A new measurement for secondary school teachers' productivity. An exploration of relationships between perceived productivity and workplace wellbeing

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A new measurement for secondary school teachers' productivity. An exploration of relationships between perceived productivity and workplace wellbeing

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Dedication

I dedicate this thesis to my late Grandad Mr Bob Jones. He never got to see me start or finish this project, but I know he would have made sure I got through it. His unconditional love, support and pearls of advice have allowed me to become who I am today.

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Abbreviations and acronyms

Acas	The Advisory, Conciliation and Arbitration Service
BTEC	Business and Technology Education Council
CAQDAS	Computer Assisted Qualitative Data Analysis System
CFA	Confirmatory Factor Analysis
CIPD	Chartered Institute of Personnel and Development
CPD	Continuing Professional Development
DfE	Department for Education
EBacc	English Baccalaureate
ECT	Early career teacher
EFA	Exploratory Factor Analysis
GCSE	General Certificate of Education
INSET	In service education and training
ISI	Independent Schools Inspectorate
LEA	Local Education Authority
MARRA	Monitoring, assessment, recording, reporting and accountability
NASUWT	National Association of Schoolmasters Union of Women Teachers
NAHT	National Associate of Headteachers
NEU	National Education Union
NPQH	National Professional Qualification for Headship
NQT	Newly Qualified Teacher
OECD	Organisation for Economic Co-operation and Development
Ofsted	The Office for Standards in Education
ONS	Office for National Statistics

PHE   Public Health England

PISA   Programme International Student Assessment

QTS   Qualified Teacher Status

SLT   Senior Leadership Team

TPAT   Teacher Productivity Assessment Tool

TSI   Teacher Stress Inventory

UNESCO   The United Nations Educational, Scientific and Cultural Organization

Abstract

The study examines, via a mixed methods approach, the concept of 'productivity' as perceived by secondary school teachers in England. Employing a phenomenological orientation, it establishes a new definition for teacher productivity, one that incorporates teachers' lived practice-based experience. Prosecution of the study has included the development of a Teacher Productivity Assessment Tool , a novel instrument (designed via Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)) that identifies tasks and responsibilities that teachers perceive either contribute to, or detract from, their productivity.

A further contribution, developed from multiple regression analysis of a TPAT and Teacher Stress Inventory (TSI), reveals for the first-time relationships that exist between completion of specific tasks, and reported feelings of productivity and stress. Poor psychological and physical wellbeing in the workplace is known to affect productivity, and deficiencies in wellbeing are reported within the teaching profession. Large numbers of teachers, and with an upwards trend, report feelings of stress alongside experiences of burnout and anxiety. Cited reasons for poor wellbeing include workload pressures, diminished work/life balance, reduced autonomy, and increased imposition of accountability measures (some of which are perceived to be unfair and flawed). Aforementioned pressures have also been cited as contributors to high levels of teacher attrition.

The findings of the study contribute to a novel, more nuanced understanding of teacher productivity and provide a new, practice-informed definition for secondary teacher

productivity, with empirical indicators that facilitate accurate measurement of the latter. The study finds that 80% of teachers surveyed report experiences of stress. As time is diverted from student-centred tasks, self-perceived productivity is reduced, and feelings of stress are increased. This is especially true where performance management related tasks accrete time available for more productive student and learning-focused ones. The study concludes by proposing interventions (founded in part on the application of TPAT in schools) that target (a) re-design or removal of low value, stress-inducing work, (b) enhancement of overall teacher wellbeing, and ultimately (c) improvements in both teacher productivity and retention.

1.0   Introduction

1.01 Overview

This research explores what productivity looks and feels like to secondary school teachers in England their perceptions of productivity. The research is designed through the paradigm of pragmatism and is mixed methods and transdisciplinary. By employing exploratory and confirmatory factor analysis This research has developed a tool that teachers, and school leaders, can implement to identify the frequency with which certain tasks are being completed by teachers and how this impacts on their feelings of productivity. For example, if a teacher is undertaking 'classroom observations' very often, but these observations are not contributing to their self-perceived productivity, classroom observations could be being designed and/or performed in such a way that is not of maximum value to the teacher. The tool developed, the Teacher Productivity Assessment Tool, has also allowed for relationships to be identified between productivity in terms of task completion, feelings of productivity and stress. This study was not only able to determine the current self-reported stress levels of a sample of the teaching population in England but, with the novel TPAT was able to show that certain sources of stress, and stress manifestations (as measured by the Teacher Stress Inventory) can be exaggerated or negated by specific tasks they are currently completing, or, by how productive completing these tasks makes them feel. These relationships are not found in current literature outside of anecdotal evidence that links certain areas of a teachers everyday working life and stress, and therefore the findings of this thesis research, and the TPAT, provide a wealth of new insight into understanding the grass roots causes of teacher stress, and therefore negative impacts on workplace wellbeing which in turn impact upon productivity.

To inform the new TPAT, a new definition for teacher productivity was developed as part of stage one of this research. Following a qualitative phenomenological methodology, thematic analysis uncovered what productivity looked and felt like to the recruited sample of teachers. Teachers were able to provide accounts of where they were 'doing' tasks or fulfilling responsibilities in their everyday working life that contributed to their productivity, and tasks and responsibilities that they may not be doing as much, or more often, that they felt were unproductive. Pre-existing definitions were extended to reflect the response from participants in this study to include the wider role that they play in their students' lives (e.g. pastoral).

Background of the study

The importance of psychological wellbeing in the workplace, and the impact this has on an employee is well documented (Fisher, 2014; Hagelstam, 2017; Krekel et al., 2019). Recently the Taylor Report (2017) highlighted that 'good' work should include a focus on health, work-life balance and feelings of value. Previous research into the wellbeing of teachers throughout the United Kingdom is available and does not provide a positive body of evidence. For example, the Teacher Wellbeing Index (2023) reported that the education workforce in England has a wellbeing score of 43.65 versus 51.40 for the general population, in England, making them high risk for psychological distress and increasing their risk of depression. This was also the lowest score recorded in the five years that the Teacher Wellbeing Index has been reporting. Levels of teacher retention are decreasing for which several reasons have been provided and evidence has linked with burnout, workload, stress and poor management (Acton and Glasgow, 2015; DfE, 2002; Dunlop and Macdonald, 2004; Education Support, 2019; Konu et al., 2010; YouGov, 2023). This thesis explores what underlies the experiences of burnout and workload reported by teachers. The reasons for the high workload, what this work is, and why teachers feel they need to

perform it are hoped to be ascertained. Another facet of this exploratory phase is determining if any or all of this week is linked to performance measures teachers are subject to, or, if they complete these tasks due to their self-perceptions of how their performance and productivity will be appraised. The output of a teacher (work) one would assume would be to contribute towards a particular outcome(s). Therefore, is the concept of teacher productivity, the measures taken to assess it and the actions taken by the teacher to be 'productive' a driving force behind the factors that are detracting from 'good' work such as high workload, high stress and increased burnout?

A modern working definition for teacher productivity, outside that of an economic theoretical framework, that has developed to try and reflect the many aspects of their everyday job role, has so far been found to absent from recent literature. Most studies into measures of teacher productivity use multiple inputs and outputs that place student attainment at the heart of the measure and do not account for many background variables that affect student outcomes (Thum, 2002; Kupermintz, 2003). Only economic or student attainment-based measures are readily available e.g. for the UK Government, teacher productivity is measured using the salary earned plus hours worked as the inputs, with level 2 qualifications achieved by students as the output variables. Much research discusses the drawbacks of using test scores as a measure of teacher productivity (Schalock et al., 1993; Koretz, 2002; Goldhader et al., 1999). Governmental measures use 'directed hours' as an input variable for their productivity measure but actual hours worked by teachers, versus the 'directed hours' the government uses in its calculations, are much higher and well documented (Gager and Percival, 2022; Sellen, 2016; Education Support, 2023; Allen et al., 2019).

