternative and complementary account of pupil disengagement (e.g., Allen et al., 2013). Furthermore, it is acknowledged that the teacher measures of pupil disengagement

were limited to two items. This allowed teachers to provide ratings for every pupil, however, larger multi-item scales (e.g. Caldwell, Rudolph, Troop-Gordon, & Kim, 2004; Jang, et al., 2016) may provide a more detailed examination of different types of classroom disengagement.

The cross-sectional nature of this study allowed the exploration of associations with the frustration of autonomy and competence. Future studies may adopt a longitudinal method to explore if different disengaging processes are indicators of prolonged academic problems. For example, longitudinal work could investigate if the passive responses associated with competence frustration result in increased class truancy levels, school drop-out or decreased performance expectations over a longer time period. Similarly, active disengagement associated with autonomy frustration may be associated with increased classroom punishments, school suspensions and even school exclusions.

Finally, the concept of engagement versus disengagement is considered as a multidimensional paradigm comprising behavioural, cognitive, and emotional components (Fredricks, Blumenfeld & Paris, 2004; Skinner, Kindermann, Connell & Wellborn, 2009; Wang, Chow, Hofkens, & Salmela-Aro, 2015). The present study exclusively focused on teacher perceptions of behavioural components. Previous work has found perceived competence to be the only significant predictor of anxiety whereas autonomy was the only significant predictor of frustration (Skinner et al., 2008). Building on these findings, and previous research on achievement emotions and control-value theory (Pekrun, 2006), the addition of emotional and cognitive components may provide educators and researchers with an understanding of the negative feelings that may accompany these maladaptive behaviours.

Conclusions

The findings from the current study highlight distinct correlates of autonomy and competence frustration with two separate types of pupil disengagement. Teacher

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psychological control was found to be associated with both processes, stressing the importance for schools and educators to avoid applying such psychological control in classrooms. Although most teachers may apply controlling strategies with the well-meaning intention of engaging pupils, the adoption of such control may promote pupils to become passively or actively disengaged in classrooms.

Chapter 5

The Feasibility of a School-based Intervention to Enhance Adolescents'

Intrapsychic Experiences of Psychological Need Satisfaction

Abstract

Nurturing pupil motivation at school can often present a difficult task for school educators. In accordance with basic psychological need theory (BPNT; Ryan & Deci, 2002), the satisfaction of pupils' psychological needs will result in autonomous motivation at school. BPNT interventions have traditionally adopted a contextual focus to train teachers to become more need supportive in their teaching. To accompany such initiatives, the present study investigates the feasibility of conducting a pupil-focused intervention to enhance pupils' own perceptual awareness of their psychological needs. The proposed intervention was in the form of a pupil completed dairy-log so pupils could record personally meaningful experiences which they could reflect upon. A two week pilot and focus group discussion, involving 22 pupils and 12 teachers, highlighted potential issues and recommendations for the future design. Findings suggest the diary-log may be of substantive use in developing adaptive pupil thought patterns but that it would be most appealing for pupils in an electronic app format. An electronic app would allow pupils to log entries in a variety of methods (i.e. written, pictures, videos, audio, emoji's) whilst receiving notification reminders and offering selectable options for easy completion. Existing need support interventions would need to be incorporated with the diary to provide pupils with guidance, support and incentive to complete the diary. Furthermore, the diary would need to culminate in a showcase event to provide a more salient reason for pupils to engage with the diary. These findings are explained in detail throughout this chapter, with future tests required to examine the effectiveness of the proposed intervention in enhancing pupils' psychological need satisfaction.

Keywords: basic psychological needs, dairy-log, pupil-focused, motivation, intervention.

Introduction

A driving stimulus for educators is to instil motivation for learning within their pupils, yet this can often prove a difficult task. It is not unusual for pupils to detach themselves from learning, withdraw when faced with adversity, or exert minimal effort to abide with teacher instruction or to avoid punishment (Henry et al., 2012; Legault et al., 2006). From an organismic-dialectic perspective, pupils' motivation flourishes with the combination of a supportive environment along with adaptive intrapersonal processes (Deci & Ryan, 2000; 2012). Educational interventions largely focus on the former via teacher training or amendments to school policy, for instance. Despite teachers' best efforts, dysfunctional intrapersonal processes can often cause pupils to impede their own motivation and academic potential (Preckel, Holling, & Vock, 2006). Extrapolating from evidence of pupil-centred practise (e.g., Smit, Brabander & Martens, 2014) and pupil empowerment programmes (e.g., Cleary & Zimmerman, 2004), an initiative that directly targets pupils' own understanding and awareness of their psychological experiences may be beneficial in nurturing their autonomous motivation for learning. Thus, the present study explores the feasibility of a pupil-centred intervention in early secondary schools based upon basic psychological needs theory (BPNT; Ryan, & Deci 2002).

BPNT is a sub-theory within the self-determination theory of human motivation (SDT; Deci & Ryan, 2000). According to this theory, optimal psychological growth and self-determined motivation is dependent on the satisfaction of three innate psychological needs for autonomy, competence, and relatedness (Ryan & Deci, 2002; Ryan & Niemiec, 2009). The need for autonomy refers to an individual's experience of volition and personal endorsement of behaviour that is in accord with their personal values and interests (deCharms, 1968). The experience of competence refers to the sense of capability an individual perceives in achieving desired outcomes and goals (White, 1959). Relatedness

refers to experience of connection and acceptance from others through the development of close personal relationships (Baumeister & Leary, 1995). The fulfilment of these needs have been shown to represent the psychological foundation for autonomous motivation, school engagement, better emotional functioning, and indices of well-being (e.g., Chen, 2014; Marchand & Skinner, 2007; Raufelder et al., 2015; Saeki & Quirk, 2015; Taylor et al., 2010; Tian, Chen, & Huebner, 2014). In contrast, a dearth or frustration of these needs can result in amotivation, controlled behavioural regulations, school disengagement and ill-being (e.g., Chen et al., 2015; Haerens et al., 2015; Jang et al., 2016). More discrepant findings have revealed that the satisfaction of competence and relatedness, rather than autonomy, yielded more influence upon pupils' effort (Taylor & Lonsdale, 2010) and engagement (Opdenakker & Minnaert, 2014) at school. Extrapolating from extant evidence (e.g., Katz & Assor, 2007), and evidence in Chapters 2 and 3, the fundamental aspect of pupil autonomy at school may not relate to their perceived choice for activities but rather the extent they perceive personal relevance to these activities to endorse their own participation.

Based on this research, many educational interventions have been underpinned by SDT and BPNT (e.g., Aelterman, Vansteenkiste, Van den Berghe, De Mayer, & Haerens, 2014; Cheon & Reeve, 2015; Cheon et al., 2012; De Naeghel, Van Keer, Vansteenkiste, Haerens & Aelterman, 2016; Reeve & Cheon, 2016; Reeve et al., 2004; Tessier et al., 2008). These interventions focused on creating social environments that are supportive of learners' psychological needs. For example, receiving training workshops and online instructional tools resulted in teachers displaying increased autonomy supportive teaching, which led to their pupils reporting greater psychological need satisfaction, school engagement, and reduced amotivation (Cheon & Reeve, 2015; Reeve et al., 2004). Likewise, the educating and training of teachers to provide autonomy and competence support resulted in teachers

increased use of both strategies (Aelterman et al, 2014) and enhanced pupil autonomous learning (De Naeghel et al., 2016).

Despite the value of these contextual interventions, the conceptualisation of psychological need satisfaction follows an organismic dialectical framework (Ryan & Deci, 2000). Thus, although psychological needs are innate to all individuals, the intrapsychic experience of their fulfilment is unique and personal to the individual (Deci & Ryan, 1991; 2000; Deci, Ryan & Williams, 1996). In other words, a pupil's psychological need satisfaction is dependent upon the relative meaning, or functional significance, that they place upon the social context, rather than any objective properties of the context itself (Deci & Ryan, 1987). Indeed, SDT outlines that pupils can subconsciously facilitate or block their psychological experiences depending on their dominant motivational disposition (see causality orientation theory; Deci & Ryan, 2000). For instance, pupils that have a dominant autonomous orientation are more likely to act in accord with their own values, perceive information and satisfaction from external contexts and regulate their behaviour autonomously. In contrast, pupils with a high controlled orientation are more likely to perceive their context as pressuring and less satisfying which results in them feeling controlled in their behaviour. Pupils that have a high impersonal orientation typically feel their experiences is beyond their personal control and are prone to feeling helpless and ineffective. Such an impersonal orientation may be particularly prominent for pupils that consistently struggle academically or socially at school. Regardless of any need support they are provided, such pupils may find it difficult to experience psychological need satisfaction.

A potential caveat of contextual BPNT interventions is that they place sole reliance on the teacher but may overlook pupils' own motivational disposition, cognitions and perceptions. For instance, teachers' perceptions of the need support that they provide can be out of sync with those of the pupils (Jang et al., 2016; Zeedyk, et al., 2003). Indeed,

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correlations between teacher and student perceptions of need support were found to be small in magnitude (Taylor & Ntoumanis, 2007), or only congruent regarding the support autonomy but not competence (Aelterman et al., 2014). Manipulating the learning context may therefore be ineffective if pupils perceive the context in an alternative way than intended. Targeting pupil cognitions, rather than solely the academic content, can represent a powerful tool to change learning behaviour but can often be overlooked within education systems (Yeager & Walton, 2011). In accord with previous interventions targeting pupils' intrapsychic appraisals (Hudley, Graham, & Taylor, 2007), resilience (Stallard & Buck, 2013), growth mind-sets (e.g., Park, Gunderson, Tsukayama, Levine, & Beilock, 2016) and self-control (Duckworth, White, Matteucci, Shearer, & Gross, 2016), the present study investigates a method of training pupils to become more active in the satisfaction of their own psychological needs so that it can be maintained regardless of any variation in teachers, social groups or learning contexts. Interventions targeting pupils' psychological processes in this way are rare and, to the author's knowledge, no pupil focused intervention has been founded upon the psychological constructs of BPNT.

To provide a method of implementing such an intervention, the use of a pupil completed diary-log is proposed. Reflective diary logs have been shown to be useful in developing learners' awareness and reflection on their psychological experiences (Kember at al., 1999; Shek, 2010). In particular, student completed diary methodologies have been widely implemented within university education to promote reflective learning practise (e.g. Brooman & Darwent, 2012; De Martin-Silva, Fonseca, Jones, Morgan, & Mesquita, 2015; Pavlovich, 2007; Travers, 2011). Diaries are not uncommon in schools and are often used to help pupils record progress with their homework (e.g., Swinson, 2010; Zabrorowski & Breidenstein, 2011) and may help pupils initiate internal dialogue that is personally relevant (Groves & Laws, 2000; Walshe, 2013). Furthermore, it is hoped that volitionally recording

occasions of psychological need fulfilment in a diary-log may help activate pupils' autonomous motivational orientation towards school contexts. Exposing learners to autonomous, rather than controlling, phrases has been found to help prompt learners towards an autonomous orientation (Levesque & Pelletier, 2003; Radel, Sarrazin, & Pelletier, 2009). To this end, such a method may be useful in facilitating pupils' psychological need satisfaction, self-regulated learning (Efklides, 2011) and agentic engagement (i.e. pupils' proactive contribution to their learning and the instructions received; Reeve & Tseng, 2011; Reeve, 2013).

Study Overview

        To summarise, the study had two key areas of investigation. The first aim was to explore the general utility of a reflective diary log intervention from both a pupil and teacher perspective. Although reflective practise is emphasised in higher education (e.g. De Martin-Silva et al., 2015; Travers, 2011), the extent young adolescents may understand their psychological experiences may differ from adult students (Gestsdottir & Lerner, 2008). The second aim was to identify any practical considerations in engaging pupils in the intervention. Regardless of a theoretical rationale, if the intervention does not have any relevance, importance or validity for the pupils it will be ineffective in imparting the intended psychological awareness (Lyst et al., 2005; Miltenberger, 2011). A common problem for many learning-based initiatives is getting learners to participate and engage in the respective initiatives (e.g. see Grant, Kinnersley, Metcalf, Pill, & Houston, 2006). Thus, both pupil and teacher opinions were obtained to help inform how to make the dairy enjoyable, interesting, and practical for pupils to complete. Through the study's entirety, the researcher attempts to inform the applicableness and feasibility of implementing the intervention within secondary schools.

<center>**Method**</center>

Participants

Participants were 22 pupils from Years 7 and 8 (10 male, 12 female; mean age = 12.36 years, SD = 0.73 years; age range = 11 – 13 years old) and their teachers (n = 12; 5 male, 7 female) from two secondary schools in the UK. Twelve pupils and six teachers were recruited from a selective grammar school (pupils' mean age = 12.92 years, SD = 0.29, male = 4, female = 14), with the other 10 pupils and 6 teachers coming from a selective comprehensive school (pupils' mean age = 11.70 years, SD = 0.48, male = 6, female = 10). Fifty-nine percent of pupils were White English, 18% were Black African, 9% were Indian, and 14% reported other mixed ethnicities. Four pupils, all from the comprehensive school, were classified as having a Special Educational Need (SEN). Both schools were co-educational institutions, and taught pupils ranging from 11 to 18 years of age.

Recruitment

Having gained ethical approval from the principal researchers' university ethics committee, purposive sampling strategies were used to recruit contrasting schools and pupils' from the selected year groups. In regards to recruiting schools, it was important to test the feasibility of the intervention in different institutional contexts. Thus, a grammar and a selective comprehensive school were selected that varied in their pupil selection criteria. To test the intervention with pupils of all academic abilities, pupils were recruited from different ability sets across both Year 7 and 8 pupils. Such a sampling method would help determine the feasibility of conducting the intervention across different school institutions, illuminating both similar and unique characteristics between the schools and pupils (Patton, 2002). A more opportunistic sampling approach was adopted to recruit teachers, selecting teachers that taught and had direct interaction with the participating pupils. Prior to the study commencing, all teachers, pupils, and pupils' parents were informed that discussions would be audio recorded, treated in strict confidence and anonymity would be protected in the dissemination

of any findings. Informed parental consent was received for all participating pupils (see Appendix Q), and signed informed consent received from both teachers (Appendix R) and pupils (Appendix S). Two pupil groups and one teacher group were recruited from each school.

Procedure

A three phase procedure was followed. Based on methods from previous school-based feasibility studies (e.g. Mendelson et al., 2010), a series of preliminary pupil and teacher focus groups were conducted to investigate their initial opinions towards the utility and feasibility of the proposed diary log. All focus groups were conducted in a quiet classroom. Following practical guidelines on the number and size of focus groups (Kruegar & Casey, 2014), six preliminary focus groups were planned (i.e. two teacher and four pupil), after which it would be assessed if a critical mass of data had been obtained. All focus groups comprised of six participants, with the exception of one comprehensive pupil group which included four pupils. In line with the schools' policies, a member of teaching staff was present during pupil discussions, either in an adjacent room or in the background of the specified classroom. On average, pupil discussions lasted approximately 45 minutes and teacher discussions lasted between 50 minutes and one hour. The focus groups aimed to acquire knowledge and insights into participants' school world experiences whilst trying not to let any pre-conceived ideas blur their opinions and insights (Cohen, Manion, & Morrison, 2013). An advantage of focus groups is that they enable group synergy and interaction to generate knowledge that is both relevant and applicable within a specific social context (Stewart & Shamdasani, 2014). As pupils and staff were already familiar with one another, it was hoped this would generate ideas that would help inform the applicableness of the intervention (Rabiee, 2004). The principal researcher conducted every focus group and developed a semi-structured interview schedule to provide a generic but flexible framework

for each group discussion (see Appendix T for pupil schedule and Appendix U for teacher schedule). Focus groups were structured into three distinct sections; (1) discuss the potential value of the diary logs; (2) identify any potential barriers to conducting the intervention; (3) gain practical suggestions that may need to be implemented. Thus, group discussions entailed a combined perspective of induction (to uncover unforeseen ideas about the effectiveness of the intervention), and deduction (to interpret generated ideas in line with BPNT theoretical propositions).

Following the preliminary focus groups, the next phase was to pilot a version of the diary-log with pupils to explore the extent they would engage and complete the diary. Pupils received a paper version of the diary for a two week duration. Every effort was made to include as many of the suggestions from the preliminary focus groups in these diaries but some were unfeasible given the limited timescale. Prior to administering the diary-logs, pupils were briefed on the aim of the dairies and how to complete them. Furthermore, written instructions were provided at the beginning of each diary to help pupils complete them. Pupils were able to record activities for each day of the two-week period (i.e. a total of 14 days). It was explained to pupils they could complete the diary for as many days as they wished (see Appendix V for an example of these pupil instructions and dairy). Diaries were presented to pupils in a coloured folder which could be personalised. Teachers were instructed that they could promote, or not promote, the dairies in any way they preferred in order to provide an indication of the extent teachers would engage with the intervention. The investigators had no contact with pupils during this two-week pilot.

The diary for each day was structured into two sections; one relating to competence satisfaction whereby pupils reported activities they perceived themselves to do well, and the other relating to relatedness satisfaction whereby pupils reported activities which they perceived they had worked well with others. For both sections, subsequent boxes were

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provided for pupils to record their feelings during each activity and the reasons they perceived this to be the case. In regards to autonomy, the context in which a person is situated is central to their experience of autonomy (Skinner & Wellborn, 1997; Reeve, 2015). Rather than pupils recording activities where they experienced autonomy, the intervention attempted to foster pupils' autonomy satisfaction by providing them freedom to record experiences that were personal and meaningful to them, and in a manner of their preference (e.g., written, drawn or photos). To avoid pupils perceiving coercion, it was stressed to pupils that the diaries would not be assessed and they were free to use the diary as much as they desired, without repercussions if they did not complete it. Pupils' experience of psychological need satisfaction is not exclusive to school and can be influenced by a multitude of contexts (Milyavskaya & Koestner, 2011). Thus, pupils were free to log any activity they wished (e.g. school, extra-curricular and leisure time activities). To nurture the satisfaction of pupils' needs, the initial premise was for pupils to only record positive experiences and feelings, rather than become overly focused on more deleterious experiences of need frustration. Pupils were instructed that the diaries would be collected at the end of the two weeks and that the content would be examined by the principal researcher but not be seen by the school or their teachers.

The final methodological phase involved conducting follow-up focus groups to acquire pupil and teacher feedback on the dairy-logs. These focus groups followed the same procedure as their preliminary counterparts, with the exception that pupils received a short questionnaire at the beginning of these follow-up discussions (see Appendix W for this questionnaire). These questionnaires provided quantitative data on pupils' perceived difficulty and enjoyment of the diary, the time of day they completed the diary, the type of activities they recorded, and any future preferences. Teacher follow-up discussions were typically shorter in duration (between 20 – 40 minutes) compared to their preliminary

discussions as different teachers varied in their involvement with the diary-logs. The follow-up focus groups were designed to find out how pupils generally found the dairy-logs and any issues they experienced. In particular, these discussions aimed to identify any potential modifications and improvements that would make the diaries easier to complete, more appealing, and more practical. Teachers were also asked if, and how, they may promote the diary within schools (see Appendix X for pupil follow-up schedule and Appendix Y for teacher follow-up schedule).

Data Analysis

To identify key themes, and ensure confidentiality, the principal researcher listened to and transcribed the discussions from each focus group (for a general overview of these transcriptions, see Appendix Z for preliminary discussions and Appendix AA for the follow-up discussions). After the two week pilot, the principal researcher collected the diary-logs and examined them in regards to the number of days that contained content and the quality of this content. The quality of the diary content was rated in the extent that pupils provided a detailed description of each respective activity, indicated how they felt, and considered the perceived reasons for these feelings. Descriptive statistics for pupils' questionnaire responses were calculated using SPSS statistical software (version 22.0).

Results and Discussion

Perceived Utility and Value

Preliminary discussions suggested the notion of enhancing pupils' own awareness of their psychological needs was relatively novel for teachers and pupils. Both initially emphasised contextual factors as being central for pupils' experiences at school, such as teacher feedback, praise, role models, social comparisons, or ridicule from others. Nevertheless, potential value was seen in the diary-log to develop pupils' positive outlooks on situations, which was conveyed as particularly beneficial for pupils low in academic or social abilities. Grammar school teachers expressed that "it is a good idea to get them (pupils)

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to think as their own individual" and that "pupils, teachers, and parents can be quite quick to jump on the negatives, so the diary may help highlight the positive experiences". Furthermore, comprehensive teachers felt that "schools and parents cannot just provide this (pupils' awareness of their psychological needs) on their own, if pupils can highlight these areas and be aware of them, at least if they want, they can do something about it". This value was echoed generically from grammar school pupils, with them suggesting they "often forget a lot of the good things they do", the diary may "help them see situations differently" and would provide them with an opportunity to reflect on positive experiences that they are not often provided. Although some comprehensive pupils offered similar sentiments, their opinion was much more divided with some indicating it might be boring or difficult. This became evident after pupils completed of the dairy as grammar school pupils commented they "reflected more each day" and "remembered the good aspects", whereas this was not suggested by comprehensive pupils. Even within the grammar school, one pupil felt the diary only made them aware of their experiences when completing the diary but not in-between diary entries. Thus despite the potential value, intermittent initiatives may be needed to develop longevity in pupils' psychological awareness and reflection.