This research sought to explore, by working with teachers, what the productive teacher looks like within their everyday job role, to provide a definition, and subsequently design a tool which could measure the frequency that teachers complete certain tasks and fulfil responsibilities, but importantly, how productive this completion made them feel. By including the Teacher Stress Inventory with the new TPAT, for the first time in documented literature, it was possible to uncover relationships between what teachers are doing in their everyday working lives that contribute to their perception of productivity and the way this impacts on the stress of the teacher. This combination of tools was also able to explore if the feelings of productivity associated with certain tasks led to greater or lesser experiences of stress. To explore the notion of 'good work' in teaching, we need to understand what contributes to it and if these contributions are of any importance in terms of work-related stress. Stress, which is representative or poor workplace wellbeing, is known to increase attrition, reduce student outcomes, overall education experience of students and decrease the quality of student-teacher relationships (Bajorek et al., 2014; McCallum and Price, 2010; Spilt et al., 2011; Turner and Thielking, 2019; Virtanen et al., 2019). A decrease in student outcomes, or the grades they achieve at level 2, would mean a decrease in the productivity that the UK Government report, so by identifying triggers of stress within the everyday working lives of teachers, removing these triggers to putting mediating interventions into place, a cumulative effect of increasing productivity should arguably occur. It is also important as if there are areas of a teachers everyday working life that are perceived by them to not contribute to their productivity, or are seen as 'low value', can these sources be removed? Reducing workload, the most cited reason for teachers the leaving the profession, would reduce stress and burnout and therefore also impact productivity. Overall, being able to understand what is happening during the school day and beyond, how that is making teachers feel, and how it is or is not adding to their stress

can be of immeasurable importance if looking to tackle the retention crisis and improve the poor wellbeing score of the education workforce.

10.2 Problem Statement

Teacher productivity is currently measured against student attainment. Not only has this system of using test scores been documented as flawed, but it also impacts on the wellbeing of teachers. Many more factors that contribute to teacher productivity (as defined by Schalock, 1993) seem to be ignored in the assessments that schools make. Just like with Teachers Standards, the performance related pay guidance published by the government in 2013 only mentions one measure related to student progress (DfE, 2013), but schools are still imposing targets against this measure and assessing teacher productivity (or effectiveness) purely against this without any acknowledgement of their wider role capabilities. A survey conducted by the National Education Union (NEU) in 2018 found that 32% of respondents (total respondents = ~34,000) who were turned down for pay progression were rejected on the grounds of insufficient pupil progress (NEU, 2019). A further 17% of those rejected for pay progression were told it was just to budgetary constraints (NEU, 2019). These findings clearly do not support that the Government guidance, of teachers not being rejected on budget grounds or on grounds of just pupil progress (DfE, 2013), is being followed and highlight that this system of accountability is not working and is in fact having a detrimental effect to the wellbeing of teachers and teacher retention (Worth and Van de Brande, 2019; Perryman and Calvert, 2020).

The evidence shows that the current system is adding to an already grave shortage of teachers (Sibieta, 2020; Support, 2023; Perryman and Calvert, 2020). Each stage of this thesis has highlighted that teachers have negative views on performance management

practices, deem them be unproductive and that engaging in current practices causes increased manifestations of stress – this was found during the focus groups and interviews as well as during the analysis of TPAT and Teacher Stress Inventory. The findings of this study support that new procedures should be brought into place to provide a more holistic method of assessing teacher productivity, ones that do not add to workload but recognise what the teacher does in their everyday job role that contributes to the learning of their students and the way in which they enrich their lives. To determine these contributing factors, experts should be consulted, the experts being those in the role, teachers themselves. From an extensive search of current and 20ᵗʰ century literature it has not been possible to find evidence of where teachers have been asked what they consider a productive teacher to consist of, the actions and behaviours that a teacher would undertake to not only ensure their students learn the content required by the state, but have enriched lives (as described by UNESCO, 2000). With the increased judgement of teachers affecting wellbeing, can consultation with teachers allow for a new understanding of their role to equip schools with new tools and/or resources to aid a move away from using just student scores? Can a more balanced approach to performance management be created which positively impacts on wellbeing? The conclusions drawn from this study answer these questions with a simple yes.

1.03 Teacher productivity, workplace wellbeing and stress: the concepts

The Elemtary Education Act of 1870 saw the state formalise its control and oversight of the state education system, at this time just to include the elementary phase (modern day primary) (McCulloch and Arthur Obe, 2020).

To understand how the concept of productivity in education has evolved to its present position, it is important to review the historical context of state funded education in the United Kingdom. There have been many changes over the past 70 years fuelled by massive social change and the national and global political climate. Education has transformed over the past 200 years from being something that only those with the financial means could access, to a fundamental right of children, and now forms how an electorate can judge the successes of their government. These changes will be discussed.

Post war Britain saw a shift towards narrowing the gap of access to a quality education between the public and private sectors (Aldrich, 2004). Education Historian, Harold Dent, commented in 1971 that there had been enormous advances in the state-maintained education system but highlighted that the legislation had not produced the litany of 'good' state schools around the country it had intended to (Dent, 1971). Since this statement by Dent, the state has increased its involvement in the management of the state education sector to now include secondary and Higher Education phases as well as teacher training and educational research (McCulloch, 2004; Whitty et al., 1998; Wilkins et al., 2021).

With education a quantifiable resource, "successful" education could now be demonstrated through the use of standardised means (de Saxe et al., 2020) and with this came the introduction of the new General Certificate of Education (GCSE) and national school league table system. Education was now marketised and as such a major overhaul of the management of the public sector followed. This new system, where product and performance were placed at the core (Moore and Clarke, 2016) was conceptualised as "New Public Management" (Hood, 1995).

This new context for education found itself in line with the ideologies associated with neoliberalism (Acton and Glasgow, 2015; Angus, 2017; Arnott and Menter, 2007; Attick, 2017; d'Agnese, 2019; de Saxe et al., 2020; Grant, 2012; Keddie et al., 2011) and was introduced against the backdrop of being able to address and remove the historic underachievement of those from a low socioeconomic background (Harvey, 2007) by increasing the opportunity to acquire a good education (Hill and Kumar, 2012). The success of this vision will be discussed shortly. In essence neoliberalism in education refers to the introduction of a market-based approach to education. It is hinged on the belief that by creating competition between schools that standards will increase (Davies and Bansel, 2007; Hastings, 2019). The success of the market drivers is then measured using performative testing and evaluations with inefficiencies identified and removed (Lakes and Carter, 2011; Ambrosio, 2013). Overall, it is the ability to produce greater student outcomes, for less financial input – the economic framework for productivity.

Between 1979 and 1997, advanced by the 'Educational Reform Act' of 1988, a new 'consumerist' market was established which saw parents look at each school as a commodity which they could acquire or reject (Hill and Kumar, 2012).

The state education sector, now a market force, was open to the auditing processes that were standard within the private sector, allowing for policy makers to revise the allocation of resources and the way in which the service, education, would be delivered (Osborne, 2006). This led to several phases of reforms under successive governments.

Several auditing processes were now in place. One quantifiable measure a government could use was that of student grades versus teacher salaries and hours worked. However,

outside of government productivity reporting, no definition that was found or descriptions surrounding teacher or educational productivity that were sourced specifically included student attainment as a, or the sole, measure of teacher productivity, and a definition that refers to standardised test scores could also not be found. Regardless, many performance management procedures now in place in schools in the UK do use student grades as a performance indicator, this is explicitly demonstrated by the introduction of pay progression structures linked to student attainment (DfE, 2013; Forrester, 2011; Hill and Jones, 2020; Marsden, 2010; NEU, 2018; NEU, 2019).

Whilst conducting the review of literature to inform this thesis no relationship between positive impacts on students attainment since pay linked progression was introduced (Hill and Jones, 2020; NEU, 2018; Marsden, 2010) could be found and in fact the overall trend for student achievement in the UK has been that of immobility or deterioration (Rogers and Spours, 2020; Acton and Glasgow, 2015). The aims of thesis will address a fundamental gap in knowledge- the concept of what makes teachers productive in their job role, as perceived by them. This study directly uses the lived experiences of teachers and places their accounts at the heart of developing a new concept for teacher productivity.

The overall impact of teachers being 'measured' against student attainment is that school teachers in the UK are now reporting higher levels of stress, anxiety, frustration and burnout since 2001 (Perryman and Calvert, 2020; Toropova et al., 2020; Skinner et al., 2019; Worth et al., 2017; Hudson and Hugh-Jones, 2016; Perryman et al., 2011; Klassen, 2010; Dunlop and Macdonald, 2004; DfE, 2002; Drake and Hebert, 2002; Kyriacou, 2001; Goldhader et al., 1999; Cooper and Kelly, 1993; Travers and Cooper, 1993). This thesis seeks to give schools and teachers a new way to assess how productive they feel in their

role, uncover what they are doing frequently and infrequently that contributes to their perception of productivity and identify ways to improve their wellbeing at work by making recommendations for changes in their work led by the empirical findings of the TPAT and Teacher Stress Inventory. As will be discussed in later chapters, one of the main results of this study is the dissatisfaction that teachers feel regarding the way that they are managed, the time that it is taking them to comply with accountability measures and the many ways in which this is increasing their self-reported stress.

1.04 Research Aims

From the literature a need has been identified to capture a more holistic view for what the productive teacher is and what the productive teacher does. An understanding of where a teachers' everyday working life is detracting from or contributing to their perceived productivity, and how this is increasing or decreasing their self-reported stress is not present in current research. With no options available that allow for determination or examination of what is deemed to be productive to secondary teachers in England, and subsequently specific areas of their work that then impact upon their work-related stress and productivity, a new tool must be developed that can provide insight. The aims of this thesis are not only to seek what teacher productivity is, as perceived by them, but to also address why knowing this is of value to the academic community and for those shaping the policies, practices, and measures of productivity of the education sector. Therefore, this thesis is guided and motivated by the following research objectives:

- To provide a working definition for productivity of secondary teachers in England
- To investigate and produce empirical indicators for the everyday job role of a secondary teacher employed in England that contribute to their productivity through direct consultation with practising teachers
- To develop a tool that measures the productivity of secondary teachers in England
- To explore the relationship between workplace wellbeing and reported productivity among secondary teachers working in England by using the new TPAT and Teacher Stress Inventory

1.05 Research Questions

To meet the objectives of this study the following questions guide and inform the research

and its design. These are:

1. What do England based secondary teachers consider as 'productivity' in terms of their everyday job role?
2. Can productivity be broken down into defined tasks and responsibilities that teachers undertake?
3. What do secondary teachers in England consider affecting their wellbeing in the workplace?
4. What are the reported levels of stress for secondary teachers based in England?
5. Is there a relationship between self-reported levels of stress, and the empirical indicators of productivity in the TPAT?

1.06 Contribution

What is teacher productivity?

This work extends the definition of teaching productivity provided by Schalock (1993). This

definition stated that it was the 'contribution' that a teacher made to the overall learning

gains of a student and moved away from the 'absolute'. However, with the variables they

listed as contributing to teaching effectiveness and productivity[1], no tasks, duties or

responsibilities were provided. Also, teachers were not consulted in the formation of this

definition. This thesis will build on the Schalock definition by exploring what teacher

productivity means to teachers, and how that is manifested in their everyday working lives

as tasks, duties and responsibilities.

Why do we need to know what teacher productivity is?

Schalock (1993) posed the question "*Do we/they know what makes a teacher more*

productive?" (pp.190). From a comprehensive review of literature, the answer to this

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[1] Teacher knowledge, skill, characteristics and professionalism

question posed 30 years ago is still 'no'. There are studies which speak in general as to how decreasing workload would help teachers, or how better wellbeing can improve productivity. But none of the literature gives clear and explicit explanations as to what is being done on a day-to-day basis by teachers that is not productive. There is no literature that clearly describes what teachers are doing in terms of tasks, duties or responsibilities that represent them being productive. General concepts are described, however, statements or explicit examples of what a teacher is actually doing in relation to these two things are not provided. Ultimately, not knowing what affects how productive teachers are, means that we cannot know how to improve how productive a teacher is. The development of a new definition and empirical indicators allows the construction of the TPAT. This is the first of its kind that explicitly assesses how often teachers are performing certain areas of their job and how productive these areas are, as perceived by them. The tool could allow a teacher, Head of Department or Headteacher to identify areas of teacher practice that are not contributing to productivity. These results may prove to be very useful to a school as they can look at how to lower the incidence of teachers having to perform low productivity tasks or support the teacher to find value in what they do improving their overall wellbeing, impacting on their overall productivity.

Further value of the Teacher Productivity Assessment Tool

The TPAT will also provide the first opportunity to identify specific tasks that are impacting teacher stress by exploring relationships between the TPAT items and items in the Teacher Stress Inventory developed by Michael J. Fimian in the 1980s. For example, it is written in literature that workload is the most cited reason for teachers leaving the profession and workload can lead to burnout and stress has a relationship with burnout. With TPAT being used in conjunction with the Teacher Stress Inventory we will be able to pinpoint exactly

what areas of a teacher's working life are causing them stress which will allow for workload reviews or interventions need to be put in place in very specific contexts.

This study is also novel in its methodology. The combining of stages from previous studies by Boyatz and Braun and Clark to provide a framework for the thematic analysis was custom for this research but could be applied to future studies that adopt this method. The simple addition of including Boyatz's first stage allows a greater level of detail when looking to design other research.

Using phenomenology to gain data from teachers which can be analysed and used to construct empirical indicators is not unique but is not common within fields that use education as their setting. However, the method of going to teachers to gather their truth for the topic of productivity is.

1.07 Thesis Structure

The project follows a mixed method, exploratory sequential research design guided by a pragmatic philosophy that encompasses phenomenological and post-positivist associated research methods. There are three distinct stages to the research, each led by the aims and questions.

The findings of this research include a new definition for the productivity of teachers, 16 empirical indicators for the concept of teacher productivity and explicit relationships between teacher productivity indicators and sources of stress and stress manifestations.

Stage one of the thesis provides the basis for all subsequent quantitative analysis. Stage one was led by the objective of producing a new definition for the productivity of teachers in England, and of producing a new tool that could be used in the measurement of it. This stage adopts a phenomenological approach using the lived experiences of currently employed secondary school teachers in England to gather qualitative data on what productivity looks and feels like to them in their everyday job role and what impacts their workplace wellbeing. Following a phenomenological approach addresses a gap in literature, it allows for teachers themselves to be consulted and their lived professional experiences to be recognised and the production of a new definition for productivity based in their truth. Focus groups and interviews with nine teachers from across England were used as the method of data collection. Thematic analysis provided the means of exploring their accounts to ultimately produce a new definition and 52 items that represented their tasks and responsibilities in their everyday working lives. Thematic analysis also generated themes that provided insight into what is affecting their wellbeing in their professional lives such as their physical environment and work-life balance. The themes provided greater

understanding to the stress scores that were later reported and supported issues around wellbeing that have been reported in literature. Using the findings from thematic analysis and considering the work of Schalock et al. and UNESCO, a new definition for teacher productivity was developed; *'things you do that contribute to the learning and/or enrich the lives of your students'*.