Pupil Completion of the Diary

Due to time and technology limitations, a written paper version of the dairy-log was trialled with pupils. In accord with the preliminary discussions, pupils were provided with instructions and example templates to guide them in their completion, as well as specifying a morning and afternoon school activity, and a leisure time activity for each day of the diary. Overall, 18 pupils (82%) returned their diary at the end of the study, with the four non-returned diaries coming from pupils within the comprehensive school. The higher return rate from grammar school pupils may potentially be explained by them having received slightly higher teacher involvement with the dairy-logs, compared to comprehensive pupils that

received no teacher involvement. For instance, a grammar school teacher indicated they did not help pupils in regards to completing the diary but did provide occasional reminders to enquire if pupils had completed and returned their dairy. Pupils expressed mixed opinion on teachers' involvement with the dairy, as one grammar school pupil reported they were "happy getting a well-done", whereas others stated they would feel "pressure" or "like being told off" if teachers were involved. Thus, any teacher involvement would need to be provided in an autonomy supportive, rather than coercive, manner (Reeve & Jang, 2006).

Fifty percent of the returned diaries included content for 11-14 days which suggests substantial engagement with the diary. In contrast, 22% of the returned diaries showed no engagement at all with the diary as no days had been completed or attempted. Furthermore, 56% of the returned diaries were rated as mediocre or poor in quality. This indicates that across both schools, pupils may require additional help in completing the diary and reflecting on their experiences. It is noteworthy that seven out of the eight diaries rated as "good" in quality were from grammar school pupils. This may be explained by the fact that pupils' admission to grammar schools typically requires higher academic criteria than comprehensive schools. Administering the dairy to comprehensive or lower ability grammar school pupils may require additional support to be provided to help them complete the diary effectively. An example of good quality was "I found out I got a good mark in one of my maths papers. I felt happy and proud – as I did better than my last two results" (i.e. competence satisfaction) and "In class I helped my partner with their classwork. I felt pleased and supportive – they didn't know how do the work and it was nice to help them" (i.e. relatedness satisfaction).

Potential Barriers

Four specific barriers emerged from focus group discussions and the two-week pilot that may hamper the effectiveness of the proposed diary-log. These are: (1) the perceived difficulty in completing the diary; (2) a lack of pupil enjoyment; (3) pupils forgetting to

complete the dairy; (4) a lack of personal relevance. Quantitative results from pupils'

questionnaire responses are presented in Table 5.1.

Perceived Difficulty. Preliminary teacher discussions raised concerns regarding the

extent pupils would be able to develop the intended psychological awareness independently.

For instance, they explained that pupils may be able to log activities and their feelings but

could not see it working if there were not regular meetings with someone to help them

understand the link between the two. One grammar school teacher believed pupils may have

a narrow definition of their psychological experiences and that for many pupils "simply

remembering may mean reflection". Teachers also warned against having vague large boxes

of writing that would be intimidating or confusing for pupils to complete. Pupils mirrored this

view, suggesting they would be less likely to complete the diary if they felt they had to fill

out a large box of writing and would prefer specific occasions to be outlined for them to

complete (e.g. two classes and a leisure activity). Quantitative findings from the pilot

indicated that only 14% of pupils reported they found the diary hard (see Table 5.1). On the

contrary, pupil feedback discussions suggested that a number of pupils may have found some

common difficulties. First, they outlined that the large written boxes were quite "confusing",

"daunting" and appeared "too much work". Pupils from both schools expressed they would

have preferred short questions or clear instructions to follow rather than open boxes. Second,

and in contrast to initial suggestions, pupils found the specification of two school lessons and

a leisure activity to be "restrictive" and "limiting" of their thinking. Examination of the

returned diaries found that the type of recorded activities varied between school tests and

group work (55%), sport (41%), after-school clubs (14%), and family and friends (9%). On

the whole, pupils did not seem to struggle with thinking of activities to record. This is may

not have been the case for all pupils, however, as some mentioned they found it "hard to

think of things" and hence would likely require additional help with selecting activities.

Third, pupils expressed a desire to record negative experiences and feelings because they were more likely to fabricate positive activities, or not complete the dairy at all, in the event that they had a bad experience. Some pupils commented "if I had a bad day, I would look at the diary and not write anything" whilst another said "on a bad day, I just wouldn't write anything and may make things (positive) up". It may be that restricting pupils to only positive experiences may potentially thwart their sense of autonomy as pupils may perceive a lack of volition to record their desired outcomes (Reeve, 2009), which may subsequently lead to pupils becoming frustrated or disengaged with the diary.

A Lack of Enjoyment. A general consensus emerged from teacher and pupil discussions that a written version of the diary would be unlikely to be successful. Pupils, mainly from the comprehensive school, commented that the written format looked "hard", "boring", "would take a long time" and would be more likely to be lost. Findings from the pilot showed an even split in pupils' enjoyment of the diary, with 50% reporting no enjoyment and 50% reporting enjoyment (see Table 5.1). Strikingly, 83% of grammar school pupils reported they enjoyed the diary compared to only 10% of comprehensive pupils. Thus, it seems clear that the diary in its present format would not be appealing for comprehensive pupils. Delving further, reasons for pupil enjoyment seemed to relate to the psychological and affectionate consequences of completing the dairy, such as "it helped them stay positive" (23%), "it was interesting and made them feel happy" (14%), and "it increased confidence" (5%). Contrastingly, reasons for a lack of enjoyment seemed associated with issues regarding the completion of the diary, such as "it was boring" (14%), "was too much work and writing" (14%), and "it was confusing" (14%). Four pupils did not report a reason for their perceived level of enjoyment. Similar to previous problems found with school diary logs (e.g., Barker & Weller, 2003), a lack of enjoyment seemed to be underpinned by the written components being compared to school homework. A written version seems unlikely to attract pupils that

are already disengaged on an academic front. Table 5.1 demonstrates that 73% of pupils

would prefer an electronic mobile app version of the diary. This was the case for every

comprehensive pupil. The comprehensive school regularly incorporated electronic

technology within regular teaching practise and thus it is likely these pupils would be familiar

with the use of electronic smart devices. This preference was more varied between grammar

school pupils, with 50% of pupils preferring an electronic format and the other 50%

preferring a paper format. It is interesting that both a lack of enjoyment (i.e. 82% of 11 and

12 year old) and preference for an electronic app (i.e. 100% of 11 and 12 year old) were most

prevalent with younger pupils. This may derive from a higher proportion of the sample's

younger pupils coming from the comprehensive school, whom typically reported less

enjoyment. Nonetheless, these findings suggest that an electronic app diary may be more

effective in engaging younger pupils than a written version.

      Forgetting. Preliminary discussions with both teacher and pupils emphasised that

pupils would need reminders to sustain their interaction with the diaries. Indeed, pupil

feedback demonstrated that forgetting to complete the diary was a fundamental issue which

was unanimous across both schools. Pupils expressed the diary "was difficult to remember"

or they "just did not remember to do it at all", with only 23% of pupils reporting that they

often remembered to complete the dairy. Furthermore, a number of pupils explained they

would complete numerous diary entries retrospectively if they had forgotten to complete the

diary on a previous day. Although pupils were not required to complete every day of the

diary, it seems unlikely pupils will get into a habit of using the diaries if they are not provided

reminders; particularly given the multiple classes and academic requirements they are

required to juggle (Brophy, 2010). Pupils' remembrance may have connotations with where

they completed the diary. Over 90% of pupils reported they completed the dairy at home,

either after school or in the evening, with some pupils indicating this was when they

remembered or had spare time. A potential reason for this may have been that pupils were not provided time during school to complete the dairy. It is important not to give pupils too much extra work to do outside of school (Good & Brophy, 2003), and pupils' experiences of school activities may be more salient to accurately log during school time. As suggested by others (e.g., Barker & Weller, 2003), however, some teachers felt the diary would fail to engage pupils if it became part of regular school lessons. Teachers suggested that "time could maybe be set aside at the end" of a lesson but teachers from neither school indicated that they actively promoted the diary during the pilot, apart from the occasional comment to pupils.

Perceived Relevance. A further worry from teachers was that pupils would not perceive any salient benefit from using the diary. In generating social validity (Miltenberger, 2011), teachers voiced that pupils would need to see some salient progression or improvement through their use of the diary, with one comprehensive teacher suggesting there was a "risk really negative kids would not do it". This lack of perceived purpose may have been an underlying determinant for the comprehensive pupils' lower return and enjoyment rates for the diary. This perceived personal relevance may also be important in nurturing pupils' autonomy satisfaction throughout the intervention (Assor et al., 2002). In fact, pupils from both schools indicated that they "didn't think there was a point" or "didn't see a reason" for doing the diary independent of any other incentive (e.g., school achievement points which could be exchanged for monetary awards). In hindsight, it seems unrealistic to expect the diary alone to provide pupils with a meaningful reason to engage with the intervention.

Practical Suggestions

To address and overcome these potential barriers, teachers and pupils provided an array of suggestions that could be implemented to make the intervention more feasible. These are distinguished into four categories: (1) Facilitating Completion; (2) Enhancing Enjoyment; (3) Reminders; (4) Generating Personal Relevance.

Facilitating Completion. First, teachers explained that pupils would need to be "guided towards an answer". To avoid problematic large boxes of writing, teachers expressed that pupils would find it "easier when broken down" and "given options". The use of an electronic app would allow drop-down options to be presented which would eliminate the large boxes. As pupils had found the specified activities (i.e. school and leisure activities) to be restrictive, an electronic app would also enable pupils to select an activity from a series of options which would be more in line with their experience, and eliminate the perceptions that they had to answer a prescribed activity. Teachers and pupils suggested that these options could be progressively reduced over time to encourage pupils to think of their own examples. Second, unanimity emerged for intermittent sessions to be provided to help guide pupils regarding how to complete the diary and promote awareness of their psychological needs. Pupils from both schools expressed that "guidance would definitely help" and that feedback in these sessions may act as a source of incentive for them to complete the diary. An issue for pupils in the present study may have been that they were not provided a structured environment, in terms of clear expectations and regular guidance for completing the dairies (Skinner & Belmont, 1993). Particularly for the comprehensive pupils, the diary may have seemed confusing and chaotic with minimal guidance from teachers or researchers (Wang & Eccles, 2013). In line with previous evidence on emotional support (Baker, 2006; Furrer & Skinner, 2003), pupils explained they would prefer they had help "if they were struggling" and would motivate them "if someone is seeing their progress". In this regard, contextual need support strategies (i.e. teacher education to provide need supportive contexts; Aelterman et al., 2014; Cheon & Reeve, 2015; Reeve et al., 2004) would be invaluable to ensure that these session were supportive of pupils' psychological needs. Third, pupil feedback indicated that it would be worthwhile allowing them to record both negative and positive experiences within the diary. In accord with a notion of positive psychology (Gable & Haidt, 2005;

Huebner, 2004), it is valuable not to deny the existence of negative experiences and help pupils understand it is how they perceive situations that will influence their feelings and behaviours, rather than their actual ability.

Increasing Enjoyment. It seems evident an electronic smart device format (e.g. mobile phone, tablet, or web application) would be more appealing to pupils. One comprehensive teacher explained that "an electronic app would be onto a winner" whilst a grammar school teacher referred to pupils as "phone-tastic". Pupils from both schools showed enthusiasm for an electronic app, indicating it would be more entertaining, accessible, and personable. Pupils also stated that they "are always on my phone", "an app and using emoji's (animated ideograms) would be really cool", and "make it (the diary) easier to complete". Furthermore, an electronic version would enable pupils to record activities in a variety of methods, such as uploading pictures, videos, audio clips, while still allowing pupils to write diary logs and take a picture to upload onto the app database. Although the use of electronic technology has been shown to have benefits for school learning (Deaney, Ruthven, & Hennessy, 2003; Martin & Ertzberger, 2013), it would need to be ensured that an electronic dairy did not become a distraction to pupils during regular school lessons (Shrivastava & Shrivastava, 2014).

Table 5.1

Number of Pupil Ratings of Two-Week Trialled Written Diary –log

		Total	School		Gender		Age			Ethnicity		SEN	
			Comp	Gram	Boy	Girl	11	12	13	White	Other	Yes	No
		(N=22)	(n=10)	(n =12)	(n=10)	(n=12)	(n=3)	(n=8)	(n=11)	(n=13)	(n=9)	(n=4)	(n=18)
Enjoyed	Yes	11	1	10	4	7	1	1	9	6	4	1	10
	No	11	9	2	6	5	2	7	2	7	5	3	8
Difficulty	Easy	13	6	7	6	7	2	4	7	8	5	2	11
	Neither	6	3	3	4	2	1	3	2	3	3	2	4
	Hard	3	1	2	0	3	0	1	2	2	1	0	3
Time of Completion	Morning	0	0	0	0	0	0	0	0	0	0	0	0
	Lunch Time	0	0	0	0	0	0	0	0	0	0	0	0
	Afternoon	1	0	1	0	1	0	0	1	1	0	0	1
	After School	7	2	5	4	3	1	1	5	3	4	1	6
	Evening	14	8	6	6	8	2	7	5	9	5	3	11
Place of Completion	School	2	0	2	0	2	0	0	2	2	0	0	2
	Home	20	10	10	10	10	3	8	9	11	9	4	16
Likelihood To Remember	Never	3	3	0	3	0	0	3	0	1	2	0	3
	Rarely	3	2	1	0	3	0	2	1	2	1	0	3
	Sometimes	11	4	7	5	6	2	3	6	8	3	3	8
	Often	5	1	4	2	3	1	0	4	2	3	1	4
	Always	0	0	0	0	0	0	0	0	0	0	0	0
Preferred Format	Paper	6	0	6	2	4	0	0	6	2	4	0	6
	Mobile App	16	10	6	8	8	3	8	5	11	5	4	12
	Email	0	0	0	0	0	0	0	0	0	0	0	0

Modern schools often utilise existing web-applications such as Edmodo.com (which enables open interaction between teachers, parents and pupils; see Holland & Muilenburg, 2011), and ShowMe.com (which enables teachers to share learning videos with pupils; see Spencer, Coutts, Fagan, & King, 2013). In contrast to these applications, teachers suggested an electronic version of the proposed diary may represent a more personalised method to allow a database of experiences to develop over time and which pupils could look back on. Pupils echoed this view, indicating they felt an electronic app would be "easier to reflect upon" compared to a written version. Extrapolating from prior suggestions (Barker & Weller, 2003), care would need to be taken to ensure the confidentiality of pupils' diary entries, should they desire it. For instance, disparity emerged between pupils to the extent they would prefer to keep their diary personal or share with other pupils. Some pupils explained they may feel "less talented" if they compared the diary with others. To evade pupils' adoption of ego involvements (Ryan & Deci, 2000) or performance avoidance goals (Elliot & McGregor, 2001), a fundamental aspect of the intervention would be to emphasis pupils' own self-referenced psychological need satisfaction, rather than making comparisons with other pupils.

Reminders. Both teachers and pupils expressed that email reminders would not work as pupils vary in the regularity they check their school emails. Pupils explained a mobile app would allow regular notifications, such as popups and alerts, which would appear on their smart device to remind them to complete their diary entry. In accord with pupils' sense of autonomy, some pupils expressed that they would "like to set their own individual reminder" so they would receive them at their most favoured time. This seemed important to pupils as they explained they may "not look at the notification" or it would be "annoying" if they received them when they could not do the diary.

Generating Personal Relevance. To engender pupils' sense of social validity and autonomous engagement with the diary (Miltenberger, 2011), teachers suggested the diary

could be incorporated into a wider initiative (e.g., a "challenge" or "presentation" day). A grammar school teacher explained that pupils like being "provided a sense of responsibility" and that offering a salient event to work towards would engage them. Teachers also indicated that a pre-scheduled event would provide pupils with a specific timeframe rather than the diary seeming endless. Providing relevance is a key aspect of supporting autonomy (e.g., Assor et al., 2002), and the idea of a challenge day was well received by pupils, with one pupil stating the initiative needed "an event or challenge that is to do with the diary…I know it has meaning to you (i.e. the researcher) but to us it is just a diary". Other extrinsic motives were suggested by pupils, such as specific prizes and merit marks that could be collected to get school awards, but there may be a risk these external contingents could compromise pupils' psychological need satisfaction if their motives became exclusively regulated by them (see internalisation process; Deci & Ryan, 2000). Pupils from both schools also emphasised the need to have someone acknowledge their completion of the diary, explaining "it would make me feel like I am not doing this for nothing, and they are acknowledging I am actually doing work". Extrapolating from transformational teaching (Wilson et al., 2012), need supportive sessions may not only help pupils complete the diary but may facilitate their engagement (Jang et al., 2010). Pupils also suggested that "if it was less school related, more people would do it". They indicated the diary would need to appear dissimilar to school work with any supportive sessions being conducted in informal contexts that are unlike school classes. Comprehensive teachers also indicated that the diary may be initially best targeted at pupils lower in academic or social abilities, as it may lose its appeal if it was promoted across whole classes.

Study Limitations

The present findings demonstrate that a pupil completed diary log may be a feasible and acceptable tool to help develop pupils' own awareness of their intrapsychic psychological

need satisfaction. A particular strength of the study is that both teacher and pupil opinions were acquired regarding the intervention. Although pupil perceptions of the diary are fundamental to its potential effectiveness, if teachers do not also see a benefit then it will be unlikely to be incorporated into school programmes (Witt, 1986). One limitation of the study is that the sample size was relatively small. Secondary schools typically comprise large pupil cohorts and it will present a much more formidable task to administer the intervention on a larger scale. Despite conscious efforts to recruit a heterogeneous pupil sample, the recruitment method may also have biased the sample towards more typically engaged pupils. Nevertheless, although the findings cannot be generalised to pupils that did not volunteer or provide parental consent, the attained responses are invaluable to informing the applicableness of the intervention within secondary schools. Finally, it is acknowledged that the next phase will be to test the effectiveness of the intervention in regards to its potential in increasing pupils' psychological need satisfaction and academic performance. Regardless if the proposed intervention is feasible to conduct within schools, if it is ineffective in enhancing pupils' psychological needs and academic outcomes then it will be futile to implement on a generic school level.

<div align="center">**Conclusions for Future Design**</div>

Inferring from the concept of pupil-centred learning (e.g. Smit, Brabander & Martens, 2014), the present study proposes an intervention that targets pupils' awareness of their intrapsychic experiences of psychological need satisfaction (Sheldon & Gunz, 2009). The development of learners' psychological processes has been suggested to have substantial value in facilitating academic progression (Yeager & Walton, 2011). The present method aims to use a diary log to help pupils become more active in their search for psychological need satisfaction by logging experiences of competence and relatedness which are personally meaningful. Focus groups with teachers and pupils, along with a two week pilot of the diary,

revealed an electronic app version of the diary would be most appealing for pupils and allow entries to be made in a preferred method (i.e. video, pictures, audio, written and emoji's). An electronic app would also allow reminder notifications to be sent to pupils' smart device whilst drop-down options could be provided to help prompt their completion. This would help make the diary appear like an interactive and non-schoolwork related activity. The use of app technology was seen as particularly favourable by younger pupils and may be much more engaging than a written format. Allowing pupils to record experiences of psychological need frustration, as well as satisfaction, may also encourage truthful completion and make the diary more relatable to their real life experiences.

The intervention would need to be integrated with existing need supportive sessions (e.g., Aelterman et al., 2014; Cheon & Reeve, 2015) to help guide pupils' completion of the diary and nurture their awareness of their psychological needs. In accord with recent literature (Hospel & Galand, 2016; Jang et al., 2010), it will be important that these sessions support pupils' autonomy and competence towards the diary. Furthermore, pupils expressed that such sessions may also offer additional encouragement for them to complete the app. While these face to face sessions may help pupils experience competence in completing the diary, pupils' autonomous engagement with diary may also be fostered by culminating the intervention with a showcase event for pupils to work towards (e.g., an 'activity' or 'challenge' day). This showcase event may help pupils perceive personal relevance towards the diary and create a sense of social validity for pupils to sustain their engagement with the diary. In conclusion, the present findings indicate that a pupil focused intervention may be feasible to conduct with secondary school pupils. Further analytical research would be required to examine the validity and effectiveness of the intervention in actually enhancing pupils' psychological need satisfaction.

Chapter 6

General Discussion

The central objective of this thesis was to understand and extend knowledge of how pupils' basic psychological needs of autonomy, competence, and relatedness may enhance or diminish their psychological, behavioural and academic functioning during early secondary school. Building on prior evidence, this thesis addressed two methodological gaps by adopting a person-centred approach to pupils' psychological need satisfaction and longitudinally assessing if each psychological need predicted conceptions of change in school attainment. Two practical gaps were also addressed by examining if pupils' psychological need frustration explained active and passive forms of classroom disengagement, and investigating the feasibility of conducting an intervention targeting pupils' own psychological need satisfaction. This final chapter begins by providing a summary of the key findings of these research chapters before moving on to discuss the conceptual and applied implications in more detail.