Stage two of this thesis focuses on the process of building the new TPAT, the main aim of this research. It also reports on the findings from the unvalidated and validated versions of the TPAT. Stage two provides justification for the pragmatic rationale that underpinned the methodology of this thesis – mixed methods and incorporation of both qualitative and quantitative methodological approaches were needed to address the aims and answer the questions of this research. For the first time empirical indicators for the concept of teacher productivity were produced detailing the 'doing' and 'feeling' aspects that teachers believed their productivity to be reflective of. The unvalidated TPAT, which contained all 52 items produced from stage one was distributed nationwide. Over 300 responses, of which 134 were useable were obtained and were used to report findings from the unvalidated TPAT on what teachers were doing and how productive what they were doing was perceived to be. These findings provided the first insights into the difference between areas of a teacher's working life that focus on student interaction and teaching, versus those that are distant from students such as data drives and administrative work and how productive the teachers themselves perceive them to be. Following analysis of the unvalidated 52-item TPAT exploratory and confirmatory factor analysis was employed for item reduction and to test the validity and reliability of the tool. Due to data having to be complete with no absent values, the sample size was reduced to 118 responses. Following exploratory and confirmatory factor analysis, six factors were identified and a total of 16

empirical indicators now forming the TPAT. This new tool, the first of its kind, consults teachers not only on how often they complete certain tasks but also how productive they feel when they do. Throughout all stages of the exploratory and confirmatory factor analysis, it was apparent that what teachers had expressed regarding performance management and accountability during stage was also a strong feature with the Teacher Productivity Assessment with eight out of 16 indicators relating to performance management and these indicators loading onto the same factor throughout each stage of the exploratory factor analysis.

Stage three of the thesis explores the findings from the Teacher Stress Inventory and importantly addresses a fundamental aim of this research which is to produce a tool that allows for productivity to be explored in relation to its impact on teacher workplace wellbeing – which in turn impacts on productivity. Multiple regression analysis was used to provide findings. Over 80% of teachers who completed the TPAT and Teacher Stress Inventory are found to be experiencing work-related stress. The frequency of performance management tasks was found to always increase sources and manifestations of stress. Clear recommendations are provided in stage three to address areas of a teachers everyday working life that can be modified to increase their perceived feelings of productivity, reduce their self-reported stress, and improve wellbeing.

1.08 Reflexivity

Reflexivity in research involves the researcher thinking deeply and exploring how their own experiences, values and even politics can affect the research process and interpretation of findings (Lazard and McAvoy, 2020). It is also important for researcher to consider their positionality – what position are they adopting in relation to their participants and what

characteristics are shaping how they interact, access and question the participants (Patton, 2015; Yip, 2023).

I was a secondary school teacher in England who taught physics for GCSE science and before resigning held a Head of Department position. I taught between the years of 2009 and 2018 – within which major education reforms were brought in such as EBaccalaureate and changes to the curriculum - in science these reforms came in 2015. It was following these reforms that I decided to leave the teaching profession. During my time as a teacher, I faced some challenges such as high workload, a target driven culture and burnout. After reading the Taylor Report, my own lived experiences in terms of workplace wellbeing led me to explore what literature there was surrounding the work of teachers and their wellbeing. It is my own lived experiences that allowed me to be able to listen to the teachers who took part in this study and understand their lived experiences. My understanding of their accounts naturally led me to follow a phenomenological approach – placing the lived truth of my participants at the heart of the research. My lived experiences also required that I did not project my own feelings and thoughts about teacher wellbeing, either from my own experiences or from literature, onto my participants or guide them to disclosing truths that were not as relevant to them due to what I had experienced.

It is not only my previous career experience that needs to be disclosed. Creswell (2013) states that '*cultural, social, gender, class, and personal politics'* (pg.215) should also be discussed. I am from a working-class background and identify as female. I am also a care leaver and therefore school was one stable component of my life growing up. This led me to becoming a teacher and to have great affection for the profession and the impact that teachers' can have on their students' lives, as I experienced it first-hand. However, leaving the profession in 2018 does influence my personal politics – I did not see merit in the

reforms and therefore was not aligned with the Conservative Government. This was important to reflect on when reviewing literature and documenting policy shifts over the years. For example, whilst the Educational Reform Act of 1988 brought in huge changes widely believed to have increased accountability pressures, Every Child Matters brought in by the Labour Government of 1997 is also linked with these increases. This is just one example of how I acknowledged my own biases but did not limit my literature to support these.

Further detail regarding my positionality is found in the methodology section of the thesis and has a focus on four main areas:

- Personal
- Interpersonal
- Methodological
- Contextual

2.0 Literature Review

2.01 Introduction

To answer the aims of this study, current theoretical understandings on the concept of teacher productivity, productivity as a whole and the relationship between productivity and workplace wellbeing will be outlined. What led to current measures of teacher productivity being developed and used will be explained and expanding on this, what impact the literature currently states these measures have on the wellbeing of teachers is discussed. It is important to understand if there has been an increase in teacher productivity (by current accepted measures) even though there are increased reports of poor teacher wellbeing.

This literature review will guide the reader through the history of current productivity measures, definitions of productivity and how these are impacting on teacher wellbeing.

What is productivity?

To understand how the current model for measuring teacher productivity has developed, it is important to understand productivity and its meaning in economics, industry and enterprise.

Through an economics lens, productivity can be defined as the ratio between the volume of output units to the volume of inputs (Krugman, 1994). It is an indicator of how efficiently inputs (such as labour) are being applied to achieve the required output. Productivity measures are used internationally and form the statistical basis of assessing the performance of a country and then applied to make judgements on that country's competitiveness and economic growth. On a national level, productivity measures can be

used to forecast economic growth and determine if government policies and measures that are currently in place are having a positive impact on the economy. Relating to industry and public sector services, Burkhead and Hennigan (1978) define the following areas as contributors to and aspects of productivity; efficiency, effectiveness, cost savings, program evaluation, work measurement, employee incentives, management effectiveness, input-output analysis, work standards, and the political/social environment.

This study explores productivity in the education sector, in particular teacher productivity and the measures that it consists of, according to teachers. This review will include current measures and definitions that surround that of teacher productivity, the history that led to the development of them, debated issues surrounding the modern productivity measures and the impact of these measures on the wellbeing of teachers. Due to the interchanging of the term 'effectiveness', 'performance' and 'productivity' within published literature, literature that contains either and/or all these terms will be included (Kenny 2016).

2.02 UK Government measures of productivity in education and in teaching

Figure 1.0. Overview of production process *(ONS, 2017. Pp.3.)*
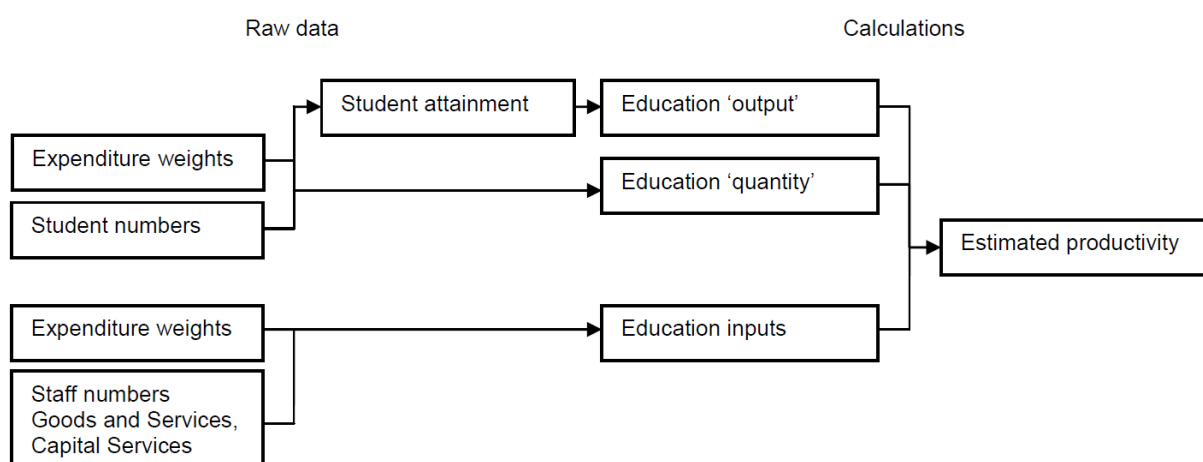
The figure above outlines how the UK Government report on educational productivity.

In terms of outputs, the UK government reports educational productivity for the following areas (ONS, 2017):

- Pre-schools
- Publicly funded, private, voluntary, or independent pre-schools
- Primary schools
- Secondary schools
- Specials schools
- Further education
- Initial Teacher Training
- Higher Education training of Healthcare Professionals (no information on what constitutes a Healthcare Professional could be found)

Education quantity is based on the number of students in each of those areas divided by the total expenditure to give a 'per student' cost. Student attainment is calculated using the average point scores from level 2 (GCSE, BTEC Level 2 etc.) courses and the number of Higher Education students achieving Qualified Teacher Status (QTS). Quality adjustments are made; for example, only data from up to 2008 is used for average point scores due to the rise of attainment in vocational qualifications at level 2. Data from Northern Ireland is adjusted to use the same data from England whilst the Office for National Statistics find an alternative measure (last updated 2015). Initial Teacher Training data for Wales and Scotland is adjusted by using the same data from England as it is stated in the published methodology section for productivity assessments by ONS that it is 'assumed' that there will be the same trends as in England (ONS, 2017).

The method that the UK government uses to calculate and report on education puts each teacher and student as an economic factor. There has been a transformation of the education system, not only in the UK but in other developed countries over the decades, which has led to publicly funded schools reporting on, and working to quantifiable outputs (Attick, 2017; Bartlett, 2000; Blunkett, 1998; Forrester, 2011). When broken down into what constitutes each of the quantifiable outputs and inputs for the UK in terms of

educational productivity, the gaps in data and issues with generalisability become apparent. But this is not a new problem, it is known that the ability to calculate productivity for a public sector is not uncomplicated, precise measures of school productivity (as stated by Reeder, 2011, pp.8) *"have proven to be hard to develop to the robustness needed by the National Accounts"*. It can be posited that it is because of this difficulty (in designing and implementing measures) that the current system omits so much data from each sector of education and relies on data from the 2 previous decades. It can also be suggested that because of the accessibility to level 2 and QTS data only this data is included as part of student attainment.

The current economic framework used to measure productivity in the education sector provides a national statistic that the government reports on. When looking at the framework it is clear to see that the one output that teachers are directly involved in is that of 'student attainment'. Of course, this does not include the attainment of any students not sitting Level 2 qualifications and therefore if establishing a link between student attainment, teacher productivity and the productivity of the education sector, only teachers who are delivering this level of qualification can logically be included. The outputs used by the UK Government provide the reasoning for the focus of this research, that of only secondary school teachers currently delivering level 2 qualifications in England, mirroring the inputs that UK Government uses in the productivity formula.

The current method for reporting on educational productivity is not without its critics as the output of schools, and teachers, is much less tangible and consists of variables that are interlinked and interdependent (Burkehead and Hennigan, 1978). A good explanation of why typical private sector approaches to public sector productivity estimates do not work

was provided by Berk (2005). He stated that unlike with education, a factory worker will always be provided with the same materials to produce the same output required, therefore the output (quality and quantity) can be attributed solely to the factory worker, this is not the case with education. Education is not a fully developed science, put simply, it is not possible to know each combination of resources needed to produce every possible student outcome and draw accurate conclusions (Schalock et al., 1993).

The arguments discussed above that cast a light upon the accuracy and/or validity of including student attainment as a reporting measure do lead one to further examination of their existence in the process. To understand how the current model was developed, to discuss the impact this has had on teacher productivity, and on teacher wellbeing, we need to explore the politico-social landscape of the UK over the past 50 years and the policy introductions it has fostered.

2.03 The development of productivity and performance measures

The impact of the neoliberal political culture introduced in education has seen three major areas of impact. These being the private management of schools within the state sector, the neo-performative management of the teaching profession and the emergence of the 'failing' school culture. These three impacts are important to inform the subsequent discussion surrounding that of teacher productivity and the impact of these measures on teacher wellbeing.

The Educational Reform Act of 1988 changed the structure of the whole schooling system (Hill and Kumar, 2012). More control, especially financial, was moved away from the locally elected governments that formed the Local Education Authorities (LEAs) to private organisations and that 'open the market'. New schools such as City Technical Colleges and

Grant Maintained Schools were introduced which were now independent of LEAs. The ERA also saw the removal of resource allocation based on positive discrimination. Previously, schools based in areas of low socio-economic status were allocated more funding, now each school would receive the same 'per capita' (per student) funding. This power, of LEAs to request more funding, was slightly restored in 1997 under 'New Labour' until the Conservative Party regained power in the 2010 general election. However, the changes to the structure of schooling were furthered by New Labour when they introduced the 'academy' system. This national rollout saw more outsourcing of education services than ever before, in fact more than Germany, the United States and double the amount of France and Italy in the same time period (Grant, 2012). Today in England 71% of secondary schools are academy converter or academy sponsor led schools with just 10% still being under the direct management of the LEA.

These new variants of school were introduced to offer the consumer more choice, which is what on the surface they did, however, with any not-free market there are casualties which was, and remains to the case, an issue in the education sector (Alexiadou, 2002; Gleeson, 2011). The new choice available to parents based on information from school league tables, now impacted by the current funding structure, gave rise to competition between schools, which was intended to drive up standards (Wilkins et al., 2021). This new market gave some schools a market advantage as they were operating a selective admission policy, allowing them to cherry pick the best performing students from the primary phase which would manifest as better level 2 scores in the secondary phase, boosting the schools position in the league tables. Parents now chose certain schools based on their performance, increasing competition for that school whilst diminishing the reputation and student numbers of others. With funding now 'per capita' this led to a large number of

schools becoming underfunded due to lower student numbers impacting teacher numbers, resources and ultimately the educational performance of students (Whitty et al., 1998). These schools were now presented as 'failing' or 'sink' schools and many were converted to academies under New Labour, which increased under the 2010 Conservative Government (now standing at 71% of secondary schools in England) (Ball, 2009). The public shaming of failing schools under New Labour also resulted in the closure of many schools, dismissal of many 'failing' teachers and saw the new management procedure of 'Super Headteachers' being parachuted in (Hill and Kumar, 2012; Whitty et al., 1998). With these changes and new management structures designed to increases standards and academic gains of students it is quite surprising to learn that data regarding the number and grade of level 2 qualifications from the past three decades is far from conclusive and in some literature demonstrates that students at the secondary phase of education are plateauing and in some cases declining (Rogers and Spours, 2020; Allen-Kinross, 2019; Andrews, 2017; Armitage and Lau, 2018).

2.04 The English Baccalaureate and not closing the gap

Another initiative brought in to try and raise academic standards was the English Baccalaureate (EBacc) which from 2010 has formed a new accountability measure for schools (Brande and Worth, 2018). The EBacc was now included in school league tables and showed the number of students achieving Grade 5 or above (previously a Grade C/B) in English, English Literature, mathematics, two sciences, a humanity subject, and a language. Progress 8 [2]scores, an accompanying measure, now demonstrated the progress across subjects giving each subject a different weighting in scores, leading many schools to

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[2] Progress 8 provides a numerical value for the progress that a pupil makes from their attainment in Year 6 SATs at primary school and their GCSEs in secondary school. E.g. if a student gets a score of 0 they have made average progress, above zero means above average and below zero means below average.

remove the performing art and vocational qualifications previously on offer. With this new inclusion in school league tables, schools were pressurised to move away from vocational qualifications to the more traditional academic GCSE route for all learners (Long, 2017) with some schools reporting to feel the move to the EBacc was compulsory from Ofsted (Allen-Kinross, 2019). The new pathways for students were intended to move to a more rigorous curriculum promoting academic achievement, however although the Attainment 8 scores for students (points for grade level) have increased from an average of 46.4 in 2016 to 48.9 in 2022 (DfE, 2023) the Progress 8 scores have decreased between 2016 and 2022 by -0.03 showing that students are now making less than expected progress[3] (Datalab, 2022).