Summary of Key Findings

The person-centred methodology revealed four distinct pupil psychological need profiles existed within the pupil sample. The satisfied group reported the highest satisfaction for each psychological need and revealed the highest classroom performance, well-being, autonomous motivation and lowest ill-being, whereas a dissatisfied group reported the opposite. A group only high in competence satisfaction and another group only high in relatedness satisfaction reported similar but moderate levels of autonomous motivation, well-being and ill-being despite showing different profiles. Autonomy represented the least satisfied need within each respective profile. Moreover, autonomy satisfaction in Chapter 3 was found not to predict school grades nor explain temporal attainment patterns. In line with these findings, the measurement of school autonomy is considered in more detail later in this chapter.

In regard to school performance, findings in Chapter 2 and 3 both associated competence satisfaction with higher pupil attainment at school. Specifically, research in Chapter 2 illustrated pupils with profiles higher in competence satisfaction were rated as performing better in the classroom by their teacher. Research in Chapter 3 advanced these findings, illustrating that pupil differences in competence satisfaction predicted increases in actual school grades across the school year. Additionally, pupil differences in relatedness satisfaction were found to buffer against the summer decay of school grades following their summer vacation from school.

Examination of different types of classroom disengagement in Chapter 4 revealed the frustration of pupils' competence was associated with passive disengagement which was underpinned by reductions in subjective vitality. In contrast, pupils' autonomy frustration was indicative of both active and passive disengagement but neither process was explained by the experience of subjective vitality. These disengaging processes were all shown to be associated with pupil perceptions of psychologically controlling teaching.

Finally, the feasibility study in Chapter 5 identified potential barriers and recommendations for implementing a pupil-orientated intervention based upon the basic psychological needs. The intervention was proposed as a pupil completed diary log and attempted to help pupils become more active in their search for psychological need satisfaction as opposed to solely depending on the learning environment. In general, teachers and pupils indicated the intervention may be feasible and could have substantive benefits in developing positive thought patterns to help pupils academically at school. Nevertheless, it was stressed that the dairy would need to be easy for pupils to complete, enjoyable to interact with, accompanied by reminders and have personal meaning for pupils. Teacher and pupil suggestions indicated an electronic app version of the diary would be most appealing and easy to complete, as well as allowing notification reminders. Findings also indicated the diary

would need to be integrated with existing need supportive sessions (e.g., Aelterman et al., 2014) to assist pupil completion and conclude in a showcase event (e.g., an 'activity' day) to provide pupils' with a salient and personal reason to use the diary.

Together these findings indicate how the satisfaction and frustration of pupils' psychological needs may explain classroom functioning, attainment patterns and different types of school disengagement. The findings also provide insights into advancing existing contextual BPNT interventions by tapping into pupils' own cognitive aspects of psychological need satisfaction. In the subsequent sections, these findings are discussed in more detail with regard to the methodological and practical gaps identified in Chapter 1, along with potential limitations and recommendations for future research. The thesis also provides practical recommendations for teachers in line with the present findings.

Methodological Considerations

Pupil Psychological Need Profiles

Concordant with the theoretical tenets of BPNT (Deci & Ryan, 2000; 2002), the satisfaction of all three basic psychological needs is required for pupils' optimal psychological and academic development. Traditionally, BPNT research has shown this to be the case by treating the three psychological needs as separate variables (e.g., Chen, 2014; Raufelder et al., 2015). Although such a variable-centred methodology offers substantial value for robust statistical analyses and conceptual clarity of BPNT-based variables, it can overlook the reality that pupils function due to the interaction of all three needs in combination (Bergman & Andersson, 2010). The adoption of a person-centred methodology places the focus on the individual, and the interaction of all variables, and thus offers useful insights into how pupils may actually function due to their psychological need composition (Bergman & Andersson, 2010). This approach has been taken to assess pupil profiles comprising of autonomous and controlled motivations (e.g., Vansteenkiste, Sierens, Soenens,

Luyckx, & Lens, 2009), yet there seems to be a vacancy for such an approach to be taken to examine pupils' psychological needs. The researcher addressed this void in Chapter 2 by identifying if pupil groups with different psychological need profiles existed within classrooms, and if they differed in school performance, well-being and motivation.

The emergence of four distinct profiles illustrates that pupils may experience the three psychological needs in different ways within school classrooms. These different pupil profiles provide insight into the interplay between pupils' psychological needs and outline specific need deficits that some groups may experience in classrooms. Pupils in the competent group were found to have particularly low autonomy satisfaction and relatively low relatedness, whereas the related group reported relatively low competence satisfaction. These groups reported relatively high competence or relatedness satisfaction, respectively, but the satisfaction of these needs was not as high as the satisfied group which reported the highest satisfaction across all three needs. Building on previous findings regarding the balanced satisfaction of all three psychological needs (Sheldon & Niemiec, 2006), the present findings suggest the optimal satisfaction of each need may be facilitated by the satisfaction of the other two needs. For example, it seems unlikely that groups will report optimal competence satisfaction when they experience a lack of autonomy and relatedness. Conversely, the dissatisfied group displayed the lowest satisfaction for each individual need when reporting low satisfaction across all three needs simultaneously. Although the three psychological needs represent distinct entities and will be experienced separately, there may be apparent synergies that exists between the three needs. The person-orientated findings in Chapter 2 further verify BPNT proposals for pupils to experience the satisfaction of three psychological needs in classrooms (Ryan & Niemiec, 2009).

In line with previous evidence regarding pupil well-being (e.g., Saeki & Quirk, 2015), autonomous motivation (e.g., Standage et al., 2005) and school achievement (Badri et al.,

2014), the satisfied group reported the highest levels of well-being, autonomous motivation, and teacher-rated performance. In contrast, the dissatisfied profile demonstrated the lowest classroom performance, well-being, autonomous motivation and highest levels of ill-being. The two groups reporting specific need deficits fell in-between the satisfied and dissatisfied groups, demonstrating moderate levels of each outcome. Although the satisfaction of only one need may enable pupils to function moderately well in class, it is the satisfaction of all three needs in combination that facilitate the most adaptive psychological and academic functioning (Ryan & Deci, 2002).

The group patterns indicate that perceived competence may be particularly valuable for pupils at school. The largest discrepancy between the dissatisfied and other groups was in competence satisfaction, and groups reporting higher competence satisfaction were rated as performing better in class. This suggestion is in accord with previous findings regarding pupil grades, effort and well-being (e.g., Jang et al., 2009; Taylor & Lonsdale, 2010; Véronneau et al., 2005). It seems pupils experiencing a lack of competence satisfaction at school may be at particular risk of maladaptive school functioning.

The most predominant pupil cluster in Chapter 2 was the dissatisfied profile which is particularly concerning for schools. These pupils may be at the greatest risk of poor academic developments, school truancy, and classroom delinquency (e.g., Archambault et al., 2009; Henry, Knight & Thornberry, 2012). The next most predominant profile was the competent profile, with these pupils feeling they could do class work but not reporting high autonomy or relatedness. Given that nearly two thirds of the pupil sample displayed these two profiles, there seems a necessity for further need supporting initiatives to be developed and conducted within secondary schools. This was a driving incentive for investigating one such method in Chapter 5.

These group patterns would not have been uncovered through a traditional variable-centred methodology which typically considers the linear pattern between variables rather the complex and interactive nature of those variables together (Bergman & Magnusson, 1997). This is not to say that a person-centred methodology does not have limitations. The present method of cluster analysis was based on hierarchal clustering algorithms which then require subjective interpretation to understand the pattern and processes associated with each psychological need profile (Bauer & Shanahan, 2007). Consequently, such approaches can be considered less statistically robust compared to correlations and relationships investigated within variable-centred analysis (Bergman, Magnusson, & El-Khouri, 2003). Nevertheless, uncovering such patterns between pupils' psychological needs may provide educators with a clearer understanding of why certain pupils may display less optimal, or maladaptive, classroom motivation or behaviour.

This knowledge may also provide educators with insights into developing future teaching practise for specific pupil requirements. Pupils in the dissatisfied group may initially benefit most from teaching that supports both their autonomy and competence simultaneously (e.g., Hospel & Galand, 2016). Such a strategy may also help enhance the competent group's low autonomy satisfaction and the related group's relatively low competence and autonomy satisfaction (e.g., Jang et al., 2010; Reeve et al., 2004). It is also important that such strategies are provided with emotional support to foster pupils' feeling of relatedness in the classroom (e.g., Wang & Eccles, 2013). These need supportive teaching strategies are outlined in more detail in the penultimate section of this general discussion.

To summarise, these person-centred findings offer further validity to the conceptual and practical importance of pupils' psychological need satisfaction in schools (Ryan & Deci, 2002). The identification of distinct pupil profiles illustrate how pupils may differ in their psychological need experiences, and personal and academic outcomes. A noticeable trend in

these group associations was that autonomy was the least satisfied need in every group. In the same vein, autonomy satisfaction was unexpectedly found not to predict school grades nor explain temporal attainment patterns in Chapter 3. These autonomy associations seem worthy of further consideration and interpretation, and will be discussed in more detail in the following section.

Pupil Autonomy at School

The experience of autonomy is a central component of both SDT and BPNT (Deci & Ryan, 2000). Fundamentally, BPNT posits that autonomy requires behaviour to be self-endorsed and emanate from one's self rather than controlled by external contingencies (Ryan, Kuhl & Deci, 1997). School classrooms represent compulsory contexts in which pupils have to undertake prescribed activities. Thus, it could be argued that pupil autonomy satisfaction may not be easily fostered in compulsory schools (Brophy, 2010). Prior evidence, however, has shown that pupils can experience high autonomy satisfaction in classrooms which support rather than thwart their autonomy (e.g., Cheon & Reeve, 2015). The finding that autonomy represented the least satisfied need in Chapter 2 may be an indication that the sampled classrooms may be particularly controlling in nature. These teachers and schools may benefit from interventions that facilitate the support of pupils' autonomy at school (e.g., Cheon & Reeve, 2013; Reeve et al., 2004). Pupil autonomy satisfaction has also been found to predict better school grades as a consequence of higher school engagement (Jang et al., 2012). Thus, it may be that autonomy facilitates higher school grades through other mechanisms (e.g. school engagement) and not directly as found in Chapter 3.

Although these explanations are plausible, an alternative interpretation of these autonomy findings may derive from the current measure of autonomy satisfaction used in Chapters 2 and 3. The multidimensional nature of autonomy has been widely debated in the literature and become difficult to clearly interpret due to inconsistencies in definition (e.g.,

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Houlfort, Koestner, Joussemet, Nantel-Vivier, & Lekes, 2002; Noom, Deković, & Meeus, 1999). From a BPNT perspective, a key distinction is that autonomy does not imply independence, whereby pupils do not rely on others for guidance or are free to do as they please (Chirkov, Ryan, Kim & Kaplan, 2003). BPNT's interpretation of autonomy refers to the self-governance of behaviour; in other words, pupils will autonomously participate in compulsory school activities when they feel they do so out of their own volition (La Guardia, Ryan, Couchman, & Deci, 2000). In this regard, autonomy has been operationalised into affective and decisional components (Houlfort et al, 2002). The affective components relate to aspects of volition (Reeve et al., 2003) and psychological freedom (Hmel & Pincus, 2002). The decisional aspects relate to ownership of behaviour, whereby behaviour is void of external coercion but in line with personal choice (Reeve et al., 2003), interest (Weinstein, Przybylski, & Ryan, 2012) and perceived relevance (Assor et al., 2002).

A potential limitation of the present autonomy measure is that the items predominately tapped into pupils' sense of perceived choice for school activities. These items placed the behavioural choice itself, rather than volition or behavioural ownership, as the focal criteria by considering the extent pupils felt they could choose to do activities at school (e.g., "I can decide which activities I want to learn"; "I have a say regarding what skills I want to learn"). In reality, pupils will be aware that they will not have free choice over prescribed school activities and learning material. The finding that autonomy satisfaction did not predict temporal attainment patterns in Chapter 3 may suggest that pupil autonomy reflecting choice over school activities may not be indicative of pupil grades. These findings are not dissimilar from previous evidence that found autonomy satisfaction did not associate with pupil effort when measured using the same items as the present research (Taylor & Lonsdale, 2010) and negatively predicted school grades when operationalised as independent decision – making (Isakson & Jarvis, 1999). Pupil reports of being able to choose school

activities may not accurately reflect pupils' autonomous participation at school (e.g., D'Ailly, 2004; Katz & Assor, 2007). From a practical perspective, there may be occasions when pupils are allowed to choose learning material but still feel forced to complete it. The provision of pupil choice will only enhance autonomy if the choice is relevant to pupils' personal values, goals and interests (e.g., submitting work in a preferred format; Assor et al., 2002; Katz & Assor, 2007). Pupils may in fact need teacher guidance and structure regarding learning activities to help direct their academic development, but the relevance of these activities need to be explained to pupils so they perceive volition and ownership over their participation (see Hospel & Galand, 2016; Jang et al., 2010).

To summarise, the findings regarding pupil autonomy in Chapter 2 and 3 may offer credence for further consideration of the measurement of young adolescents' school autonomy. It should not be interpreted that autonomy satisfaction is not important for pupils' school grades, nor that pupils cannot experience high autonomy satisfaction at school. Instead, it seems important that any measures of perceived choice explicitly tap into pupils' feelings of volition and personal relevance for the choice as opposed to the choice itself (Assor et al., 2002; Reeve et al., 2003). The next section discusses psychological need satisfaction in relation to school attainment, specifically focusing on the longitudinal findings in Chapter 3.

Conceptualisation of Change in School Attainment

The person-centred findings in Chapter 2 illustrated that pupils experiencing the satisfaction of all three needs were rated as performing better in the classroom. Across all four groups, groups higher in competence satisfaction were associated with higher ratings of classroom. Such findings are in line with previous evidence (e.g., Hardre & Reeve, 2003; Jang et al., 2009). One potential caveat to these findings was the small effect size for these group differences in performance, compared to the outcomes of well-being, ill-being and

motivation. A potential reason for these smaller effect sizes may be that classroom performance was the only outcome not measured by pupil self-report, and therefore would not be suspect to inflated effect sizes associated with possible common method variance (Lindell & Whitney, 2001). It may also be that there are additional factors other than psychological needs that explain variation in school performance. For example, school attainment has also been found to be influenced by factors such as academic help from parents or teachers (e.g., Levpuscek, Zupancic, & Socan, 2012), behavioural engagement (e.g., attendance; Li & Lerner, 2011) and prior numeracy or literacy skills (Duncan et al., 2007). The investigation in Chapter 3 expands on the cross-sectional evidence in Chapter 2 by investigating the temporal change and summer decay of actual pupil grades rather than teacher perceptions. In contrast to the clustering of the three needs in Chapter 2, the disentanglement of each need in Chapter 3 allows for more robust statistical analysis of their unique relations with the two conceptualisations of change (i.e. over time and summer decay).

Specifically, the findings revealed that pupil differences in competence satisfaction not only predicted school grades but resulted in increases in grades across the school year. Previous longitudinal evidence suggested that increases in competence satisfaction were particularly important for dealing with the demands of school and academic adjustment (Ratelle & Duchesne, 2014). It seems that pupils' experiences of competence satisfaction may help drive their attainment when at school. Extrapolating from previous findings (e.g., Durik, Vida, & Eccles, 2006; Taylor & Lonsdale, 2010), pupils higher in competence satisfaction may be more likely to display greater effort and learning behaviour at school which may help enhance their school grades over time.

When interpreting these temporal attainment increases associated with competence satisfaction, two important considerations arise. First, it is noteworthy that even pupils low in

competence satisfaction still demonstrated an increase in school grades but to a lower degree than pupils higher in competence. This would insinuate that all pupils may naturally increase in school grades across the school year regardless of their competence satisfaction. Although a precise cause for this generic attainment increase is unable to be determined from the present data, another possibility may be that teachers may have a tendency to mark work progressively higher throughout the school year. Nevertheless, it is encouraging that all pupils show academic progression over their time at school. The second consideration from the data is that pupils achieving higher grades may be at a predisposition to experience higher competence at school. Previous findings have shown that pupils that were more engaged at school reported higher competence satisfaction as consequence of their teachers' support (Opdenakker & Minnaert, 2014). Deducing from this evidence, it may be that pupils achieving higher school grades receive more positive reinforcement and academic support from teachers which subsequently nurtures competence satisfaction. If this is the case, future initiatives may need to help teachers foster competence satisfaction for pupils that do not achieve as high grades.

In regards to the summer decay of school grades, the finding that relatedness satisfaction may protect against these summer attainment declines offers new insights into enhancing pupil attainment across different school years (e.g., Cooper et al., 1996). Both cross-sectional (e.g., Baker, 2006) and longitudinal (e.g., Song, Bong, Lee, & Kim, 2015) evidence have illustrated that close supportive bonds and attachment at school can have positive relations with school grades. The present evidence advances these findings, indicating that relatedness satisfaction may be important for facilitating pupils' school grades following a long lay-off from school. Experiences of school relatedness have been associated with positive school affections, social functioning (e.g., Davidson, Guest, & Welsh, 2010; Gest, Welsh, Domitrovich, 2005), future school engagement (Furrer & Skinner, 2003) and

help-seeking behaviours (Marchand & Skinner, 2007). Indeed, the satisfied pupil group in Chapter 2 displayed the highest well-being and reported high levels of relatedness satisfaction. Pupils that feel emotionally supported and connected at school may be more likely to look forward to school, strive to meet the expectations of school, and be more likely to seek help from supportive social groups either over the summer or immediately upon returning to school after the summer holiday.

Interpersonal school bonds have been found to protect against negative family relations at home (Loukas, et al., 2010) and offer a protective resource against poor academic functioning (Baker, 2006). Existing knowledge of the summer decay of school grades has indicated that pupils from minority ethnic groups and lower socio-economic backgrounds typically show a greater summer decay in their school grades (e.g., Alexander et al., 2007; Downey, von Hippel & Broh, 2004). The present findings provide further insights into why this is may be the case as these pupil groups may be suspect to lower relatedness satisfaction at school (see Kuperminc, Blatt, Shahar, Henrich, & Leadbeater, 2004). BPNT proposes that when an individual lacks the satisfaction of a psychological need they may attempt to substitute this void with compensatory external aspirations (Ryan & Deci, 2000). Although not directly assessed in the present research, pupils that lack relatedness at school could potentially seek to disengage with school related activity over the summer holiday and seek acceptance in activities that are unconducive to their academic development (Knecht et al., 2010). Nevertheless, it seems fundamental that schools provide pupils with emotional and interpersonal support to reduce declines in school grades after a summer holiday. This emotional support will need be provided to pupils from teachers but also emphasised between pupils themselves (Ruzek et al., 2016).

To summarise this section regarding school attainment, the present findings help uncover the unique processes that each psychological need may have with school attainment.

Perceived competence satisfaction seems to be important for increasing school grades at school, whereas relatedness satisfaction seems fundamental for reducing the summer decay of school grades. In accord with BPNT propositions (Deci & Ryan, 2000), however, it is important to stress that the satisfaction of all three needs will likely result in the most optimal school performance. This was emphasised in Chapter 2 with the satisfied group displaying the highest classroom performance. Due to the present measurement of autonomy, addressed earlier, further research may be required to investigate how autonomy satisfaction may influence temporal changes and the summer decay of school grades. In the next section, the discussion moves on to discuss the more practically driven gaps that this thesis addresses.

Practical Considerations

Active and Passive Pupil Disengagement

Pupil disengagement at school is one of the biggest issues for school teachers (Fredericks, 2014) and can embody pupil passivity (e.g., Paulsen & Bru, 2008) or more active behaviours of defiance and disruption (e.g., Sun & Shek, 2012; Van Petegem et al., 2015). Extending previous work on generic pupil disengagement (e.g., Jang et al., 2016), the present findings in Chapter 4 illustrate how these active and passive forms of disengagement may result from the frustration of pupils' autonomy and competence, respectively. The finding that these processes were associated with perceptions of psychologically controlling teaching may be telling for how to avoid pupil disengagement in classrooms.

Specifically, the frustration of competence was found to underpin passive disengagement at school as a consequence of reduced subjective vitality. Analogue with learned helplessness (Elliot & Dweck, 1988), the feeling of incapableness seems to act as a de-energising threat to one's self and leads to passive avoidance of school activities (Skinner & Wellborn, 1997). Whereas competence satisfaction was found facilitative of school achievement in Chapter 3, the impediment of competence seems to provoke a helpless

response which derives from feeling unable to be successful or overcome setbacks and failure. Such feelings of helplessness appear to result in a self-handicapping process with pupils inhibiting their own academic development by becoming unwilling to answer questions or evading challenging tasks. Indeed, a lack of perceived competence has been associated with increased concealment behaviour at school (Marchand & Skinner, 2007). The apathetic nature of this disengagement may be difficult for teachers to identify and therefore may go unaddressed (Tam, Zhou, & Harel-Fisch, 2012). Furthermore, this helpless response may put pupils at risk of school drop-out, truancy, and academic failure (Henry, Knight, & Thornberry, 2012; Legault et al., 2006; Leroy & Bressoux, 2016). Consequently, it seems essential that schools develop structured strategies that allow pupils to understand how to be successful at school whilst ensuring they are not made to feel incapable of academic success (Skinner & Belmont, 1993). Such competence supporting teaching methods are outlined in the penultimate section of this chapter.