 The attainment 8 scores have also shown that attainment gaps between advantaged and disadvantaged groups of students have been widening. For example, in 2019 the gap between advantaged and disadvantaged students for all EBacc subjects stood at 1.5 points, this rose to 1.6 in 2022, in other subjects between 2019 and 2022 it rose by 0.2 to 1.5 points (Datalab, 2022).   So, the new accountability measure has not only demonstrated no positive impact upon student attainment but a study conducted by Neumann et al. (2016) found that 75% of 1,800 secondary school teachers surveyed felt that the introduction of the EBacc had narrowed and restricted the curriculum. So, students are now making less progress, learning a narrower and arts restricted curriculum but accountability measures for schools (and therefore teachers) have increased. The stagnation and/or decline in student progress is not limited to the UK, the Programme for International Student Assessment (PISA) also shows a decline in performance of students (Scholes et al., 2017). An important feature of the national picture for attainment is that of the north south divide with two of the three poorest performing LEAs being in the north of England (Knowsley and

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[3] a score of 0 means expected progress

Salford) with the highest performing all found in the south of England (DfE, 2018b). The Progress 8 scores demonstrate the disparities in progress for students across regions of England, in fact the only students making positive progress are those in London (0.23), with the top 3 largest disparities being Yorkshire and Humberside (-0.07), the North West (-0.16) and the North East (-0.27) (Datalab, 2022). Put simply, if a student lives in the Northeast, they are 0.5 value-added points behind their counterparts in London, that represents half a grade in real terms. The lack of student progress and differences in progress and/or attainment for those disadvantaged and living in particular regions of England is thought by many to demonstrate that the arguments of a neoliberal approach actually removing choice and opportunity in education are valid and evident in data (Rogers and Spours, 2020; Machin and Wilson, 2009). The differences in attainment can be further compounded by evidence showing that schools who are reported as low performing, now known to be in lower socio economic areas where potentially students need access to greater life chances, have higher staff turnover and lower rate of applications for open positions (Ingersoll et al., 2016; Borman and Dowling, 2008).

These prior impacts and the current climate surrounding student attainment have led to the final way in which the school reforms have manifested; how schools, and teachers are now managed. The modern market driven approach to managing the state education sector has led to schools implementing policies with accountability and performance of student academic gains at their core (Wilkins et al., 2021; Keddie et al., 2011). This move is not surprising with the amount of data that is reported on for each school which parents use to judge their school choice decision on, which directly impacts the funding of a school. Teachers are now under more surveillance than ever before and their efficacy in their role assessed against an ever-lessening range of indicators (Ball, 2003; Bartlett, 2000; Angus,

2012; Ball, 2009).   Formal inspections and the repeatedly reviewed and shifting professional standards for teachers are the result of the focus on value added models of evaluating teacher effectiveness (Baxter, 2013; Sachs, 2016).   Wilkins et al. (2021) expanded on the way in which the profession is scrutinised explaining that although student outcomes are the most common performance indicators, increasingly a wider range of indicators are used, focusing on 'softer' data corresponding to, for example, attendance, behaviour, learner commitment and fulfilment, transportable skills and employability.

The new regime has also extended to control the pedagogy of practising teachers as is now instrumental in the design of teacher training as well as educational research (Hill and Kumar, 2012). Whilst one can appreciate that a governments spending and policy in regard to a public sector service should be able to be scrutinised, some argue that this now well established culture simply provides measurement tools that allow the macromanagement of schools and the control of the teaching profession (Marginson, 2006) and actually limit the richness of education, removing opportunities (d'Agnese, 2019). One final point on this impact is that today, those entering the profession (and within the past 30 years) will have received their education under this neoliberal system, they are now what is phrased as the 'neo-performative' generation (Wilkins et al., 2021). The practices of surveillance and performance management are now embedded and therefore school leaders and subsequently school policy are more likely to be shaped using their own experiences; that of educational success being a measurable output of which student attainment is at its centre (Wilkins et al., 2021; Perryman and Calvert, 2020; Angus, 2012; Angus, 2017). This also means that competition and exterior pressures driving the education of young people in the UK rather than the time-honoured values that the profession was built around

(Toropova et al., 2020) as student attainment and/or progress is the cornerstone of how teachers are judged (Forrester, 2011; Bartlett, 2000; Blunkett, 1998).

2.05 A timeline of education policy

The table below summarises the key educational policies of the past 70 years that have helped shaped the narrative above.

Table 0.1 Timeline of education policy

Year	Reform/Event	Description
1965	Education Act 1965	Was designed to give LEAs more control to support SEND students and remove barriers e.g. 11+ - to give all children equity Designed for equity
1988	Educational Reform Act 1988	Designed to standardise the curriculum that all children received. Introduced a 'market' and schools could now opt out of LEA control. Introduction of Ofsted. Performance related pay introduced. National testing and performance tables. Increased accountability.
1997 - 2007	Labour Government Reforms	One hour every day dedicated to reading and numeracy. Every Child Matters focused on 5 key outcomes being healthy, staying safe, enjoying and achieving, making a positive contribution, and achieving economic well-being. Increased pressure on teachers.
2006	Education and Inspections Act 2006	Strengthened skills of Ofsted. New intervention powers for 'failing' schools 'Pupil Voice' now incorporated Extended services – provisions outside of teaching hours Schools have to have discipline policies Added pressures to schools
2010 - 2015	Coalition Government Reforms	Introduction of Free Schools Greater emphasis on core subjects in secondary More challenging curriculum New EBacc measured English, mathematics, science, a language, and a humanities (excluding RE) Narrowing of curriculum
2014	Children and Families Act 2014	SEND now supported from 16-25 Introduction of EHC plans Integration of education, health and social care services. Help with transition into adulthood

		More comprehensive support now in place but less funding and fewer EHC's being issued
2016	Education for All Act	Academy and Free School Expansion Performance management – strengthened accountability measures Rigorous approach to assessing and improving school performance – Ofsted Introduction of Pupil Premium Failed to address equity
2017	Schools that Work for Everyone Review	Increase capacity for faith-based schools Expand selection education Raise standards Issues raised regarding social mobility and inclusion
2019	Education Inspection Framework (EIF)	Updated Ofsted Focus on curriculum intent, Implementation and impact Teacher training Leadership expectations With no guidelines has caused increased pressure on schools and teachers

2.06 Modern understandings for the productivity of teachers and the limitations of using student scores

As discussed, measures of productivity within education are now built around student attainment and educational achievement. When examining modern definitions of teacher productivity, performance, or efficiency, not all reflect the focus on student attainment.

The UK Government does not provide a specific definition for the 'productivity' of teachers, just education as a whole. When reviewing the literature, the nearest that could be found was the description of a teacher's responsibilities contained within the Teachers Standards, most recently updated, and published in 2011. The Teacher Standards state that a teacher in the UK must:

- *"Set high expectations which inspire, motivate and challenge pupils*
- *Promote good progress and outcomes by pupils*
- *Demonstrate good subject and curriculum knowledge*
- *Plan and teach well-structured lessons*
- *Adapt teaching to respond to the strengths and needs of all pupils*
- *Make accurate and productive use of assessment*
- *Manage behaviour effectively to ensure a good and safe learning environment*
- *Fulfil wider professional responsibilities"*

(DfE, 2011a)

These standards cover a broad range of teacher responsibilities and do not seem to reflect the focus on student attainment that is reported to be the main measure of a teacher's performance. In fact, when looking at the expanded overview of the Teachers Standards just 4 points out of 38 directly link to student attainment these being:

- *"Be accountable for pupils' attainment, progress and outcomes*
- *Know and understand how to assess the relevant subject and curriculum areas, including statutory requirements*
- *Make use of formative and summative assessment to secure pupil progress*
- *Use relevant data to monitor progress and set targets"*

(DfE, 2011b)

Looking at other definitions and descriptions given in literature, a clear theme on student learning and life success emerges. Schalock (1993) defined teacher productivity as 'the contribution' a teacher makes to student outcomes over time. This definition still places student learning at the core, but the language used, that of 'the contribution' moves away from the teacher being the absolute input for a student's attainment. The research by Schalock expanded on this new phrasing to give several different variables that cause an influence on student outcomes with the teacher placed as just one of four categories. Mirroring the focus on student learning is the definition that measuring a teacher's performance is a decision regarding his or her proficiencies to bring out sought after outcomes of student engagement and learning, even among those who may be challenging or apathetic (Tschannen-Moran and Hoy, 2001; Tschannen-Moran et al., 1998). Getange (2016) described productivity as the duties that are performed by a teacher at a particular time during the school period to achieve a desired outcome. This definition shows the transient nature of education and how a teacher must be able to adapt to a constantly changing set of inputs to achieve the desired output. It also places no focus on terms associated with 'learning', it states 'any task' but does not provide a list or description of

tasks that constitute this. This thesis is guided by aims and questions that seek to address exactly what tasks teachers feel contribute to their productivity allowing an expansion of this definition. UNESCO define the role of teaching to '*satisfy basic learning needs and enrich the lives of learners and their overall experience of living*' (UNESCO, 2000, pp.20). Here the wider role of a teacher comes in to play which emphasises the pastoral and holistic nature of teaching.