In contrast to competence frustration, the frustration of pupils' autonomy was associated with both active and passive disengagement but neither process was explained by subjective vitality. Rather than a threat to the self, the obstruction of autonomy seems to reflect a threat from the context and may elicit an active or passive response to escape the source of perceived coercion and heteronomy (Skinner & Wellborn, 1997). For instance, pupils that feel coerced may react in an active and rebellious manner that is similar to processes underpinning delinquency (Barber, 1996; Pettit et al., 2001) and reactance (Pavey & Sparks, 2009). This active detachment is conceptually comparable to the notion of oppositional defiance, whereby pupils will bluntly reject the heteronomous authority and become restless, disobedient and disruptive (Van Petegem et al., 2015). In contrast, the passive autonomy response indicates a more subtle avoidance by simply switching off from the perceived heteronomous context. These passive pupils will be less noticeable than pupils

disengaging in a more reactive manner but it is important that teachers are aware of both disengaging responses when pupils' autonomy is thwarted.

To speculate further on the different disengaging responses associated with autonomy frustration, it may be that the passive response represents an obstruction of the affective components of autonomy (see Houlfort et al, 2002). For instance, pupils may passively attempt to escape experiences of a lack of volition due to feeling pressure, tension, or guilt. This may be the result of internal psychological controlling teaching which uses subtle pressurising tactics to induce feelings of guilt and shame (e.g., everyone should be able to answer these questions, they are very easy") or portray disapproval through facial expression and the withdrawal of attention if pupils fail to meet expectations (i.e. conditional regard; see Haerens et al., 2016; Roth, Assor, Niemiec, Ryan, & Deci, 2009). In contrast, an active and rebellious reaction may be initiated when the decisional aspects of autonomy are frustrated. This may result from teachers' use of external psychological control which involve overt threats of punishment, emphasis of deadlines or use controlling statements (e.g. "do this because I say so"). Pupils may reactively oppose such overt coercive tactics that attempt to force them to do activities against their will (Haerens et al., 2016). The present work did not differentiate between internal and external forms of teacher psychological control but the present findings may form the basis for future research to explore these different disengaging responses found with autonomy frustration.

In accord with previous evidence on pupil disengagement, bullying, amotivation and defiance (e.g., Assor et al., 2005; Jang et al., 2016; Haerens et al., 2015; Hein et al., 2015), the present thesis further emphasises the importance for teachers not to use psychologically controlling behaviours. Psychologically controlling teaching does not refer to the teachers' position of objective authority in the classroom (i.e. control of a class), nor does it simply equate to a lack of autonomy support (Haerens et al., 2015). Instead, teachers that are

psychologically controlling adhere to a teacher-centred agenda that will actively disregard pupils' perspectives and typically pressurise or coerce pupils to think and behave in certain ways (Reeve, 2009). Despite this evidence, some teachers may actually interpret psychological control as an effective method of engaging pupils and will regularly demonstrate and prefer to use such strategies (Newby, 1991; Reeve et al., 2014; Reeve & Assor, 2011; Taylor et al., 2009). In addition, some teachers may use psychological control in response to institutional pressures placed upon them (e.g., time restrictions, extensive prescribed teaching material, or pressures regarding pupil attainment quotas), poor pupil behaviour or a lack of pupil motivation (Pelletier, Séguin-Lévesque, & Legault, 2002; Reeve, 2009). The findings in Chapter 4 highlight why such teaching strategies, no matter how well-intended, can be counterproductive and result in both active and passive disengaged pupils. Helping teachers recognise these psychologically controlling behaviours, and to consider the deleterious experiences pupils may have in the presence of such teaching, may have practical value in reducing pupils' psychological need frustration at school.

Considering the findings of the thesis to this point, it is clear that the satisfaction of pupils' psychological needs, and lack of their frustration, is vital for optimal school and personal development. School institutions are encouraged to develop teaching practise and methods that allow pupils' psychological needs to be fulfilment rather than thwarted (Deci, 2009; Ntoumanis & Standage, 2009). Yet looking back to the group profiles in Chapter 2, just less than a fifth of the pupils displayed a satisfied profile. Thus, there seems to be a necessity for further initiatives to foster pupils' psychological need satisfaction. This leads into the second practical issue this thesis addresses regarding the potential for developing a school-based intervention that targets pupils' own experience of their psychological needs. This is discussed in the next section.

Training Pupils' Own Psychological Need Satisfaction

BPNT adopts an organismic-dialectic perspective to the experience of psychological needs (Deci & Ryan, 2000). That is, pupils' psychological need satisfaction requires a need supportive learning environment in which pupils perceive their needs to be satisfied. From an applied perspective, empirical research has predominately addressed the social considerations by outlining how teachers can become need supportive through the use of autonomy supportive, structured and interpersonal involved teaching strategies (e.g., Reeve & Halusic, 2009). Indeed, pupils' perceptions of these strategies have been associated with autonomous motivation (e.g., Gillet et al., 2012; Taylor & Ntoumanis, 2007), school engagement (Wang & Eccles, 2013), and academic achievement (Diseth et al., 2012). These positive pupil outcomes have also been evidenced when teachers have been rated as more need supportive by trained observers (e.g., Jang et al., 2010; Van den Berghe et al., 2013). Consequently, a large number of contextual interventions have attempted to change teachers' beliefs and behaviours regarding autonomy supportive teaching (e.g., Cheon, Reeve, & Song, 2016; Wang, Ng, Liu, & Ryan, 2016), both autonomy support and structure (e.g., Aelterman, et al., 2014; De Naeghel et al., 2016) or all three need supportive behaviours (e.g., Tessier et al., 2010). These interventions have been found to lead to pupil need satisfaction, reduced need frustration, autonomous learning, school engagement, and better school grades.

Despite these positive outcomes, contextual interventions seem to address the social aspects of BPNT but may overlook the cognitive development of the pupils themselves. They imply that pupils are passive in their experiences of their psychological needs, relying on the teacher to demonstrate need supportive behaviours. Even within highly need supportive contexts, pupils that have negative thought patterns may be at risk of experiencing low psychological need satisfaction. A second issue is that teachers' perceptions of their need supportive behaviour may not always be perceived by their pupils (e.g., Aelterman et al.,

2014; Taylor & Ntoumanis, 2007). Enhancing need supportive teaching will only be effective if pupils perceive this to be the case. A third limitation is need supportive teaching can be difficult for many teachers to conceptually understand (Aelterman et al., 2013). Although evidence has shown teachers can be taught to use and maintain these strategies (Cheon & Reeve, 2013), there may be a risk that teachers will not always display need supportive teaching consistently (Reeve & Assor, 2011; Taylor et al., 2009).

To supplement these existing need supportive interventions, there may be potential to devise an intervention that directly targets pupils' own understanding and awareness of their psychological needs. Building on work regarding agentic engagement (Reeve & Tseng, 2011), fostering pupils' awareness of their psychological needs may help them become more active in their own need satisfaction. Comparable pupil-orientated initiatives have been shown to positively influence pupil behaviour and learning when nurturing pupils' own growth mind-set (e.g., Park et al., 2016), self-control strategies (Duckworth, et al., 2016) and behavioural appraisals (Hudley et al., 2007). These initiatives have been shown to be a useful academic tool by developing adaptive psychological processes (Yeager & Walton, 2011). Given the findings from this thesis, and the substantial evidence base highlighting the value of psychological need satisfaction, there may be value in investigating the feasibility of a pupil-focused intervention based upon pupils' psychological needs.

The findings in Chapter 5 indicate that an intervention, which taps more directly into pupils' own perceptions of their psychological needs, may be feasible in the form of a pupil completed diary-log. Teacher and pupils expressed that such a method may be useful for generating pupils' sense of individuality and positive reflection that are difficult for teachers to instil alone. Nevertheless, it seems the practicalities and appeal of a pupil-completed diary-log would require an electronic app design. A written format of the dairy was shown to be unlikely to engage comprehensive or younger pupils and would need to be perceived by

pupils as different to school homework. Deducing from existing learning applications, such as Edmodo.com (Holland & Muilenburg, 2011) and ShowMe.com (Spencer, Coutts, Fagan, & King, 2013), a proposed electronic diary would allow pupils to create a database of personally relevant experiences in their preferred method (i.e. video, pictures, audio, written and emoji's) whilst allowing pupils' to self-set notification reminders. These experiences can then be reflected upon in regards to their psychological needs.

The success of the diary-log, however, may hinge on pupils receiving face to face sessions with teachers or external researchers to guide their completion of the diary. In accord with BPNT proposals (e.g., Deci & Ryan, 2000), these face to face sessions would need to be need supportive in their delivery. Autonomy support and interpersonal involvement during these sessions would help give pupils a sense of meaning and incentive to complete the diary (e.g., Reeve, 2006; 2015), whereas structured strategies would provide pupils with methods of effectively completing the dairy (e.g., Hospel & Galand, 2016). Thus, the proposed pupil-focused intervention is not viewed as a replacement to contextual initiatives (e.g., Reeve et al., 2004) but rather should be used in conjunction with them. Furthermore, the dairy may be perceived as meaningless to pupils unless it is built into a wider initiative that culminates in a showcase event (i.e. a challenge or activity day). Such a salient objective may give pupils a sense of personal relevance (e.g., Assor et al., 2002) and social validity (Miltenberger, 2011) to autonomously engage with the dairy.

Prior to any implementation, there are some areas of caution that may need to be addressed. First, the context in which the electronic app is delivered to pupils may need specific consideration as it may potentially become a method of distraction for pupils during regular school lessons (Shrivastava & Shrivastava, 2014). Although free usage would be encouraged, use during timetabled school sessions may need to be limited to prearranged times. Second, care would need to be taken to ensure confidentiality of pupils' diary entries

(Barker & Weller, 2003). Certainly to avoid ego involvements (Ryan & Deci, 2000), the diary would not be used to make comparisons with other pupils. Finally, the two week pilot conducted in Chapter 5 used a small pupil sample (N=22). Further research would be required to pilot a more complete electronic version of the diary-log and to assess if additional feasibility issues arise with a larger pupil cohort. Equally, future research would need to test the effectiveness of this intervention in actually enhancing pupils' psychological need satisfaction. The present findings illustrate that a pupil-focused initiative may be feasible to administer in schools, but if it is found to be ineffective in facilitating adaptive personal and academic outcomes then the initiative or method of delivery may need further modification. Equally, it may be found that such an intervention is ineffective when used with large pupil groups or may require too much resource to effectively apply generically within school curriculums.

Limitations and Direction for Future Research

Throughout this general discussion, a number of limitations and areas for further research have been identified and these will be summarised in this section. The present findings build on prior BPNT knowledge by highlighting distinct pupil psychological need profiles and the unique attainment and disengagement processes associated with the satisfaction and frustration of pupils' psychological needs. The constructs of psychological need satisfaction and frustration, however, have been shown to be conceptually distinct and can co-exist (e.g., Bartholomew, Ntoumanis, Ryan, Bosch et al., 2011). For instance, some pupils may experience low levels of both psychological need satisfaction and frustration, whereas others may experience low need satisfaction but high need frustration. Given the maladaptive outcomes associated with need frustration (e.g., Haerens et al., 2015), the later pupils may display more deleterious outcomes. Examining psychological need satisfaction and frustration simultaneously may offer further insights into how experiences of both

constructs associate with psychological and academic outcomes. This may be applicable to further person-centred research to profile pupils based on their psychological need satisfaction and frustration, as well predicting both adaptive and maladaptive academic developments.

In regards to the person-centred approach in Chapter 2, the present research was not privy to pupils' demographic information, such as socio-economic background. Although the findings revealed pupils may exist at school with dissimilar psychological need profiles, psychological need satisfaction can be influenced by a host of different domains and is not exclusive to school institutions (Milyavskaya & Koestner, 2011). The incorporation of demographic data within a person-centred methodology may help schools identify if certain pupil demographics are suspect to certain types of school psychological need profile (for socio-economic considerations see Morrissey, Hutchison, & Winsler, 2014). This knowledge may help schools offer targeted intervention for at risk pupil groups at the onset of secondary school to help minimise the development of any psychological need deficits.

The longitudinal analysis in Chapter 3 illustrates unique attainment patterns that may be associated with pupil differences in competence and relatedness satisfaction. In particular, these findings uncover previously unforeseen associations between relatedness satisfaction and reductions in the summer decay of grades. A limitation of this study was that it was only conducted in a single school and covered only one summer holiday. Further multi-year examinations of dynamic pupil patterns may extend conceptual and practical knowledge of BPNT across pupils' schooling. For instance, multi-year examinations of the summer decay may reveal if pupils lower in relatedness satisfaction show more severe summer attainment declines over a number of years. Furthermore, longitudinal investigation may expand the different disengagement associations found with autonomy and competence frustration. It may be that the passive disengagement associated with competence frustration may lead to

prolonged increases in school truancy, school drop-out or academic failure (e.g., Henry, Knight, & Thornberry, 2012). Similarly, the active disengagement associated with autonomy frustration may result in more classroom punishments, school suspensions or exclusions over an extend period of time. Such analysis, however, would require the tracking of pupils across all their years at secondary school. Further research may also look at the association between relatedness frustration and different forms of school disengagement which were not considered in this thesis.

The series of studies in this thesis did not solely rely on pupil self-report measures but utilised a variety of outcome measures which included teacher ratings (e.g., Chapters 2 and 4), school record data (e.g., Chapter 3) and qualitative data (e.g., Chapter 5). A strength of these different measures is that it helps reduce potential statistical error associated with common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Nevertheless, teacher rated achievement in Chapter 2 does not offer as accurate assessment of school attainment as the objective school grades in Chapter 3 as it may be subject to over or under estimation (Kuncel et al, 2005). In addition, pupil attentiveness (Chapter 2) and both active and passive disengagement (Chapter 4) were assessed using two teacher rated items which enabled teachers to offer an observed measure of these outcomes. Future research could also include independent classroom observations of pupils' attentiveness and disengagement (e.g., Allen et al., 2013; Hafen et al., 2012), as well school attendance data to asses pupil behavioural engagement (e.g., McDermott, Rikoon, & Fantuzzo, 2016). Such assessments may help provide a more comprehensive measure of these outcomes.

Enlightened by previous work (Assor et al., 2009), evidence in Chapter 2 provides initial indications that that both introjected and external regulations could be differentiated into approach and avoidance orientations. Specifically, the motivation composite predominately comprised of identified regulation but also both approach types of introjected

and external regulations. Although not a prime objective of the research in Chapter 2, these subscales were found to show acceptable internal consistency and factorial validity (see Appendix G). Further factorial analysis and scale validation may help confirm and develop these subscales. Nevertheless, the present distinction gives credence for further research to investigate if both approach controlled motives may yield more adaptive pupil outcomes compared to their avoidance orientated counterparts. Such an investigation may provide new conceptual extensions to SDT (Deci & Ryan, 2000) with both approach controlled motivations being potentially positioned further along the self-determined continuum than the controlled avoidance sub-types.

Finally, it is important that the practical and applied implications of this research are sought to be implemented within secondary schools. The findings outline the feasibility of a potentially novel intervention to nurture pupil psychological need satisfaction by tapping into their own psychological experiences. The next phase would be to develop this intervention into the suggested electronic app format and pilot this within schools. This would allow any further feasibility issues, as well as the effectiveness of the intervention in fostering pupils' psychological need satisfaction, to be evaluated. Furthermore, the present thesis emphasises the clear necessity for teachers to be aware of and support pupils' psychological needs via need supportive teaching and the avoidance of psychological control (Reeve, 2006). The present findings may be futile if teachers are unable to promote teaching practise that is facilitative of pupil psychological need satisfaction. In accord, this next section outlines theoretically (e.g., Reeve & Jang, 2006) and empirically (e.g., Cheon & Reeve, 2015) informed teaching behaviours that will help teachers support, rather than thwart, pupils' psychological needs.

Teaching Implications

First, pupil autonomy is supported by strategies of autonomy support. Autonomy support involves a coherent cluster of teaching behaviours that together provide an interpersonal tone of support and understanding (Reeve, 2015). Due to the multidimensional nature, autonomy support can often be challenging for teachers to understand and targeted methods may be needed to help teachers effectively apply such strategies (Aelterman, Vansteenkiste, Van Keer, & Haerens, 2016). Put simply, effective autonomy supportive teaching requires an understanding and consideration of the pupil perspective, rather than being focused on the teachers' perspective (Reeve, 2015). These strategies hinge on providing explanatory rationales for all activities, enabling pupils to work at their own pace, allowing pupils to express truthful opinion without reprimand or repercussion, and using non-controlling language (e.g., "you must" or "have to"; Reeve, 2006; 2015; 2016). Reasoning from previous findings (e.g., Assor et al., 2002), the provision of autonomy support does not refer to simply giving pupils choice over school activities. Prescribed school lessons obligate pupils to undertake learning activities and therefore, even when pupils have choice over these activities, they are still mandated to participate (i.e. 'option' choice; Reeve et al., 2003). In contrast, autonomy will be enhanced when the offered choice is personally meaningful and relevant to the pupils' interest and goals (Katz & Assor, 2007). Explaining to pupils why activities are relevant and then allowing choice over how they undertake a task, or present their work, will likely enhance their sense of volition and behavioural ownership rather than giving them choice over what activities they will do (Katz & Assor, 2007).

Alongside the fundamental importance of autonomy support, teachers need to simultaneously foster a structured learning environment to support pupils' competence (e.g., Hospel & Galand, 2016; Jang et al., 2010). Structure includes providing clear instructions to pupils about teachers' expectations, highlighting ways of effectively achieving academic

goals, and outlining the consequences for their behaviour (Connell & Wellborn, 1991; Skinner & Blemont, 1993). Put another way, strategies of structure help give pupils a sense of perceived control over their school outcomes by communicating to pupils methods of getting work done or strategies to improve, rather than criticising pupils (for benefits of perceived control see Hortop, Wrosch, & Gagné, 2013; Patrick et al., 1993). Such instruction will likely help pupils feel effective so they can direct their engagement towards academic behaviours (Dupont, Galand, Nils, & Hospel, 2014; Wang & Eccles, 2013).

Third, teachers that use strategies of interpersonal involvement at school will foster pupil relatedness satisfaction (Skinner & Belmont, 1993). Interpersonal involved strategies require emotional support to be shown to pupils in a manner that actively acknowledges and considers their feelings, thoughts and opinions. Teaching environments that support relatedness will be perceived as friendly and emotionally safe contexts, in which pupils feel accepted, respected and trust that their feelings will not be disregarded or exploited. The present finding that relatedness satisfaction protected against the summer decay of school grades may indicate that interpersonal involvement at school may have longer lasting influences on pupils' academic progression. In addition, the finding that higher autonomy satisfaction coincided with higher reports of relatedness satisfaction (Chapter 2) may provide further insight into fostering pupil relatedness. Similar to interpersonal involvement strategies, autonomy supportive strategies also consider pupils' feelings, opinions and perspectives (see Reeve, 2006). Thus, autonomy supportive teaching may also be a useful method of fostering pupils' school relatedness.

Finally, the reduction of maladaptive pupil psychological need profiles may also lie in increasing teachers' awareness of deleterious need thwarting behaviours (Reeve, 2009). The findings in Chapter 4 highlight the necessity for teachers to avoid the use of psychologically controlling teaching as it resulted in both the frustration of pupils' autonomy and competence.

In addition, teachers that create chaotic learning environments will likely frustrate pupils' competence by providing unclear and incoherent informational instruction which are delivered in an overly critical manner (Haerens, Vansteenkiste, Aelterman, & Van den Berghe, 2016; Reeve & Assor, 2011). Equally cold and unfriendly contexts that discourage interaction between teachers and pupils, or reject pupils' feelings, will likely frustrate their sense of relatedness (Skinner & Belmont, 1993). Future teacher interventions could attempt to help teachers understand the consequences of employing need thwarting behaviours as this may be beneficial in reducing pupil experiences of psychological need frustration (Reeve & Assor, 2011).

Summary and Conclusions

To conclude this final chapter, the present thesis provides some novel conceptual and practical insights into the application of BPNT within young adolescent secondary schools. From a methodological perspective, a person-centred examination revealed the existence of diverse pupil psychological need profiles that differed in well-being, motivation and performance outcomes. In accord with BPNT proposals (Deci & Ryan, 2000), the group higher in the satisfaction of all three needs reported the most adaptive pupil functioning but certain groups may have specific need deficits that may require targeted attention. Second, the present findings demonstrate the unique temporal attainment patterns and disengagement processes associated with the satisfaction and frustration of different psychological needs. This disentanglement of each psychological need may aid theoretical advancement by illustrating distinct mechanisms underpinning different school processes and development patterns. Considering the darker side of pupil behaviour, the findings highlight the importance for teachers to avoid using strategies of psychological control. Pupils' perceptions of such strategies were associated with the frustration of their psychological needs and, in turn, led to active and passive types of classroom disengagement. Finally, the thesis outlines

the practicalities and recommendations for conducting a novel pupil-focused intervention that targets pupils' own experience of their psychological needs. This notion attempts to build on existing contextual interventions by fostering adaptive pupil cognitions, as well as social conditions, to facilitate pupil psychological need satisfaction. Collectively, this thesis may provide teachers with an understanding of how psychological experiences may explain why some pupils function better than others, both personally and academically. An awareness of these pupil experiences may help inform future teaching practice and intervention to nurture psychological need satisfaction for pupils at school.

Chapter 7

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Chapter 8

Appendices

A study about pupils' motivation and attentiveness in class

I am a researcher from the University of Kent and I am interested in how school pupils feel and behave during school lessons. I would like to ask you four questions about each pupil regarding their behaviour in your class. These questions will take no more than 10 minutes to complete in total.

You do not have to answer the questions if you wish. Any information that you give will be confidential and will not be seen by any pupils or your school. You have the right to withdraw from this study at any stage without giving any reason. **Please note** this study is only focused on the pupils and is not concerned with or evaluating your teaching.

If you have any questions, please feel free to ask now, or at any time during the study. Please read the information below and tick each box to confirm your willingness to take part. Please fill in your name and sign in the space provided to take part in this study.

WILLINGNESS TO TAKE PART

1.   The purpose of this study has been explained to me.   ☐

2.   I have read and understood the information above.   ☐

3.   I have been able to ask any questions that I had.   ☐

4.   I understand that it is my choice to take part in this study.   ☐

5.   I understand that I have the right to drop out from this study at any stage

      without giving a reason.   ☐

6.   I understand that all the information I provide will be treated in strict confidence. ☐

7.   I agree to take part in this study.   ☐

      Your name   _____

      Your signature _____

Parental Information and Opt-Out Form (Chapter 2 Research)

A research study about pupils' motivation and attentiveness in class

Dear Parent/Carer,

I am a PhD student from the University of Kent in the School of Sport and Exercise Sciences, based at the Medway Campus. I am writing to inform you of a research project that I am carrying out at _____ which looks at pupil learning in education.

Your child will be asked to complete a questionnaire which will ask them about how they feel in class and the type of motivation they have in class. This questionnaire will take no more than 15 minutes to complete and will be handed out during a school lesson. It will not disrupt your child's normal school day.

There are no physical or psychological risks to your child, and they will be free to withdraw from the study at any time. All information will be kept confidential so the school, teachers and other pupils will not see the information that your child provides. Your child and the school will not be identifiable in any publication which may arise from the research. All recordings and questionnaire responses will be kept in locked, secure storage at the University of Kent, Medway Campus.

If you **do not** wish for your child to participate in this research, please complete the opt-out slip and return it to _____ by _____. Otherwise it will be assumed that you give your consent.

If you would like any further information about the study, then please contact myself, Stephen Earl, or one my supervisors using the email addresses below.

Yours faithfully,

Stephen Earl

Carla Meijen (Supervisor)   Louis Passfield (Supervisor)

Opt-Out Slip

I **do not** give permission for _____ to take part in the research being conducted.

Signed _____ (Parent/Carer)

A study about the way you learn

I am a researcher from the University of Kent and I am interested in how you feel and learn during your school lessons. I would like to ask you some questions during a school lesson. These questions will take no more than 15 minutes to complete.

There are no right or wrong answers and you do not have to answer the questions. All questionnaires will be made anonymous so no one will know who answered the questionnaire. Any information that you give will be confidential and will not be seen by other pupils, your teacher or your school.

If you have any questions, please feel free to ask now, or at any time during the study. Please read the information below, fill in your name and sign in the space provided to take part in this study.

WILLINGNESS TO TAKE PART

1. The purpose of this study has been explained to me.

2. I have read and understood the information above.

3. I have been able to ask any questions that I had.

4. I understand that it is my choice to take part in this study.

5. I understand that I have the right to drop out from this study at any stage without giving a reason.

6. I understand that all the information I provide will be treated in strict confidence.

7. I agree to take part in this study.

Your name   _____

Your signature   _____

___

<u>Questionnaire</u>

Information about you

Gender: Boy ☐   Girl ☐

Initials (of Name): _____

(**First letter** of your name and surname)

Date of Birth: _____

My name is Stephen Earl and I am a PhD student from the University of Kent. This questionnaire is looking at how you feel and learn when in this class.

Please note, all responses will be kept completely confidential so will **not be seen by any other pupil, your teacher or your school.** All the data collected will be used for my PhD project at the University of Kent.

Please read the instructions before each set of questions. This is not a test, so there are no right or wrong answers.

Please answer with complete honesty and rate how you feel about these statements at this moment in time (i.e. **right now**). You do not have to answer a question you do not want to.

If you do not understand a question or need some help, then please ask me.

Thank you for taking the time to complete this questionnaire.

The following sentences are about how you feel in this class.

Please read each sentence and rate how true or untrue each sentence is to you.

Please **circle** the relevant number. (Please use the whole scale)

"In this class….."	Not at All True of me			Quite True			Very True of me
I can decide which activities I want to learn	1	2	3	4	5	6	7
I don't feel very energetic.	1	2	3	4	5	6	7
I have a say regarding what skills I want to learn	1	2	3	4	5	6	7
I have energy and spirit.	1	2	3	4	5	6	7
I feel that I do this class because I want to	1	2	3	4	5	6	7
I look forward to this class.	1	2	3	4	5	6	7
I have to force myself to do the activities	1	2	3	4	5	6	7
I nearly always feel alert and awake.	1	2	3	4	5	6	7
I feel a certain freedom in choosing what I do	1	2	3	4	5	6	7
I feel energised.	1	2	3	4	5	6	7
I have some choice in what I want to do	1	2	3	4	5	6	7

The following sentences are about how you feel when you are in this class.

Please read each sentence and rate how much you true or untrue each sentence is to you.

(Please **circle** the relevant number.)

	Not at All True of me			Quite True			Very True of me
In this class, I feel understood	1	2	3	4	5	6	7
In this class, I feel listened to	1	2	3	4	5	6	7
In this class, I feel supported	1	2	3	4	5	6	7
In this class, I feel valued	1	2	3	4	5	6	7
In this class, I feel safe	1	2	3	4	5	6	7

Thinking about yourself and how you normally feel **in this class**, to what extent do you generally feel:

(Please **circle** the relevant number)

	Never	Rarely	Sometimes	Often	Always
Upset	1	2	3	4	5
Hostile	1	2	3	4	5
Alert	1	2	3	4	5
Ashamed	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Afraid	1	2	3	4	5
Active	1	2	3	4	5

The following sentences are about how often you feel stressed in this class.

Please read each sentence and decide if you feel like this.

(Please **circle** the relevant number)

"In this class….."	Never	Almost Never	Sometimes	Fairly Often	Very Often
Do you feel that you are unable to control the important things?	1	2	3	4	5
Do you feel confident about your ability to handle your personal problems?	1	2	3	4	5
Do you feel that things are going your way?	1	2	3	4	5
How often do you feel difficulties are piling up so high that you cannot overcome them?	1	2	3	4	5

The following sentences are about why you feel you take part in this class.

Please read each sentence and rate if you agree or disagree with each sentence

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Mostly Agree	Strongly Agree
I'll get into trouble if I don't	1	2	3	4	5	6	7
I want the teacher to compliment me	1	2	3	4	5	6	7
I make an effort in this class because otherwise I would be ashamed of myself.	1	2	3	4	5	6	7
I do my work well in this class so that other people will be impressed by what I do.	1	2	3	4	5	6	7
I invest effort in classwork because the topics are important to me.	1	2	3	4	5	6	7
So that the teacher won't yell at me.	1	2	3	4	5	6	7
I want the teacher to recognise me as a good student.	1	2	3	4	5	6	7
I try to do my work well in this class because otherwise I would feel bad about myself.	1	2	3	4	5	6	7
I try to do my work well so that other people will appreciate me.	1	2	3	4	5	6	7
I work seriously in this class because I want to learn new things.	1	2	3	4	5	6	7
I do not want to be punished	1	2	3	4	5	6	7
I want to get rewarded by my teacher	1	2	3	4	5	6	7
I listen to the teacher because otherwise I would feel bad about myself.	1	2	3	4	5	6	7
I make an effort in this class so that I feel that I am a special person.	1	2	3	4	5	6	7
I listen in this class because I want to understand the material.	1	2	3	4	5	6	7
I do not want to be given detention	1	2	3	4	5	6	7
I want to be top of the class	1	2	3	4	5	6	7
I try to do my work well because I would feel guilty if I did not do everything that I could.	1	2	3	4	5	6	7
I do the assignments in this class in order to feel proud of myself.	1	2	3	4	5	6	7
I make an effort in this class because it will help me in my future.	1	2	3	4	5	6	7
If I won't try to do the difficult work, I will be ashamed of myself.	1	2	3	4	5	6	7
I take part in discussions in this class because I know I will learn from it.	1	2	3	4	5	6	7

The following sentences are about how you feel when you are in this class.

Please read each sentence and rate how much you true or untrue each sentence is to you.

(Please **circle** the relevant number.)

	Not at All True of me			Quite True			Very True of me
I think I am pretty good at activities in this class	1	2	3	4	5	6	7
I am satisfied with my performance in this class	1	2	3	4	5	6	7
When I have worked in this class for a while, I feel pretty competent	1	2	3	4	5	6	7
I am pretty skilled in this class	1	2	3	4	5	6	7
I can't do this class very well	1	2	3	4	5	6	7

Appendix E

Teacher Rating Items (Chapter 2 Research)

Items 1 and 2 are concerned with each student's attentiveness in class. The scale indicates how often each pupil behaves in relation to each of the statements.

	Never					Always
1. **This student is co-operative and enthusiastic during my class**	1	2	3	4	5	6
2. **This student concentrates and works quietly in my class**	1	2	3	4	5	6

Items 3 and 4 are concerned with each student's academic performance and achievement in this class. The scale indicates the level that each pupil's works at.

	Not At All True					Completely True
3. **Compared to the average student, this student performs well in this class**	1	2	3	4	5	6
4. **This student achieves a high academic level in this class**	1	2	3	4	5	6

On the attached form, please complete the relevant details about the class you teach and state the name of each pupil in your class in the boxes provided. Please indicate how you would rate each pupil for each item.

Example:

	Pupil Name	Item 1	Item 2	Item 3	Item 4
1	Student X	4	5	3	4
2	Student Y	1	6	4	5

To make the form easier to complete, it is recommended that you complete item 1 for all students, before moving on to item 2 for each student, then items 3 and 4.

Thank you for taking the time to complete this form. If you have any questions, please feel free to contact me,

Sincerely,
        Stephen Earl

Standardised Factor Loadings for Teacher-Rated Pupil Achievement (Chapter 2 Research)

Standardised Factor Loadings for Teacher-Rated Pupil Achievement

Item	Factor Loading	Residuals
Compared to the average student, this student performs well in this class.	.86	**.27**
This student achieves a high academic level in this class	.83	**.31**

Standardised Factor Loadings for all Motivation Items (Chapter 2 Research)

Standardised Factor Loadings for all Motive Factors

Item	External Avoidance	External Approach	Introjected Avoidance	Introjected Approach	Identified Regulation
I'll get into trouble if I don't	.43				
So that the teacher won't yell at me.	.57				
I do not want to be punished	.81				
I do not want to be given detention	.68				
I want the teacher to compliment me		.56			
I want the teacher to recognise me as a good student.		.69			
I want to get rewarded by my teacher		.68			
I want to be top of the class		.65			
I make an effort in this class because otherwise I would be ashamed of myself.			.70		
I try to do my work well in this class because otherwise I would feel bad about myself.			.75		
I listen to the teacher because otherwise I would feel bad about myself.			.76		
I try to do my work well because I would feel guilty if I did not do everything that I could.			.77		
If I won't try to do the difficult work, I will be ashamed of myself.			.73		
I do my work well in this class so that other people will be impressed by what I do.				.71	
I try to do my work well so that other people will appreciate me.				.74	
I make an effort in this class so that I feel that I am a special person.				.70	
I do the assignments in this class in order to feel proud of myself.				.67	
I invest effort in classwork because the topics are important to me.					.71
I work seriously in this class because I want to learn new things.					.42
I listen in this class because I want to understand the material.					.74
I make an effort in this class because it will help me in my future.					.68
I take part in discussions in this class because I know I will learn from it.					.67

Graphical Representation of Pupil Clusters (Chapter 2 Research)
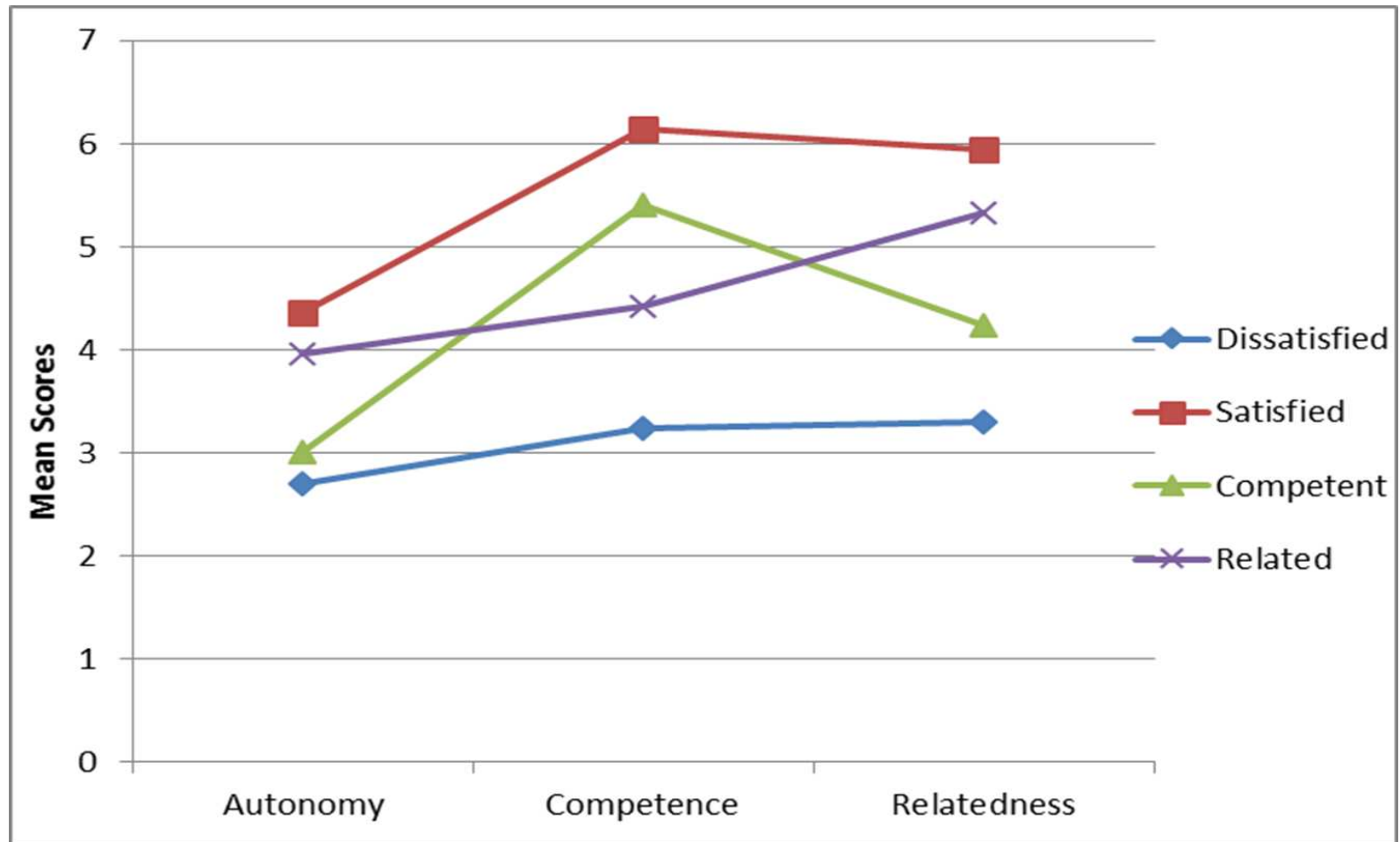
Parental Information and Opt-Out Form (Chapter 3 Research)

Dear Parent/Carer,

I am a PhD student from the University of Kent in the School of Sport and Exercise Sciences, based at the Medway Campus. I am writing to inform you of a research project that I am carrying out at _____ which looks at pupil learning in education. This research has been approved by _____ and will focus on the _____ modules taught to the Year 7 and 8 pupils.

Your child will be asked to complete two questionnaires each term, over the next school year. Each questionnaire will take no more than 20 minutes to complete. The questionnaire will be handed out during a school lesson and will not disrupt your child's normal school day.

There are no physical or psychological risks to your child, and they will be free to withdraw from the study at any time. All information will be kept confidential so the school, teachers and other pupils will not see the information that your child provides. Your child and the school will not be identifiable in any publication which may arise from the research. All recordings and questionnaire responses will be kept in locked, secure storage at the University of Kent, Medway Campus.

Permission for your child to participate is covered under *the schools'* 'Lifetime Consent Form'. However, if you **do not** wish for your child to participate in this research, please complete the opt-out slip and return it to the _____ at _____ by _____. Otherwise it will be assumed that you give your consent.

If you would like any further information about the study, then please contact myself, Stephen Earl, or one my supervisors using the email addresses below.

Yours faithfully,

Stephen Earl

Carla Meijen (Supervisor)   Louis Passfield (Supervisor)

Opt-Out Slip

I **do not** give permission for _____ to take part in the research being conducted.

Signed _____ (Parent/Carer)

A study about the way you learn

I am a researcher from the University of Kent and I am interested in how you feel and learn during your school lessons. I would like to ask you some questions during a Key Curriculum lesson, each term. These questions will take no more than 20 minutes to complete.

There are no right or wrong answers and you do not have to answer the questions. Any information that you give will be confidential and will not be seen by other pupils, your teacher or your school.

   If you have any questions, please feel free to ask now, or at any time during the study. Please read the information below, fill in your name and sign in the space provided to take part in this study.

WILLINGNESS TO TAKE PART

1. The purpose of this study has been explained to me.

2. I have read and understood the information above.

3. I have been able to ask any questions that I had.

4. I understand that it is my choice to take part in this study.

5. I understand that I have the right to drop out from this study at any stage without

     giving a reason.

6. I understand that all the information I provide will be treated in strict confidence.

7. I agree to take part in this study.

        Your name   _____

        Your signature   _____

Information about you

Gender: Boy ☐   Girl ☐

Initials (of Name):   _____
(**First letter** of your name and surname)

Class Number: _____

Date of Birth: _____

 My name is Stephen Earl and I am a PhD student from the University of Kent.

This questionnaire is looking at how you feel when you are at school and the different ways that you learn when at school.

Please note, all responses will be kept completely confidential so will **not be seen by any other pupil, your teacher or your school.** All the data collected will be used for my PhD project at the University of Kent.

Please read the instructions before each set of questions. This is not a test, so there are no right or wrong answers. Please answer with complete honesty and rate how you feel about these statements at this moment in time (i.e. **right now**). You do not have to answer a question you do not want to.

If you do not understand a question or need some help, then please ask myself.

Thank you for taking the time to complete this questionnaire.

The following sentences are about how you feel when you are at school.
Please read each sentence and rate how true or untrue each sentence is.

Please **circle** the relevant number (Please use the whole scale)

	Not At All True			Quite True			Very True
When at school, I can decide which activities I want to learn	1	2	3	4	5	6	7
I think I am pretty good at school activities	1	2	3	4	5	6	7
When at school, I feel understood	1	2	3	4	5	6	7
I have a say regarding what skills I want to learn	1	2	3	4	5	6	7
I am satisfied with my performance in school	1	2	3	4	5	6	7
When at school, I feel listened to	1	2	3	4	5	6	7
I feel that I do school lessons because I want to	1	2	3	4	5	6	7
When at school, I feel supported	1	2	3	4	5	6	7
I have to force myself to do the activities	1	2	3	4	5	6	7
When I have worked at school activities for a while, I feel pretty competent	1	2	3	4	5	6	7
When at school, I feel valued	1	2	3	4	5	6	7
I feel a certain freedom in choosing what I do	1	2	3	4	5	6	7
I am pretty skilled at school activities	1	2	3	4	5	6	7
When at school, I feel safe	1	2	3	4	5	6	7
I have some choice in what I want to do.	1	2	3	4	5	6	7
I can't do school classes very well	1	2	3	4	5	6	7

A study about how pupils feel and behave in class

I am a researcher from the University of Kent and I am interested in how school pupils feel and behave during school lessons. I would like to ask you four questions about each pupil regarding their behaviour in your class. These questions will take no more than 15 minutes to complete in total.

You do not have to answer the questions if you wish. Any information that you give will be confidential and will not be seen by any pupils or your school. You have the right to withdraw from this study at any stage without giving any reason. **Please note** this study is only focused on the pupils and is not concerned with or evaluating your teaching.

If you have any questions, please feel free to ask now, or at any time during the study. Please read the information below and confirm your willingness to take part. Please fill in your name and sign in the space provided to take part in this study.

WILLINGNESS TO TAKE PART

1. The purpose of this study has been explained to me.

2. I have read and understood the information above.

3. I have been able to ask any questions that I had.

4. I understand that it is my choice to take part in this study.

5. I understand that I have the right to drop out from this study at any stage without giving a reason.

6. I understand that all the information I provide will be treated in strict confidence.

7. I agree to take part in this study.

Your name   _____

Your signature   _____

Dear Parent/Carer,

I am a PhD student from the University of Kent in the School of Sport and Exercise Sciences, based at the Medway Campus. I am writing to inform you of a research project that I am carrying out at _____ which looks at pupil learning in education. This research has been approved by _____.

Your child will be asked to complete a questionnaire which will take no more than 15 minutes to complete. The questionnaire will be handed out during a school lesson and will not disrupt your child's normal school day.