2.07 The difficulty with definitions of teacher productivity

These differing descriptions of what comprises a productive teacher, with changing foci, are demonstrative of statements by Angus (2017) who explained that most educators accept that the notion of "education" is an intrinsically contestable one and due to this it is difficult to gather a consensus on its precise nature and purpose. However, there are common attributes that are prescribed to teaching as a profession. These include contributing to democracy and social justice; promoting the full development of a young person's imagination and ability to question what surrounds them; preparing the next generation to be active and successful members of their civic society; to increase their potential, no matter where that may lie to assist them in the future so that they might lead happy and gratifying lives.

None of these definitions or descriptions mention student attainment, none refer to standardised test scores, so it appears that student attainment is not at the heart of describing the role of a teacher. However, many performance management procedures now in place in schools in the UK do use student grades as a performance indicator, this is explicitly demonstrated by the introduction of pay progression structures linked to student attainment (DfE, 2013; Forrester, 2011; Hill and Jones, 2020; Marsden, 2010; NEU, 2018;

NEU, 2019). The NEU when surveying 34,000 teachers following the introduction of pay linked progression, found that 34% of respondents who had been turned down the previous academic year were told it was due to lack of student progress and outcomes (NEU, 2019). Other reasons such as lack of school funding were given, even though the government guidance states that the school should not withhold pay progression based upon the schools' financial position or just using student grades. So, although definitions and descriptions do not focus on the grades that students achieve as a way of measuring the productivity of teachers, in schools around England these scores are being used to judge teaching performance and withhold pay increments. This shows the impact that reporting on schools, using student outcomes as the headlines, has caused a culture where teachers are being held to account for the grades their students achieve, regardless of external variables and where wider aspects of the teaching role are ignored. Teachers work with students to make a difference in their lives and allow them to achieve not just in an academic way but also socially and emotionally (Spilt et al., 2011; Bullough Jr and Pinnegar, 2009; Briner and Dewberry, 2007) and should be considered as whole beings rather than a grade in a part of system that disregards any other aspect of their performance (Doecke et al., 2010).

2.08 The potential issues of using student test scores as a measure of teacher productivity

From the literature evidence is provided for the potential pitfalls of using student test scores to deem teacher productivity, in fact, it has been found that pay linked to student outcomes shows no increase on productivity but does increase class sizes, introduce longer working hours for teachers and has been pivotal in the introduction of private management of schools (NEU, 2018; Attick, 2017; PISA, 2012). These 'pay incentives' also fail to consider unobservable variables that impact student attainment (Schalock, 1987; Schalock et al., 1993; Smith and Kovacs, 2011; Travers and Cooper, 1993). Much of the literature reports

no strong relationship between resources employed in the classroom with that of student outcomes (Goldhaber et al., 1999) and since pay linked progression was introduced there has been no explicit evidence of a positive impact on student attainment (Hill and Jones, 2020; NEU, 2018; Marsden, 2010) and the overall trend for student achievement in the UK has been that of immobility or deterioration (Rogers and Spours, 2020; Acton and Glasgow, 2015). The lack of progress in the improvement of student scores, even though they are being used as the basis of teacher performance management procedures to improve standards, does support the previous definitions provided; that a teacher is only a part of a student's learning and that their role is transient, ever changing and focused on the whole child and their life chances, not just their learning. The student themselves also plays an integral role in their own learning and success. Wahlberg et al. (1986) detailed nine variables that could be attributable to student attainment these being student age, student ability and motivation, amount and quality of instruction, home and classroom environment, peer group surrounding the learner and exposure to mass media. This study detailed that just one variable directly involving teachers was indicative of student attainment – quality of instruction and reported that the largest variable to impact attainment was student motivation, a variable also included in the work of Schalock. The work conducted by Schalock et al. between 1987 and 1993 also found that 80% of variance found in test scores of students could be accounted for by the socioeconomic status of the student. However, Ingvarson and Rowe (2008) listed the impact the class make up (to include socio-economic status of the students) to be accountable for 40% of test score variance. Whilst these two figures differ dramatically, they both show that student attainment is not purely down to the performance of the teacher, which links back to the definition provided by Schalock of the teacher making 'a contribution' to learning. A critical review carried out in 2005 by Berk highlighted that outcome measures should be used with

extreme caution if being used as a tool to measure teacher performance. He stated all the extraneous factors that affect student attainment as well as students' own characteristics cannot be controlled by the education system. At the time of this study there was the global Covid-19 pandemic, this extraneous factor could have impacted student attainment in unimaginable ways[4]. Berks statement was supported by Angus (2017) who claimed that the use of test scores ignores the enormous complexities of teacher-student relationships and the inconceivable variety found in students lived experiences that all impact what occurs within a teaching space.

Reports regarding the use of using student scores raise concerns not limited to the individualistic nature of student attainment, but that the actual use of student grades has had a further unintended consequence – that of leading to deviant incentives for teachers and submission of exaggerated student scores (Koretz, 2007). Koretz (2007) drew attention to the use of the test data not being flawless – it contains measurement error due to its statistical nature and is also highly susceptible to exploitation or inflation. Berk (2005) also raised the same issue surrounding score inflation that Koretz reported. Ball (2003) had reported in earlier work that the focus on student attainment had borne inauthentic practice and relationships with de Saxe et al. (2020) finding 'teaching to the test' the new pedagogical approach that teachers were having to take. Angus (2017) claims that confining the sense of educational achievement to the performance on a standardised assessment is a blinkered and restrictive way of considering success and that this focus has led to a loss in the fullness of education a sentiment that echoed Grant (2012) who stated

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[4] It is important to note that student scores from 2019-2020 and 2020-2021 due to the Covid-19 pandemic were not used by the UK government and no productivity data is available for these years

that by conforming to a standardised testing system the pleasure one achieves in learning and from play was being lost.

2.09 The impact on students

Unfortunately, the emphasis on students' grades has had serious consequences, not only for teachers (to be discussed shortly) but also for some students. Pupil census data from 2018 showed that over 19,000 students from 2900 schools were not present in year 11 (the year they sit their terminal level 2 examinations) when they should have been compared to year 10. Although some students had been found to have moved schools more than 50% had simply disappeared from the education system (Thomson and Nye, 2018). Just like with teachers who are deemed to be 'failing' and subsequently dismissed so it seems are students. This practice is now that prevalent it has its own terminology of 'off-rolling' (Rogers and Spours, 2020).

The parameters for judging teacher productivity using test scores have not been sanctioned by educators themselves. A review of literature published over the past thirty years found just two papers where teachers were consulted on ideas about their productivity. Kenny (2017) found that when questioned over 65% of academics felt that performance measures in place did not account for the duties that contributed to their productivity. Out of all the literature reviewed only one study could be found where educators were explicitly asked what productivity meant to them. This study by Turvey (1995) interviewed faculty members from across four universities in the United States. The range of responses was overwhelming with opinions on productivity including having one student that produced better than average research, getting positive feedback on student evaluations and being able to instil a love and enthusiasm for the subject they were delivering.