There are no physical or psychological risks to your child, and they will be free to withdraw from the study at any time. All information will be kept confidential so the school, teachers and other pupils will not see the information that your child provides. Your child and the school will not be identifiable in any publication which may arise from the research. All recordings and questionnaire responses will be kept in locked, secure storage at the University of Kent, Medway Campus.

If you **do not** wish for your child to participate in this research, please complete the opt-out slip and return it to _____ by _____. Otherwise it will be assumed that you give your consent.

If you would like any further information about the study, then please contact myself, Stephen Earl, or one my supervisors using the email addresses below.

Yours faithfully,
            Stephen Earl

Carla Meijen (Supervisor)   Louis Passfield (Supervisor)

Opt-Out Slip

I **do not** give permission for _____ to take part in the research being conducted.

Signed _____ (Parent/Carer)

A study about the way you learn

I am a researcher from the University of Kent and I am interested in how you feel and learn during your school lessons. I would like to ask you some questions during a school lesson. These questions will take no more than 15 minutes to complete.

There are no right or wrong answers and you do not have to answer the questions. All questionnaires will be made anonymous so no one, other than the researcher, will know who answered the questionnaire. Any information that you give will be confidential and will not be seen by other pupils, your teacher or your school.

If you have any questions, please feel free to ask now, or at any time during the study. Please read the information below, fill in your name and sign in the space provided to take part in this study.

WILLINGNESS TO TAKE PART

1. The purpose of this study has been explained to me.

2. I have read and understood the information above.

3. I have been able to ask any questions that I had.

4. I understand that it is my choice to take part in this study.

5. I understand that I have the right to drop out from this study at any stage without giving a reason.

6. I understand that all the information I provide will be treated in strict confidence.

7. I agree to take part in this study.

Your name   _____

Your signature   _____

Appendix O

Questionnaire (Chapter 4 Research)

Information about you

Gender: Boy ☐   Girl ☐

Initials (of Name):   _____
(**First letter** of your name and surname)

Date of Birth: _____

 My name is Stephen Earl and I am a PhD student from the University of Kent.

This questionnaire is looking at how you feel and learn when in this class.

Please note, all responses will be kept completely confidential so will **not be seen by any other pupil, your teacher or your school.** All the data collected will be used for my PhD project at the University of Kent.

Please read the instructions before each set of questions. This is not a test, so there are no right or wrong answers.

Please answer with complete honesty and rate how you feel about these statements at this moment in time (i.e. **right now**). You do not have to answer a question you do not want to.

If you do not understand a question or need some help, then please ask me.

Thank you for taking the time to complete this questionnaire.

The following sentences are about how you feel about your teacher.
Please read each sentence and rate if you agree or disagree with each sentence.

Please **circle** the relevant number (Please use the whole scale)

	Strongly Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Strongly Agree
My teacher is willing to listen only to opinions that match their opinion	1	2	3	4	5
My teacher always tries to change me	1	2	3	4	5
My teacher stops me before I have finished saying what I wanted	1	2	3	4	5
My teacher clearly shows that I have hurt their feelings when I do not meet their expectations	1	2	3	4	5
My teacher often interrupts me	1	2	3	4	5
My teacher makes me feel guilty when I do not please them	1	2	3	4	5
My teacher does not allow me to work at my own pace	1	2	3	4	5
My teacher avoids talking to me when I have disappointed them	1	2	3	4	5
My teacher interrupts me in the middle of activities that interest me	1	2	3	4	5
My teacher tells me what to do all the time	1	2	3	4	5

The following sentences are about how you feel when you are in this class.
Please read each sentence and rate how much you agree or disagree with each sentence.

Please **circle** the relevant number.

"When in this class……."	Strongly Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Strongly Agree
I feel prevented from making choices about the way I learn.	1	2	3	4	5
There are situations where I am made to feel I am not good enough.	1	2	3	4	5
I feel pushed to behave in certain ways.	1	2	3	4	5
I feel forced to follow decisions made for me.	1	2	3	4	5
I don't feel good enough because I am not given opportunities to fulfil my potential.	1	2	3	4	5
I feel under pressure to agree with the school activities I am given.	1	2	3	4	5
Situations occur in which I am made to feel I am incapable.	1	2	3	4	5
There are times when I am told things that make me feel that I lack ability.	1	2	3	4	5

The following sentences are about how much energy you have when in this class.
Please read each sentence and rate how true or untrue each sentence is to you.
Please **circle** the relevant number

	Not True at All			Somewhat True			Very True
I don't feel very energetic.	1	2	3	4	5	6	7
I have energy and spirit.	1	2	3	4	5	6	7
I look forward to this class.	1	2	3	4	5	6	7
I nearly always feel alert and awake.	1	2	3	4	5	6	7
I feel energised.	1	2	3	4	5	6	7

Teacher-rated Items for Pupil Disengagement (Chapter 4 Research)

The following statements are concerned with each student's behaviour. The scale indicates how often each pupil behaves in relation to each of the statements.

The scale ranges from 1 (Never) to 6 (Always).

	Never					Always
1. **In class, this student often speaks over others and makes a lot of noise**	1	2	3	4	5	6
2. **In class, this student argues with other students**	1	2	3	4	5	6
3. **To what extent does this student daydream in class**	1	2	3	4	5	6
4. **To what extent does this student switch off in class**	1	2	3	4	5	6

On the attached form, please complete the relevant details about the class you teach and state the name of each pupil in your class in the boxes provided. After reading each statement, please indicate how often this pupil behaves in this manner.

Example:

	Pupil Name	**Item 1**	**Item 2**	**Item 3**	**Item 4**
1	Student X	4	5	4	3
2	Student Y	1	1	5	6

To make the form easier to complete, it is recommended that you complete item 1 for all students, before moving on to item 2 for each student, then items 3 and 4.

Thank you for taking the time to complete this form.

If you have any questions, please feel free to contact me.

Sincerely,
        Stephen Earl

Parental Information and Informed Consent Form (Chapter 5 Research)

Dear Parent/Carer,

I am a researcher from the University of Kent in the School of Sport and Exercise Sciences, based at the Medway Campus. I am writing to inform you of a research project that I am carrying out at _____ which looks at pupil learning at school. This research has been approved by _____.

What is the purpose of the study?
The purpose of this research is to assess the potential of using a pupil completed diary-log to help enhance pupils' perceptions of their ability and feelings in the classroom. All pupils will do some fantastic things at school but sometimes they might not realise it themselves, so we want to find ways to help pupils realise times when they are successful and why. This research study and its findings shall also contribute towards my PhD project.

What does the study involve?
Your child has been invited to participate in two group discussions, and complete a 2 week diary log. The diary log will ask your child to record occasions or activities in which they felt they were successful or enjoyed. This diary should take approximately a few minutes each day, over the two weeks, so will not disrupt your child's normal school day. It can be completed whenever your child wishes and can be completed at any time (i.e. at school, leisure time, or at home).
The group discussions will take no more than 45 minutes, with one group discussion taking place before the diary logs are administered and one after they have been completed. Each group discussion will involve approximately 8 pupils and will **only ask your child their general opinions and suggestions regarding the diary log**. The time of these discussions will be held during part of a school lesson and will be organised with a school teacher.

Why has your child been chosen?
This research focuses on Year 7 and 8 pupils, and your child has been chosen at random to participate, in agreement with a school teacher.

Does your child have to take part?
No, you can decide whether or not you would like your child to take part. The study has been approved by the school and your child's teacher. Even if you agree for your child to take part, they are still free to withdraw at any time throughout the study without giving a reason, if they desire. Even when taking part, it should be noted the diary logs are not compulsory for your child, and are not considered additional work, so if your child wishes not to complete the diary on certain days this is perfectly acceptable.

Are there any benefits involved?
The study offers your child the opportunity to participate in, and gain an understanding of, a university level research study, as well as the opportunity to discuss their experiences of the diary log with other pupils and if they found it beneficial to their school work.

<u>Are there any risks involved?</u>
There are no physical or psychological risks to your child, and they will be free to withdraw from the study at any time. It will be explained to your child that they do not have to answer any question if do not wish to. Group discussions will be audio recorded for the purpose of the data analysis, however all information will be kept strictly confidential so the school, teachers and other pupils will not see or hear the information that your child provides.

<u>Will my taking part in the study be kept confidential?</u>
Yes. Each participant shall be assigned a numeric code for the purposes of data storage and data analysis so your child and the school will not be identifiable in any publication which may arise from the research. All data shall be looked after in line with the Data Protection Act (1998). Audio recordings of the focus groups, word processed transcriptions of the audio files, and signed consent forms shall be kept for five years and they shall then be destroyed. All recordings will be stored in a password-protected computer file and written transcriptions kept in locked, secure storage at the University of Kent, Medway Campus. Only I and my supervisors at the university will have access to your data.

If you are happy for your child to take part in this research, please complete the attached consent form and return it to _____ by _____. Otherwise your child will be unable to take part.

If you would like any further information about the study, then please contact myself, Stephen Earl, or one my supervisors using the email addresses below.

Yours faithfully,

Stephen Earl

Carla Meijen (Supervisor)   Louis Passfield (Supervisor)

Parental Consent Form

University of Kent

Project Title:
Pupil Diary- Log study to enhance pupils' perceptions of their ability and feelings in the classroom.

Lead Researcher: Stephen Earl

Please read the information below, fill in your name and sign in the space provided to confirm your consent for your child to take part in this study.

----

1. I have read and understood the information above.

2. I understand the purpose of the study.

3. I have been able to ask any questions that I had.

4. I understand that it is my choice for my child to take part in this study.

5. I understand that my child has the right to withdraw from this study at any stage without giving a reason.

6. I understand that all the information my child provides will be treated in strict confidence.

7. I am aware that focus groups will be audio recorded for the purpose of analysis but that no identifiable information will be used.

8. I am happy for my child to take part in this study.

| _____ | _____ | _____ |
| Parent/ Carer Name | Date | Signature |

| _____ | _____ | _____ |
| Lead Researcher | Date | Signature |

Teacher Information and Consent Form (Chapter 5 Research)

A study about how pupils' psychological experiences.

I am a researcher from the University of Kent and I am interested in how pupils perceive their feelings of competence (i.e. feeling they have ability to succeed) and relatedness (i.e. developing close connections with others) at school. All pupils do some fantastic things at school but sometimes they might not realise it, so I am looking at ways to help them realise when and why they may be successful. I would like to invite you to take part in teacher group discussions, held on two separate occasions, about the feasibility of providing pupils with a 2 week diary log. In this diary log pupils record activities they enjoyed or thought they were successful at.

These group discussions will involve approximately 5-6 teachers from your school, and each group discussion will take approximately 45 minutes. Each discussion will be organised at a time of mutual convenience for all the teachers involved, to minimise any disruption to your regular schedule. Each discussion will be audio recorded for the purpose of the research, however all information will be confidential and will not be available to any pupils, other teachers outside of the study or your school. If this information be used for scientific publication, no identifiable information will be used. Discussions will only be in regards to the pupil completed diary-log and are not concerned with or evaluating your teaching. You do not have to answer any questions you do not wish to, and you have the right to withdraw from this study at any stage without giving a reason.

If you have any questions, please feel free to ask now, or at any time during the study. Please read the information below and confirm your willingness to take part. Please fill in your name and sign in the space provided to take part in this study.

WILLINGNESS TO TAKE PART

1. The purpose of this study has been explained to me.

2. I have read and understood the information above.

3. I have been able to ask any questions that I had.

4. I understand that it is my choice to take part in this study.

5. I understand that I have the right to drop out from this study at any stage without giving a reason.

6. I understand that all the information I provide will be treated in strict confidence.

7. I am aware that focus groups will be audio recorded for the purpose of analysis but that no identifiable information will be used.

8. I agree to take part in this study.

A study about how you feel at school.

I am a researcher from the University of Kent and I am interested in how you feel during your school lessons. All pupils will do some fantastic things at school but sometimes might not realise it, so I am looking at ways to help you realise when and why you are successful. I would like to ask you to complete a 2 week diary log, where you record activities you enjoyed or thought you were successful at. This will take no more than 5 minutes each day for two weeks.

I would also like to invite you to take part in two group discussions to get your opinions and ideas on the diary log, and complete a short questionnaire. One group discussion will take place before the diary blog and one after. These discussions will be audio recorded for the research, however all information will be confidential and will not be seen or heard by other pupils, your teacher, or your school. There are no right or wrong answers and you do not have to answer the questions you do not want to. You can withdraw from this study at any time without having to give a reason.

If you have any questions, please feel free to ask now, or at any time during the study. Please read the information below, fill in your name and sign in the space provided to take part in this study.

WILLINGNESS TO TAKE PART

1. The purpose of this study has been explained to me.

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6. I understand that all the information I provide will be treated in strict confidence.

7. I am aware that focus groups will be audio recorded for the purpose of analysis but that no identifiable information will be used.

8. I agree to take part in this study.

Preliminary Pupil Focus Group Interview Schedule (Chapter 5 Research)

- 6-8 pupils (Sit pupils and myself sit in a circle, no table).

- A recording device in the middle of the circle, and one behind me.

  Duration: 45 minutes (maximum)

Introduction
- Explain what a focus group is:

- I will ask some questions, and I am interested in their opinions/ suggestions/ ideas.

- There are no right or wrong answers. So please answer as honestly and openly as possible.

- I am interested in everyone's opinion, so I may ask you for your opinion from time to time. You do not have answer any question if you do not want to.

- The discussion will be recorded so I can remember what has been said afterwards.

- Please don't worry if I write things down, I make take notes at times to remember what has been said.

Ground Rules
- If you want to make a point, just raise your hand so everyone is not talking at once.

- Let someone else finish giving their opinion before you start talking.

- Once we have finished talking about one question, we will then move on to another question.

The Topic
- "You will all do some fantastic things at school but sometimes you might not realise it, so I want to find ways to help you realise when you do really good things and why".

- "For instance - when you think you are really good at something, maybe a task or helping others, you will probably feel better".

- "You will also probably enjoy times more when you are around people you like and work well with".

- "I want to think of ways to help remind you of things you were good at and enjoyed".

- "So, today, I want ask you some questions to get your ideas and suggestions that may make you feel better".

- "Is this ok with everyone? Does anyone have any questions at the moment?"

1. Familiarisation

- "Can everyone write their name on a sticker, just so I can get to know everyone's names"

- "If we go round the group, can everyone introduce themselves and say something in the last week that they have enjoyed or they thought they were good at. This can be anything, and doesn't have to be at school. So…. Hello, I am Stephen, and I really enjoyed a swimming session yesterday."

- Elaboration Afterwards: "Excellent. You have all done some exciting things.

  This is the kind of thing I would like to talk about today, where you think of all these good things that do each day and see if this helps you at school. For example, you may do some really good things at school but then forget about them. So I would like to help you remember them, and what you liked about them."

2. "So what I am thinking of is giving you a 'diary' in which you could record all the times, in and out of school, that you liked and enjoyed. Rather than times you didn't like".

   (Show them an example of the diary)

   Question: "If you were asked to complete this diary, what would you make of it?"

- Elaboration: "Would you be able think of things from the last week or day?"

3. **Question:** "Is this something you think you would complete?"

- Elaboration: "When do you think you would complete it?"
- Elaboration: "Can you think of any reasons why you may not complete it?"

4. **Question:** "Do you feel this diary may be extra homework?"

5. **Question:** "How could it be made more enjoyable?"

- Elaboration: "For example, would you prefer coloured pages?"
- Elaboration: "Would you prefer to log a picture and write a comment?"
- Elaboration: "What about completing it on your IPad/ computer?"

6. **Question:** "Do you think you will remember to complete the diary?"
- Detail Probe: "What may help you remember – email reminders?"

7. **Question:** "Do you feel such a diary will be useful, or not?"
- Elaboration: "In what way may it be useful?"
- Elaboration: "Do you think this may help you at school?"

- 4-5 pupils (Sit pupils and myself sit in a circle, no table).

- A recording device in the middle of the circle, and one behind me.

  Duration: 45 - 60 minutes

Introduction (explain the focus group)
- Hello everyone. The aim of this focus group is help inform the development of an intervention to help pupils at school, and I am interested in your opinions/ suggestions/ ideas.

- There are no right or wrong answers. So please answer honestly and as openly as possible. As you work with the pupils every day in the classroom, your opinions are very valuable for this research.

- I am interested in everyone's opinion, so I may ask you for your opinion from time to time. You do not have answer any question if you do not want to.

- The discussion will be recorded so I can remember what has been said afterwards.

- Please don't worry if I write things down during the discussion, I make take notes at times to remember what has been said.

Ground Rules
- To avoid everyone talking at once, if you can let someone else finish giving their opinion before you start another point.

- Once we have finished talking about one question, we will then move on to another question.

The Topic
- "All pupils will all do some fantastic things at school but sometimes they might not realise it, so I want to find ways to help them realise when they do really good things and why".

- "For instance - when they think you are really good at something, this could be a task or helping others, they will probably feel better and engage more".

- "They will also probably enjoy times more when you are around people they like, and who they are comfortable and work well with".

- "I want to think of ways to help remind themselves of things they were good at and enjoyed, rather than focus on things they were not good at or don't enjoy."

- "So, today, I want ask you some questions to get your ideas and suggestions about ways to help pupils".

1. Familiarisation

- Elaboration: The kind of thing I would like to get the pupils to do, is for them to think of all these good things that do each day, and what aspects they were good at or enjoyed. Hopefully this will help them at school. For example, they may do some really good things at school but forget about them and focus on things they didn't like or weren't good at. The way in which pupils perceive themselves, and different situations, is really important for their motivation and can influence how they interact, behave and perform."

2. "So what I am thinking of is giving the pupils a 'diary' in which they could record all the times, in and out of school, that they liked and enjoyed".

(Show them an example of the diary)
Question: "If pupils were asked to complete this diary, what do you think they will make of it?"
- Elaboration: "Do you think they will be able to think of things from the last week or day?"

3. **Question:** "Is this diary something you would promote with the pupils, or not?"

- Elaboration: "In what ways would you promote it?"

- Elaboration: "Are there any reasons you would not promote it?"

4. **Question:** "Is this something you think pupils would complete?"

- Elaboration: "Can you think of any reasons why you may not complete it?"
- Elaboration: "Do you think they may feel this diary is extra homework? How could this be avoided?"

5. **Question:** "When do you think pupils would complete it?"
- Elaboration: "Would it be something you could do at the start of a lesson?"

6. **Question:** "How could it be made more enjoyable?"
- Elaboration: "For example, would they prefer coloured pages?"
- Elaboration: "Would an electronic version be easier for pupils to complete (e.g. IPad/ computer)?"
- Elaboration: "Would they prefer to log a picture and write a comment?"

7. **Question:** "Do you think they will remember to complete the diary?"
- Detail Probe: "What may help them remember – email reminders?"

8. **Question:** "Do you feel such a diary will be useful for pupils, or not?"
- Elaboration: "In what way may it be useful/ or not useful?"
- Elaboration: "Do you think this may benefit them in school?"

Activity Diary

☆ The aim of this diary is to help you record and remember times that you felt you were good at something, and/or worked well with others.

☆ You can complete the diary at any time you wish.

☆ The questions **in orange are about things you felt you were good at**, and the boxes **in blue are about times you felt you worked well with others**.

  ➢ The activity you felt you were good at can be *different* from the activity when you worked well with others.

  ➢ Some days you may only complete one set of questions. For example, you may only be able think of something you were good at, but not a time when you worked well with others.

☆ The dairy is organised into 3 sections:

  ➢ *Morning Lesson*: This can be something from a particular morning lesson, or a mixture of things from different morning lessons.

  ➢ *Afternoon Lesson*: This can be something from a particular afternoon lesson, or a mixture of things from different afternoon lessons.

  ➢ *Other Activities*: These can be things that you did outside of lessons at school (e.g. lunchtime, after school clubs, sport sessions), or activities you do in your own free time (e.g. spending time with friends).

☆ You do not have to complete every section. For example, some days you may write a lot for the morning lesson, but very little for the afternoon lesson.

☆ On days when you feel you may not have much to write at all, you can still try to think of something you did well or enjoyed on that day. These may be things that you don't normally think of (e.g. *being on time for a lesson* or *helping someone).*

  ➢ Don't feel that you have to write something every day. There may be days when you have a lot more to write than other days, so don't worry if you leave some days blank.

Helpful Tips

1. For the questions - "What were you good at?" and "When did you work well with others?" - Describe the activity that you did.

   ➢ Example: "I thought I did really well today in Maths today. We were learning about fractions".

   ➢ Example: "In my Science lesson today, I helped someone understand the task as they didn't understand what we had to do".

2. For the questions "How did you feel?" – Just write the feelings you felt.

   Some examples may be:
   Happy, Determined, Inspired, Comfortable
   Relaxed, Energetic, Capable, Supportive
   Excited, Proud, Respectful, Friendly
   Pleased, Glad, Confident, Calm.

3. *For the questions "Why did you feel like this?" – Explain the specific things that made you feel that way.*
   ➢
   ➢ *Example: "I felt determined to answer all the questions we were set in the lesson, and was proud that I got more correct than I did last lesson".*
   ➢ *Example: "I felt supportive because I was able to help my friend, otherwise they might not have done the activity".*

   (An example diary is presented on the next page to help you)

		What were you **good at**?	How did you feel?	Why did you feel like this?	When did you **work well with others**?	How did you feel?	Why did you feel like this?
Example	**Morning Lesson**	I thought I did really well in Maths today. We were learning about fractions.	Determined Proud	I felt determined to answer all the questions we were set in the lesson, and was proud that I got more correct than I did last lesson.			
	Afternoon Lesson	In P.E, I was really good at basketball.	Inspired Happy	I passed the ball really well, and got 4 out of 5 shots in the basket.	We had to work in groups of four for a passing drill.	Supportive Excited Happy	I thought our group worked well together. I helped my friend with their catching.
		I thought I did really well in Science. We had to work in groups to think of a research project.	Energetic Interested Happy	I liked the topic we are looking at, and enjoyed reading different information to research.	I helped someone in class understand the task as they didn't understand what we had to do.	Supportive Cheerful	I felt good because I was able to help them, otherwise they might not have done the activity.
	Other Activities				I went to the cinema to see a film, with my friends.	Friendly Comfortable Relaxed	I enjoy spending time with my friends. We all listen to each other, and have fun.

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		What were you **good at**?	How did you feel?	Why did you feel like this?	When did you **work well with others**?	How did you feel?	Why did you feel like this?
Monday	**Morning Lesson**						
	Afternoon Lesson						
	Other Activities						

<u>Questionnaire</u>

 My name is Stephen Earl and I am a PhD student from the University of Kent.

This questionnaire is about how you found the activity diary you completed over the last two weeks.

Please note, all responses will be kept completely confidential so will **not be seen by any other pupil, your teacher or your school.** All the data collected will be used for my PhD project at the University of Kent.

Please read each question carefully. This is not a test, and there are no right or wrong answers. Please answer with complete honesty

If you do not understand a question or need some help, then please ask me. You do not have to answer a question you do not want to.

Thank you for taking the time to complete this questionnaire.

Information about you

Gender: Boy ☐   Girl ☐

Date of Birth: _____

1. At what time of the day did you normally complete the diary log?
(You may tick more than one box).

In the morning ☐

Lunch time ☐

Afternoon ☐

After school ☐

In the evening ☐

2. Where did you normally complete the diary log?

At School ☐

At Home ☐

Elsewhere (please state) _____

3. Did you enjoy completing the diary log?

Yes ☐   **No** ☐

Please give details why: _____

_____

_____

4. How did you find the diary log to complete? (Please circle only one number)

Very Easy		Neither Easy or Hard		Very Hard
1	2	3	4	5

5. How often did you remember to complete the diary? (Please circle only one number)

Never	Rarely	Sometimes	Often	Almost Always
1	2	3	4	5

6. How did you find thinking of activities to write in your diary log? (Please circle only one number)

Very Easy		Neither Easy or Hard		Very Hard
1	2	3	4	5

7. What type of activities did you think of?

_____

_____

8. What type of diary-log would you prefer?

Paper   ☐

IPad App ☐

Email   ☐

Other (please state): _____

9. Do you have any suggestions that would improve the diary, or things you think need changing?

_____

_____

_____

_____

1. **Question**: "How did you find the diary book?"

2. **Question:** "Was it what you expected?"

   - Elaboration: "Do you feel it help you, or not?"

3. **Question:** "Was there anything you found difficult?"

   - Elaboration: "Did anyone not enjoy the diary?"

4. **Question:** "What would make the completing the diary easier?"

5. **Question:** "Where did you complete the diary?"

   - Elaboration: Why did you choose to complete it there?

6. **Question:** "Did you remember to complete the diary all the time?"

   - Elaboration: "What would make it easier to remember?"

7. **Question:** "How did you find the paper version?"

   - Elaboration: "Would an electronic version be better?"

   - Elaboration: "Taking a picture and writing a comment?"

                  "Voice recording rather than writing?"

8. **Question:** "Are there any suggestions or important things that we have not discussed that may be useful for the diary?"

Follow-Up Teacher Focus Group Interview Schedule (Chapter 5 Research)

1. **Question**: "How do you think the pupils found the diary?"

-       Elaboration: "Do you think they effectively completed it?"

2. **Question:** "Do you think the pupils enjoyed the diary, or not?"

    -   Elaboration: "Do you think it was helpful, or not, for the pupils?"

3. **Question:** "To what extent do you think the pupils understood the purpose of the diary?"
    -   Elaboration: "To what extent do you think, or not think, pupils perceived the diary as additional work?"

4. **Question:** "Did you promote the diary in any way?"

5. **Question:** "When did the pupils generally complete the diary?"

    -   Elaboration: "Did any pupil complete the diary at the end of a lesson?"

6. **Question:** "How well do you think the pupils remembered to do the dairy?"

    -   Elaboration: "Do you think reminders would be needed?"

7. **Question:** "How do you think the pupils found the paper version?"

    -   Elaboration: "Are there any other methods that you think would work better?"

    -   Elaboration: Pictures or voice recording, rather than writing?

8. **Question:** "Are there any suggestions or important things that we have not discussed that may be useful for the diary?"

1. **Ways you think may help pupils**

Teachers

"Success" & "praise"

Learning environment.

Pupils "bounce of each other"; social comparison with peers

Difficult to hide social comparison.

"Fear factor"; some better without others watching

"Ask them at the end of a lesson" (what they did well, and think about why)

"We ask them 'what went well, and even better if', but that does not relate to why or how they felt".

"Students will have different times when they were good at certain things"

"Role models are important" – "compare skills to others".

"Some pupils may know they have done good work, but are embarrassed by it. They don't want to be called a 'clever clogs'".

Pupils

When "teachers respond to things your good at, and things you're not so good at in a different way".

Better feedback.

"Know the level you are at".

"The thing that helps you remember the most is from other people, telling you have done well"….. "Telling yourself".

"It depends on who is giving you the feedback – if it is a teacher, that you have seen do good work, is complimenting your work you are more likely to remember than a random person telling you 'you are good'".

"Congratulated individually", "If they congratulate the person sitting next to you, then you feel like you haven't done very well".

"If teachers say 'the class did well', you are less likely to remember".

"Pictures", "or write notes", "use snapchat, social media".

"Make a pica-lage"

"Taking a picture may be quite easy compared to writing".

"Videos of you, recording and see 'I did that'".

2. **Benefit/ Usefulness**

Teachers

"I think it's a good idea, often with P.E. you get the parent attitude railed to the child. They already don't like it because of someone else. It is a good idea to get them to think as their own individual".

"I would promote this as often I pupils don't think about the things they are good at. I think if parents might be impressed by seeing what their child had done".

"I think it is a nice positive thing".

"It is something we can build into the scenery – asking them what they did well, give examples for their diary".

"It would be an interesting for us to see if pupils rate lessons more positively are those that receive more encouragement".

"Resilience is tough to instil in children, if this helps than that would be a good thing".

"I think teachers, and parents, quite quick to jump on negative. You are not so quick to jump on the positive stuff, and this diary may help highlight the positives".

"We don't get enough time to talk to the kids, on a personal level, and get them on side. You would never know things…..they might show up in their diaries".

"I think it is a really good idea, I don't think they realise just how successful they are".

"It is good because in work experience they have to complete something saying what they did well"

"For building self-esteem, yeah"

"They like to talk about what they have done if they have it written down….help them talk about what they have done, family, outside of school. They can talk about what they have done, we can ask the why?"

"If you did it on a voluntary basis, some would do it….there is a risk that very negative pupils won't do it. They are totally disengaged at some level already and even that carrot won't be enough. And they are the kids that would benefit a lot from realising what they are good at".

"See the most benefit in lower groups".

"Perhaps select lower ability groups, that are nowhere near their targets……..the problem with that some pupils may be strong academically ……feelings and development wise they are way behind".

"Teachers could pick out certain students they think would benefit……pupils like feeling special".

"Parents are not in a position to help by taking them to every social situation. To build these skills they are going to come from so many different places. The school can't just provide these on its own, parents can't just provide these on their own. If pupils can highlight the areas, and be aware of the areas, at least if they want to, can do or try to do something about it".

Pupils

"It seems a simple thing to do to help"

"I think I would forget a lot of these things if I did not write them down"

"I would forget I passed a ball (specific) but would remember I played football"

"Focus on the positives, yeah"

"Be happy all the time"

"Not as depressing"

"I think we naturally, as humans, get used to focusing on the negatives. So by focusing on the positives, we would become more positive…..see situations in a different way"

"I think people tell us to focus on the positives but we never really get an opportunity to….we never really do it. This is something we have to do, so we will do it".

You have a chance to reflect on everything, so you can see it. If you get 1% and 100%, you may focus on that 1%. But if you see all the 100%, it will make you…..

"I kind of feel it is something I wouldn't do, but if I read it back I would be like 'wow, I did some things I am proud of'".

"I don't think every day can be eventful…I think some days Monday – Friday will be not be filled in cos you are going to have a few bad days"

"Remember more good things"

I think it would be beneficial, but it may not be every day. You may have three days in a row where you don't have much, and you may think "'I don't have much, I am generally bad".

"If you don't fill all the days, you may think you're not as talented or work as hard as others"……..."I like comparing things".

"I would prefer to keep it personal but I would end up comparing".

"Got no clue….boring"

"We should do it…..when you write it down, you remember it"

"I like the idea, but it may take a long time"

"Yeah cos if you just take a picture of the work you are doing, and write a comment".

(Long winded)

"It will be hard"

"it will only take 5 minutes"

"You may feel you had a really bad day, and you don't want to talk about it".

"I think it will cos there are days where I don't feel like doing anything, but I could look back and see what I did".

"I feel like I don't have time to reflect on my day, so if I had this I would reflect more".

"I think it is quite good, I would do it"

"It would remind other people what you have done".

"you may think it is boring"…."might have other things to do".

3. Reflection (Teacher guided/ prompts).

Teachers

"It may vary in-depth"

"Even doing the diary, they will still need it pointing out to them. You won't be as reflective, they won't put it together. They will need someone to point it out."

"At the end it will need to be shared with them that 'did you know when you worked will with others, you feel better".

"You will need to set the scene, otherwise they will not know why they are doing it. Then afterwards to point out – sum up findings".

"An interval session"

"Needs to be more specific – if more general, would go off on all sorts of tangents"

"Qualitative answers may be very patchy, some will just say 'its ok' or 'nothing', or 'everything'.

"More questions - then easier to answer so "give an example of one thing you did well".

"If we decided what the important aspects are, then gave them an option for them to select of the most important options (e.g. instructions, encouragement). I think this is too vague, they won't know for themselves".

"Pupils are not as reflective".

"As long as you give them a template, they will have something to follow".

"They like to have a guided answer, an example".

"What you don't want is something with great big boxes that is intimidating for them to fill in".

"Options provide a prompt, if they just go for it, it may be 'random' the responses that you get".

"Need to be specific, every lesson and outside class"

"or specify three things each day"….if you leave it to them, it just won't happen"

"Pupils may not see something but if you ask questions"…..

"Got to push them towards an answer. Otherwise, they will still go in with the same mental attitude that they came in with"

"What you don't want is something with great big boxes that is intimidating to fill in".

"Options provide support a prompt – if they just go for it may be 'random', the responses that you get".

"If you did ask them 'did they enjoy something' they would say 'yes'; but if you ask them 'why', they would be like 'erm…'"

"Pupils can tell you what they did well, where they need to improve, they struggle to tell you why? They can-pinpoint why".

"A lot of lower abilities are quite negative about what they have done. We try to praise positive things, they don't recognise it for themselves".

"Students are quick to say what they can't do, rather than what they can"

"Afterwards, after you go back and point out, the penny would drop. They see the benefit".

"Help to reflect on it so it is not a dead thing that is forgotten from one month to the next".

"As a task you structure to reflect, they can do it. But just independently, not many of my kids can do it. They don't think about the why themselves".

"They probably reflect naturally, but when it comes to using that next time to change this or that, I think that is the bit that is missing. 'I know I didn't do well, and next time I won't do well as well".

"If you don't have regular meetings, it will just drop off".

"I can't see it working if it is something that is not regularly monitored".

"Some of the lower pupils with low-self-esteem, may not realise they have low self-esteem. Some of them know it but don't know what to do about it".

"It is important you do the afterwards, and along the way".

"If you take them out of their normal environment, they will behave the same way when around those people. Pupils will compare to each other. Those better than them will over-power them".

"If you give options, you should also have one that says 'none' or 'open' because as they develop, they feel they don't need the options".

"it looks long (currently), having boxes makes the feel like they are making progress".

"options of positive feelings, like proud, excited"

"having a scale allows them to see progress"….."everybody's perception is different…..if someone is not confident, they may make think they cannot get a 10 so 8 is high for them, so they give themselves a 3".

Pupils (activities/ guidance)

"More broken down the easier it is to fill out"

"I think options would be better because at the beginning it was difficult to think because there wasn't really any categories"

"It easier when you are prompted"

"It's easier with choices" (but space to write).

Pit stops – 'ok so I did this. In need to do that, reflecting on your reflections".

"I think I would (reflect) but the guidance would definitely help".

"I would basically, but not the way the guidance would help".

"I like the two options, and then something else"

"Maybe it is just me, but I would prefer this format where it is all chunked out (different boxes). If you had nothing to write, you will be like 'oh, I have got to fill all this out" (if large boxes).

"You may waffle"

"Start writing for the sake of writing".

"Could you give extra boxes, in case you has an especially good day"

(Weekend) "more to write about"…."during the week, it is more lesson or club but the weekend more social time".

""I don't disagree (for each lesson) but say you had an OK lesson, didn't do anything good, say you had a whole day like that…it is going to look a bit out of place".

"Every two lessons may be better"

"You don't have to do it every lesson, so you may not remember the first few lessons but the last few lessons.

"I would prefer to think of other things2 (not boxes).

"Select one or two activities"

"If you left it open to fill in different activities".

(Score) "That would be easier"; "may help".

"I think don't do it every lesson"

"The best morning lesson, and afternoon lesson"

"Some days you could just leave it blank, cos not every day I am going to go for football or science lesson".

"School and free-time"

"If you had a bad day, you wouldn't just have to talk about school"

"Some teachers may be like you have to do it"

(Not want teacher to check), "what if you had a counselling session, or family issue".

"You could have a Monday activity for school, and then Monday activity or hobby"

"Different activities for different days"

"If you don't have an activity you could leave it blank"

"maybe half-way through the week"

"Maybe one teacher can go through it each class"

"I don't like talking to the a teacher cos I feel awkward and stuff"….."say 'I didn't like a lesson', you don't want to tell them".

(Reflection issue)"Days when you didn't write anything…..you may write 'oh I did badly on a test' then you may think you will do badly on a test".

4. Incentives
<u>Teacher</u>

"I think 70% would do it either way, and you would not get much more with an incentive".

"You will want it to be reflective" (rather than teacher forced).

"Give them an incentive to do it"

"Could get merits or a tournament".

"Kids like a sense of responsibility, if you have been selected for this, particularly for younger ones….older ones not so much".

"If you handed this to pupils, they are going to ask why? I think they would do it but I don't know if they would see the benefits of doing it. And that is a big thing in getting them to do it….unless it was useful for something later".

"If they know they have to do it, but they don't want to, you will get made up things on there. Or they will complete it quickly, so they don't really think about it".

"You have to sell it to the pupils… a benefit that they can use. Then there is a point to doing".

"It has to be fun, and they can see the benefit to it".

"Can they see improvement…. see progression, build self-confidence, or maybe a prize, which provides a carrot for them".

"Could it be building to something where they are using it, like a reflection day or a trip out where they are going to reflect back…..like a progression or challenge".

"Where they are at the moment, by that challenge day…demonstrate all these things".

"Once it became generic across all year groups, it will lose its appeal. Allow students to go out and meet external person".

"If you say to a class 'it's your choice if you want to do it', you will probably get two people that would do it".

"Keep it out of lessons", "not homework".

"Maybe something like the library to run".

 "If there is someone that is encouraging them"

Instead of going to a normal personal tutor, we identify set pupils, and every two/ three weeks they go with people that are involved in this"

"The more you make it like school, the more they don't want to do it. The more you load it like lessons, they won't want to do it. Make it unique, feel special"

"Pupils work better with external, they may not be as honest if it was a normal teacher"

<u>Pupil</u>

(Incentives) "A box of maltesers"; "Nothing"; "snickers bar"; "privileges in class" ;

"If I get a reward, I would definitely do it longer…….if we were doing it for longer"

"Merit marks do not mean anything, if I was in Year 7, I would be like 'yay, a merit mark'".

"Sweets or money"

"Not all pupils would do it – about 70% would do it without a bribe"

"If it helped I would keep doing it"

"Encouraging positive thinking"

(Merit marks) "you feel more if you had to do it, and rush it"…..."may put less effort in"

(Less motivated by merit marks than year 7)

 "Could we get something out of it…..like when we do our homework, our teacher says well done?"

"like we could get something like a merit…"…."we get merit for every day".

"Achievement points….you get a prize"

"You can trade them in for amazon vouchers"

"Yeah, but after we have done a whole two weeks, you could give merit marks for the whole two weeks".

(Useful) "Yeah, get more merits"

"If you don't do a day, I don't think you should get a merit"

"I would prefer to hear about the good things, rather than the punishment"

I don't think we should be pressured to homework with punishment. The homework isn't to help the teacher, but to help you personally".

"There are some people who won't do it. They don't do homework"

"Maybe when you first do it, you could get a prize".

"A merit if you do something well at school you get a merit"

5. Content

Activities/ Homework

(Teacher)

"It is optimistic, in effect you are setting them homework every day. Some may do it but if they get behind, they may think that is it and it gets put on the backburner"

"Yeah, they will view it as homework"

(Pupil)

(Homework) – "No, I write a diary anyway"

"It is just an extra thing to do"

"I get really bored after school"…"It doesn't take too long".

"Homework"

"Not really, it wouldn't take too much of your time".

Just because it is just one entry each day".

"Even if I did find it a lot, I don't think I would find it boring or anything".

"I think it should be more focused on school" ….."you don't do much outside of school".

"I think it should be both though cos then you have a wider variety of activities".

"Not every day you're at school, not everyone wants to think about school".

"During summer holidays, people will want to think about will just have a massive gap"

"school is only a little part of your life"

"it is a big part"……"its bot every day of the year"

"split into free-time"

(Homework) "Yes"…. "Cos it is school based".

"I think it should be school-based, and hobbies"

(Splitting ability & social)

Teacher

"Differentiate 'good at' and 'social aspects'.

Relatedness between pupils often does not happen…and that is a worry for them coming into the lesson, and it effects what they do in the lesson".

"Something you do well at, may not be something you enjoy".

"Different options for the two"

Pupils

"I think they are different" (categories)

"I enjoy playing football but I am rubbish at it so having two separate boxes would be better".

"more broken down the easier it is to fill our"

"Things about a lesson, a teacher does, that are quite mundane, so you didn't enjoy them but were still good at".

"you could say I did well at activity, but enjoyed the starting activities for it"
"Somethings you might think you have done well, but you may not necessarily enjoy them"
"that would be easier".

(Negative)
Teacher
"Would you want to put anything negative? If you want them to be resilient, is one way not saying 'did you struggle with anything', what is the next step for you?' This is all very light, fluffy, and friendly".
Pupil
"Think of things to improve on"
"You could put the things you did well in one colour, and bad things in another"
(Things to improve on) "Sometimes you forget why, but are still in a bad mood".
"Can you write things you want to improve on"
"If show it to other people, they could give you reasons to show you have done well, and things to improve on".

6. Time of Completion
Teachers
"Not at home, need to be directed time"
"Some would do it at home, it depends".
"at school would be the best way to get done more promptly and effectively".
"If pupils had to fill in their activity diaries at home, I don't think they would do it".
"More likely do it at school. But nor definitely, I think that would depend on the teacher".
"Could use it in personal tutor time, with small groups. If you had tutor time this would be ideal, but we don't have tutor time".
Pupils
"I would probably do it at home"
"I would probably do it straight after, because I would forget…..you can remember vividly"
"Something small, that you did – you would need to do it straight after a lesson. If it was something big, like a percentage on a test, you could probably remember when you get back"
"It would be easier to remember at the end of a lesson, you would have more things to say".
If you have had a bad lesson, at the end of the day you would just remember the bad things, but at the end of a lesson you can remember the good and the bad".
"During the day"
"I would prefer to do it at home"
"I wouldn't remember at home, after school I forget everything".
"At home is a more relaxed environment"
"It depends how detailed it has to be…if juts want to remember the big things then you could do could do it at home".
"If you want to remember the good parts, then during the day, the good parts would seem more important".
(In lessons) "It would depend on how long you had to reflect on it. You may rush and miss something".
"If you had a good 5 minutes"

"I think if you could put a few bullet points after a lesson, then at the end of the day reflect differently"

"Bullet points to compare at the end of the day".

"I like the idea of having a few minutes to write all the good points, then summarise at the end".

"free time, generally any free time"

(at home) "no"…." like key curriculum homework"

"The teacher might tell us to do it at school but you may forget, or get distracted".

"some people might find their diary personal"….."if it was something personal, like a birthday party, you might want to keep it personal".

"I would do it at home"…."if you do it in a lesson, you may miss your lesson".

"I think at home"

"After lessons"……"5 or 10 minutes after".

"I wouldn't"

(At home) "No"

"Yeah, I would do it with my homework"

(In school) "Yeah cos then you don't have to write about it when you get home".

"I reckon if the teacher gives you 2 or 3 minutes at the start of a lesson then do it then. Or 5 or 10 minutes at the end".

7. Reminders

<u>Teachers</u>

"A lot do not check their emails"

"They could set reminders on their phones"

"Or get regular updates from teachers"

General reminders; like questions 'how are you getting one".

"Even just an app, and it pops up with a reminder"

"Not if they were emails, students don't check their emails"

<u>Pupils</u>

"End of a lesson"

"If I write it down"

"If it was something really easy to remember"

"I have had problems with my school email"

"I would set an alarm"

"Not school email"

(Only check) – "only when I am expecting an email"

"I now get my school email on my phone"

"I am quite forgetful, if I got reminded it would be quite helpful"

(Emails) "I would feel I had to do it"

"We could just tell each other"

"I don't check my email"

"Text message may be better"

"I feel I could do it without the email"

(Check email) "Not a lot"…."not at home"

"I get alerts"

"you could put an reminder on your iPad"

"You could put it on your notes, and do it at home".

"If I left it (reminder) in a place I would look"

"I don't open my emails"

"text your friend"….."they don't have our phone numbers"

"Email, I don't always read my messages".

"yeah, I would need a reminder"……2busy doing homework and stuff"

"We remember our homework, so why would we not remember to do this".

"If (a teacher) say 'have you done it', it would feel like homework".

8. Presentation

<u>Teachers</u>

"What about on their phones, they are 'phone-tastic"

"Google drive; own access; username, send it out to them, everyone has their own copy".

"Computer time is limited at school"

"In a dream world, giving an app on their phone would work quite well"

"Word document may work"

"A small number may work with paper, larger number could get it on google"

"Some pupils in P.E, have video of the skills they have learnt was good"

"Progress, showing them what they did. Get them to see it…."

"You don't want it to be left out for someone else to read. That's why it may be better if it was online, just for them".

"We did some personalised binders, they were really good with pictures of family, outings, and friends".

(Pictures) "Does not need to be of them"; "can be difficult to capture a moment"

"I can't see a paper version working".

"If it is on their Ipad, on an electronic file, to log in, immediately you are on to a win".

"Put it into a game"

"Even just an app, where you log in and answer three questions, and it pops up with a reminder"

"Or on our webpage that they can log into"

"Could use "Edmundo" to allow students & teachers to upload information"

"I like the video thing, a short, 60 second video, it has to be done quick"

"Even if they were nervous, they could just talk into the camera"

"Short, snappy"

"If you use one of the apps, that we use (Edmundo or ShowV), link it to a folder that they can upload".

<u>Pupils</u>

"It would be cool if it was on a computer so it would be easier to type it out (rather than write) cos it would take longer".

"I like writing"

"I can't use a computer"; "I prefer getting a piece of paper and write it out"

"Could do it on our phone"

"I would prefer it on a word document, cos I tried to write a diary and never completed it".

"Or google documents, that is easier to access on your phone, and type it our"

"I already have a diary on my phone"

(Webpage) "I think it would be easier, with quick options to click on".

"I would find it easier to write it, but I get why a computer option would be a lot easier"

(Choice) "People could do want they want"

(Picture) "I would like that"; "would help your memory, you would be like 'why have I got that picture….oh yeah'"

"Reminds you"; "that would help"

"It would help you cos you could take a picture throughout the day, then when you get home you can write about it. For me, pictures help me remember stuff".

"My phone can't take pictures".

(Binder) "I would lose it"; "I would just stick it in my pocket"; "my planner has got about 10 pages that are all scuffed"

 "I think a computer would be easier"

"If it is on my phone, I am on my phone more than I am on paper. So if it was on my phone, I would be more like 'I should fill it in'".

"My hand writing is bad so I can control that on a computer….make it neat and tidy".

"If it was on a computer I would be tempted to change a lot of things….I may think it does sound right, and write something false".

I would prefer paper, because I could do it in my room, whereas on a computer I would need to go in a different room or at school".

"I guess I could do it on my phone but I think the keys are really small".

"If it was on a computer, I would feel it is more like homework".

(Picture) "You could miss things taking a photo"

"You might think why I have taken a photo"

"Folder cos it makes it more personal"

"I would prefer a diary not a folder"

 (Personalised – generally appealing). "It would feel like yours, a reflection of you"; "it would seem like more fun".

"a book has more freedom to personalise, rather than a computer"

Yeah cos if you just take a picture of the work you are doing, and write a comment".

(Complete writing) "No"; "I would leave it in my bag"

"He could do it differently, chose if he wants a picture or piece of paper"

"There is no entertainment to it" (written format)

"If we could personalise it would be good"

"If we used coloured paper, we would have to find different coloured pens"

(Personalise) "Yeah, otherwise it would be a bit boring".

(Written version) "I would just keep it in my bag".

"Most people have an iPad and would likely remember their iPad, rather a piece of paper".

"I use my phone"

"I would prefer a piece of paper"……"you could improve your hand-writing".

"You could email it back"….."But that would be a lot of work".

"If it is in a folder, it won't get broken"

"We have an iBook, where we do our homework".

"(activity more fun) – that game 'Kahoot' is fun".

9. Name

Teachers

"Activity log"

"Personal appraisal"

"Success model"

 "Need the word 'success' in the title, activity sounds like work"

"Success criteria"

"Personal portfolio"

"Personal log"

"If it is online, it is a vlog…..that is something they are madly into at the moment"

"Journal – too old"

Pupils

"Doesn't really change how you look at it"

"I think a diary is more personal, you can relate to it more"

"Diary sounds more personal"

"Journal"

"Portfolio sounds posh"

"Journal sounds child friendly"

10. How to Promote

Teachers

"Couple of things teachers could say to help promote the students"

At the end of each subject, we could ask things at the end of a lesson".

"Could use it in personal tutor time, with small groups".

Overview of Transcripts for Follow-Up Focus Groups (Chapter 5 Research)

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1. Work/ Difficulty/ Fun

<u>Pupils</u>

It wasn't too much work, the work was remembering".

"I expected that I would have a lot more to write about, then realised I didn't".

"I couldn't think of anything"… "Later days, I read the prompts at the beginning"

"I got a bit lost"

"I couldn't be bothered to do it"

"I think it is daunting to have boxes, but an app would be good to select"…"option"

(Two boxes) "difficult to answer, cos some of the things I wrote about didn't really answer the question"…."I just wrote them down anyway".

(Working with others) "a bit restricting"…."would be useful having a column of things that made you happy"

"I felt the structure limited your thinking" –"when it said morning lesson, even on the other activities I was thinking about lessons"

"Other activities were lessons (but the others were lessons) –"what about break time – I didn't think it fit".

"Different structure for different times of the week"

"At school so much easier to write about that out of school"…. "Out of school was only one thing"

"Writing about school is easier, your mind is orientated around lessons. In the summer holidays, more around you personally".

"There were things that we are good at, don't always make us happy"

"When it said 'how did you feel', I felt you always had to put something positive, even though it wasn't always entirely positive"

"I was surprised at how many thing I had to write, so I wouldn't need the negatives"…."it was good to do some positive reflection".

"I thought I would enjoy it more, as time went on I found it less appealing to sit down and write"

"It didn't take that long in the first week"

"It took me twenty minutes to think of stuff, that is not including writing it down"

"In the first week, I notices 'that is something to put in my diary' but the next week I forgot" (could note throughout the day to do at home)

"Some days it would take me five minutes to remember what I did" (needs spontaneous)

"It is difficult to think about out of school"

"I found it the other way round, I found the things after school would be what I chose"

"I could not fill out the after school bit, as (same as) during lessons" (issue may be specifying set activities)

"Morning and afternoon, put them together"

(Time) "About two minutes"……"it took about 5 minutes"

I would make prompts at the end of a lesson, and fill it at the end of the day"

"In the end I would just do it at the end of the day"

(Where) "In lessons, I remember more to do it"

"I would still rather do it at home"

"I would prefer to do it at home, by myself"

"You may feel rushed at school"

"I would be tempted to ask the person next to me" (at school)

"There wasn't a column for what you enjoy, just what you are good at"

"There was a column about 'how well you worked with others', it was difficult to write".

"It was just what you did well, not what you enjoyed"

"Confusing"…"yeah"

"The boxes, there was no information of what to do"

"It wasn't really fun"

"I didn't think there was a point to it"…."that's why I didn't do it"

(Boring) "a little bit"…"that's why I forgot to do it"

"I didn't see a point to it – like you get a reward or money"

"Need a reward" "of badges"

"I didn't see a reason...why to look back later"

"I thought I was going to enjoy it more, but I didn't"

"I thought it was something I would have done every day, and find enjoyable" (disagreeing)

"I thought there would be questions"

"Boxes didn't really help"…."boxes are just boxes to me"

"I would have preferred it as general activities"

"I don't look back on my school day"

"If you have lost your timetable and you don't know what you have done"

"There would be people who would be really good at this, but there will be people who are just not good at it"

"I didn't do it…I didn't want to do it"

"Hard to think of things"…. "Most of us don't do anything after school"

"Most of us things on a weekend"

"Most of us at this school don't do after school clubs"

"But there are still some things you do at school"

"If you didn't have to do it with school, it may motivate you to do more things after school"

"We still do good things at school"

It was too much work…..to fill out a box…..one page a day"

"My mind is already tired from working"

"So much time"

(Homework) "Kind of"…."I always forget to do my homework"

"Not very appealing, if homework was more fun…"

"When it relates to school, I think of homework"

(Where) "at home"…."cos people wouldn't be peeping over your shoulder to see what you are writing"…."some people would be really nosey"

(Time) "Ages"… "long"…"with my homework, I rush it and make it as fast as I can"

Teachers

"Reckon there will be quite a few gaps"

"misleading thing is they are conscientious, they may have filled it in, but made stuff up"

"I know you said 'they didn't have to do it' but they are so used to being told 'if you don't do this, this will happen'"……."so they make it up"

"They are trying to be good but that may be not what you are looking for"…..(they may say) "I will say the same thing as last Tuesday".

"Diminishes the point of it"…..."not actually reflecting"

2. Reflection

Pupils

There was one bad day……I would go home and look at the dairy, and not write anything".

"you may have a lot to write but then that one negative thing made you feel like you had nothing (to write).

(Negative) "Would be the highlight", "harder to think about".

"For me personally, I found the whole thing challenging, I understand the idea of happiness but I am a very negative person. 'I can't write anything here, I can't write anything there'.

I would prefer a negative box, or what would you rather do box"

"School is kind of negative"

"Tended to avoid the how do you feel box"

"I think if you could put negative things, it would make me feel more positive because next time you were in that situation you could reflect".

"I wanted to put something negative down"

"It depends on the activity, if it was a bad lesson, but normally it was exciting you would say something positive"

"If every lesson was bad then you may think all the day was bad"

(On a bad day) "I just didn't write"…..."Then may make things up"

"If you had a negative column, you feel you don't have to lie"

"Or you have done something wrong"

"People that have a normal diary, write down things they don't like"

"There are people in my class that definitely wouldn't do this, but if they did they would just write down 'I got in trouble for this'. All my lessons I get told off"

(Thinking about yourself) "It's hard….so many people get told off"

Teachers

"Some clearly did"

"You may still be disappointed with what you got"

"A difficulty is they have a quite narrow definition of things"

"Reflect may just mean remember"

"The depth of what that means, I am not sure they necessarily…….it is quite difficult to do"

(Interval Sessions) "Yeah"

"Within a year group we have time with form tutors and forms. Could generate a resource…..give to the head of the year" …… "PowerPoint activity to for them to teach them how to reflect"

"20 minutes (explaining) – what do we mean by reflect"……"tease out what was important".

"Them learning is quite an important part"

3. Format

<u>Pupils</u>

"If it was on an Ipad app, rather than questionnaire"

("emojii's) "That would be really cool" "so many options"

"Entry for the day would be way easier cos you wouldn't have to write how you felt"…
"Less words".

(Picture) "Helps me remember more"

"Writing can be vague"

"Or google, when you speak in and it writes the words for you"

"I would really like an app"

"I would prefer an electronic version, it is smaller and I am always on my phone more"…….
"Sometimes when I am bored, I could check my diary"

"Like stories on Snapchat"

"Yeah" (everyone uses apps)

"Even if you don't have a smartphone, some people have access at home – like an app and website, like Twitter"

"Website may be good"….."Have both"

"I think it is daunting to have boxes, but an app would be good to select"…"option"

"Prevent from going back and changing".

"You're on your phone quite a bit so an app would give you notifications"

"I would prefer paper"….. "I wouldn't, prefer an app….submit a week summary on an app would be easier"

"After a lesson, you would have your phone in your pocket so you could quickly write"

"Don't want to carry a booklet"

"you are on your phone more than paper"....."You could be reminded"

"You could do it on the bus as well, places you wouldn't normally be able to write"

"I find it easier to write notes, I can write anything I want"

"I think an electronic version would be better…if you didn't have a pen or booklet with you. Many people will have their phone with them"

(Electronic) "Makes life easier"

(Emoji's) "There are different ones. It would be easier….rather than write a sentence"…. "there are different ones that reflect different things"…."I love them"

"It can be difficult to write how you felt. But if you had emoji's you could use them to show how you felt at the time".

(Voice) ""you would do it five times"….."keep changing"…."quicker"…."but you would have people talking in the background"

"Computer that transcribe what you say" (are they accurate)

(Change entries) "I would add more, cos I thought I had not written much"

"I did a day and that was it"

"I would look back on a previous day….I may put something different (compared to another day, not to replicate).

"stop people going back"…."it would be good to add options (new activities), but not change what is there".

"I would rather have it on an IPad"…"I would as well"

"I saw it kind of like a poster"

(Difficult) "Yeah, the writing"

"More people are more likely to go on their iPad"

(Paper) "Boring"…"hard"

"If I had to recommend, I would say IPad cos it is more fun"

(Time) "Ages"… "long"…"with my homework, I rush it and make it as fast as I can"

"typing is easier"…."I type all the time"

(Dropdown options) "Emoji's"

(Log in) "Go on your computer, and fill it out"

"Keep saving it"

(Picture/video) "I would"….."I wouldn't mind"

<u>Teachers</u>

"I think an electronic version would be better"

"Less likely to lose it"

"every day they would submit it, you would get it" If they lost their phone it is not all gone".

"Database that you gradually build"

"Dropdown box of options that would kind of help"

"Some schools don't let pupils have their phones…it is less so though these days"

"Only way with paper is if they were seated, and you said go and get them out. That takes away from what you want – to sit down and use it when they feel".

"some may prefer paper"…."you could combine the two – sheets of paper and take a picture and upload it"

"just giving them a paper copy, if they do lose it, then you have lost the whole thing. Same goes for an Ipad, cos if they lose it or delete it. You need a backup".

"Videos and voice overs" – "good up-take on homework (that format) "that was not writing and typing it out".

"Paper is always an option but take a picture and upload it to the app".

4. Reminder

<u>Pupils</u>

"Only negative thing was I forgot, I tended to do it the day after"

"First few weeks was fine" (then I had to catch up).

"I can't keep up with it – some days I had loads to write down, but others I had one thing to write down and forgot it".

"It wasn't too much work, the work was remembering".

"I don't think writing is hard but remembering is hard"

"I usually did it when I got home, but remembering what to write down"

"A longer period of time could go both ways. Hard or become part of your routine".

"I did it at night, when I remembered, or forgot to do it"

"I kept forgetting"

"I had an alarm set on my phone for first few days. I just turned it off".

"IPad notifications"…….."But they could get annoying"

"Stick on the front of my planner"

"I never check my email"

"If it made a noise and came up on the screen" (notification)

"Two reminders – one during school and one after"

"I think it would be good if got to set the time for our own individual reminders"…."set a time when you weren't doing anything, otherwise you may be doing something else".

"After school, sometimes I would forget"….."Sometimes I would catch up"

"I ended up doing 3 days, and trying to remember what I was doing well"

"I would think to do it…but I would go home, and forget"

"Cos I didn't think of it as homework, I would forget"

"I had to do a whole week at home, cos I forgot to do seven days"

"Reminder"… "Email"

"You're on your phone quite a bit so an app would give you notifications"

"you are on your phone more than paper"....."You could be reminded"

(Email) "No, I think text messages would be better"

"I don't check my email as much, and a text message would just pop up on the screen"…

"Like a (app) notification"

"It depends how many are going to be sent….once a day someone might miss it but if you are going to send loads, people might get annoyed"

"I left mine (paper diary) in my bag, so I would see it"

"On an app, you could say you have done it and the notifications would stop"

"The trouble is if people have turned notifications off"

"It is quite difficult to remember to do it"

"I just didn't remember to do it at all"

"I remembered that I had it but didn't remember to do it"

"I we did it on our IPad, we would get alerts"

"If we went on our iPad, you might be like 'oh, my diary is on here'.

"It was too much work…..to fill out a box…..one page a day"

"My mind is already tired from working"

"So much time"

"Create an app, have an alert"

"Then we won't forget to bring it in, and show you"

(Email) "Yeah"…."just an app alert"

"I can't receive emails"….."I click on them and go off"

Teachers

"Feedback" – "definitely"…."they forget"

5. Purpose

Pupils

(Doing it at school) "That would be scary as you would feel you had to do it"

"If I had time set to sit down and do it (more likely to do it). I kind of feel if I need to be told to do it, cos if I am left to do it, I will get really bored and wouldn't do it".

"But if we did it in a lesson, I may finish first and think I haven't written enough and start rambling".

"Somewhere comfy" (like a separate room).

"I never had time when I thought 'oh, it's time to do write my diary'……"I just did it in spare time".

"I would be satisfied with a 'well-done'"

"I like the sound of a challenge day"

"An event or challenge that is to do with the diary…I know it has meaning to you but to us it is just a diary"

"Right now, it was just a two-week thing"

"Challenge day- could be 'enjoy yourself' as much as possible and the write about it. Whoever writes the nest gets a prize".

(Event day) "Teamwork"….."There is not many subjects that you have to work as a team"

(Sessions) "If you are struggling with it, you have got help"

"Yeah, that would motivate you" "if you felt that you are going there and won't have written anything, then it may motivate you"

"If you keep getting reminded of it, and someone is there to look through what you are doing, and see your progress"

"It would make you feel I am not doing this for nothing, they are acknowledging I am actually doing work".

"More appealing"

"When it relates to school, I think of homework"

"If it was less school related, more people would do it"

(Sessions) "Yeah"…. "Then you have fun, write it in your diary"

Teachers

"There interest seemed to wane" ….."They were good at the start and then …. (Decrease)"

"There are the kids that would fill it in, in the most cursory way, or not fill it in at all"

(Did they see purpose?) "No."

"Unless you start something like that at the start of a year, and you can give it a reason why they are doing it"

"I think new things, they have to really know the point and the reason why".

"It is not enough to say to a pupil, this is good for your personal development"

(To pupils) "It is about doing as little work as I can"

"it is no different to a piece of homework"……"if we can't get them to do their homework, I don't think you stand a chance of getting them to do something, they don't think is linked to something else"

"To get them to do it at home, you will get some that do it well, and those that we struggle with, you will struggle with"

"If you make it voluntary, you will need a good selling point, otherwise even the good kids will be lost. I don't think anyone will optionally opt for more work."

"New merit system" – "incentive"

"Feedback" – "definitely"…."they forget"

"I think it needs to be voluntary, because if you force them to do it, they are not going to do anything".

"Open to all but optional" "targeted" and "optional"

"As long as they see the benefit, and they understand the benefit – they will take it up"

(Building it into a module) "Just making it not optional, part of a lesson, asking them to do more lesson work".

"Once they have volunteered, then you make them feel like a select group. A privileged group, we have separate sessions, we get something to eat and go through how everything is going. They like that sort of stuff." (Offer a trip)

"They like belonging to something"

"If you force them or open it up to everyone then it loses its uniqueness"

(Are lower pupils less likely?) – "not if they just have to show up"

"If they want to go, they take themselves, as they know what they have got to do"..... "Clear instructions".

-"I don't think it will work in a lesson"…. "Struggle to do that in a lesson"

6. Promote/ usefulness

<u>Pupils</u>

"I saw the point and thought it was useful. I saw the good aspects"

"I also reflect more on the day, than if we weren't doing it"

"When I did the diary, I reflect for 5 minutes then stop"

"I think I reflect anyway without the diary"

"If someone asks you after you just say 'fine', whereas the diaries actually help you say something"

"With writing a diary, you look more over the day"

"Remember the good day"… "Look back on our lives"

<u>Teachers</u>

"Give them a nudge now and then"

"I left them to it really"

"I don't know (about other teachers)"

 "The mature ones……conscientious students, it may make them think".

(Promote) "Could do. If they were all doing it, but when it is the selected few, it makes it quite hard".

"Across the board"

"If it was a study skills module, then it would be a whole class"

"Time set aside at the end"

(Targeted) "In don't think it is the band (ability), it is the kid"

"There is a benefit"

"I imagine it being something someone (a pupil) doing, and someone (another pupil) looking over their shoulder and thinking 'I want to do that'"

"I don't think it is something that should be shared with others that aren't involved".