With the use of student outcomes as the sole measure directly traceable to the classroom not encompassing so much of what happens within schools (Attick, 2017) educators are still left in an environment where the focus is on these assessments as a way of demonstrating efficacy in their role. The use of student outcomes at level 2 has led to increased teacher regulation in the United Kingdom (Smith and Kovacs, 2011) with fixed targets imposed on level 2 course (key stage 4) teachers. Whilst the arguments against using student scores due to their inability to capture all a teacher's role are plentiful, so is the literature surrounding the impact the culture of using student test scores has had on the overall wellbeing of the profession. To discuss wellbeing of teachers in this context, we first need to consider what workplace wellbeing is as a concept.

2.10 What is workplace wellbeing?

Generally workplace wellbeing has been defined by positive constructs such as feeling valued and cared for, job stimulation and enjoyment, life satisfaction, financial stability, emotional and physical health, and autonomy (Briner and Dewberry, 2007; Hall-Kenyon et al., 2013; Ross et al., 2012; Pillay et al., 2005; Soini et al., 2010). Workplace wellbeing, also referred to as occupational or career wellbeing has even been cited as being the most important of five aspects that constitute wellbeing (the other aspects being social, financial, physical and community) (Rath et al., 2010).

In 2008 an attempt to unify the understanding of workplace wellbeing in Europe took place (Anttonen and Räsänen, 2009) and from this, three new definitions were devised:

1. *"Wellbeing at work means "safe, healthy, and productive work in a well-led organization by competent workers and work communities who see their job as meaningful and rewarding and see work as a factor that supports their life management."*
2. *"Wellbeing at work refers to the experience of the worker that is influenced by how safe, healthy, well-led, and well-organized work is, how effectively the changes in*

work are managed, the level of community support to the individual, and how meaningful and rewarding a person finds work, accounting for the factors of competence and productivity."

3. *"Wellbeing at work describes the worker's experience of the safety and healthiness of work, good leadership, competence, change management and the organization of work, the support of the work community to the individual, and how meaningful and rewarding the person finds work."*

(Anttonen and Räsänen, 2009, pp.17-18)

Fisher (2014) constructed a model that included all aspects of subjective wellbeing at work to build upon eudaimonic and social aspects. This model helped to conceptualise the work that scholars within the field had discussed for workplace wellbeing.

Figure 1.1 Components of Overall Wellbeing at Work (Fisher, 2014; pp.15)
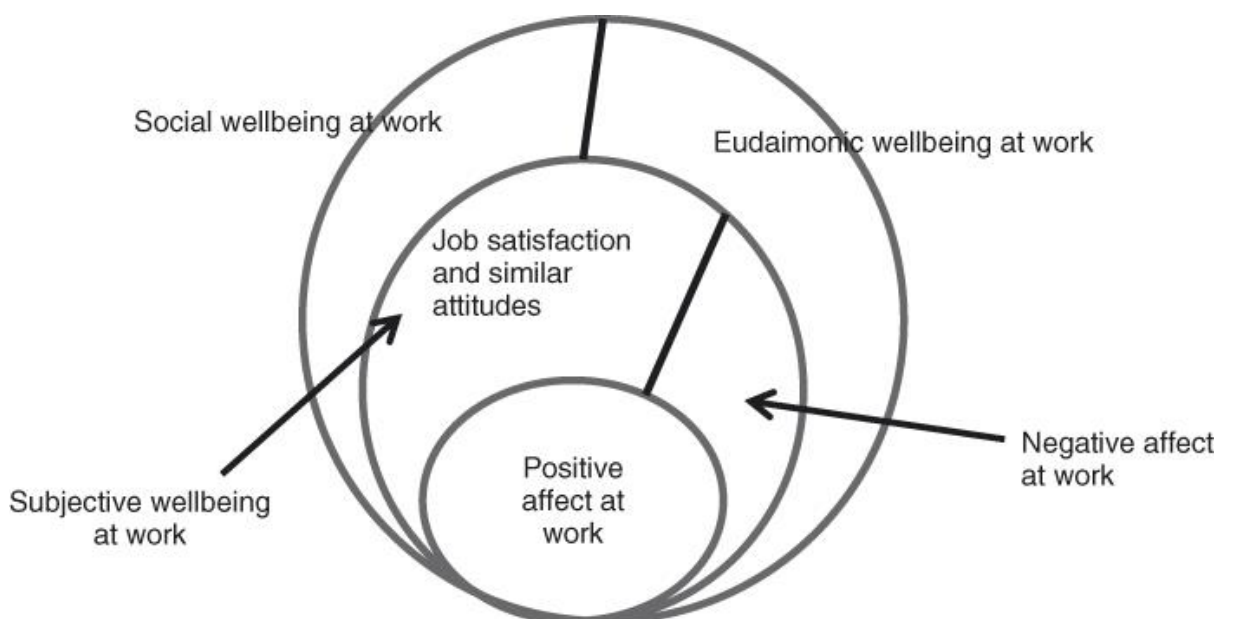
This model shows that there is a multidimensional relationship between hedonic wellbeing, experiences of pleasure and enjoyment, and that of eudaimonic, experiencing happiness and have a sense of meaning or purpose. This model also shows that social wellbeing is tied to eudaimonic wellbeing and may not be a separate construct.

Subjective wellbeing at work includes positive and negative affect as well as job satisfaction and similar attitudes. Locke (1976) defined job satisfaction as *"a pleasurable or positive emotional state resulting from an appraisal of ones job or job experiences"* (pp.1300) and from this definition we can understand how it works within subjective wellbeing – it is reliant upon one's own perceptions and subjective in nature. Organisational commitment can be understood from two different viewpoints; normative (where the person feels aligned or part of the organisations goals and values) or affective (where the employee feels that they are part of an organisational community or family) (Fisher, 2014). Affect, be that positive or negative is discussed in terms of moods and emotions that represent different ends of a scale within a two-dimensional space. The model below demonstrates the different ends of the scale and there are many tools that measure work affect use two or more of these end axis points.

Figure 1.2 Five Factor Model in a Two-dimensional space. (Daniels, 2000; pp.6)
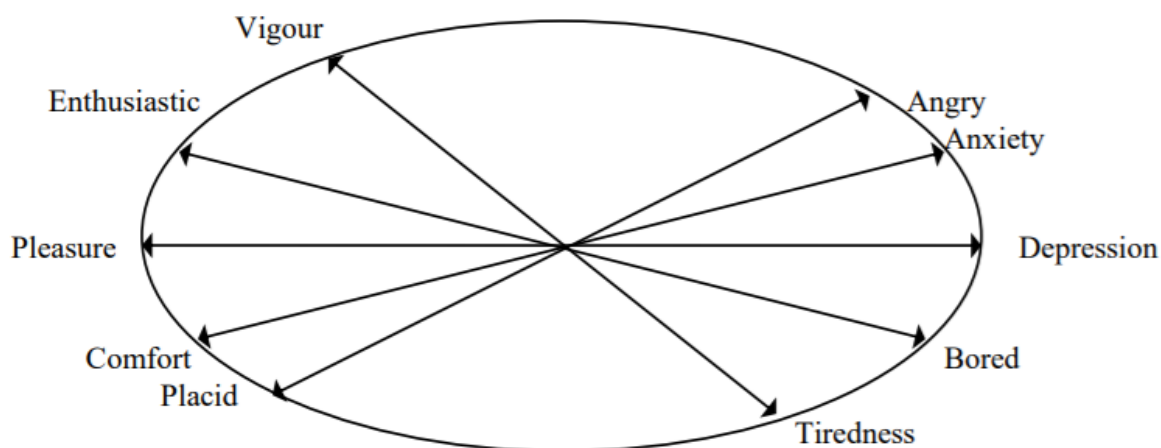
The eudaimonic and social wellbeing portions of the Figure 1.0 constructed by Fisher are intertwined with one another. Eudaimonic wellbeing comprises 8 main facets that are regularly reported on within the field of wellbeing at work and general wellbeing or occupational psychology (Fisher, 2014).

- Job involvement allows a worker to identify closely not only with their work but also with their specific role
- Work engagement can be defined as
  "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. Vigor is characterized by high levels of energy and mental resilience while working. Dedication refers to being strongly involved in one's work and experiencing a sense of significance, enthusiasm, and challenge. Absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work." (Salanova, 2008; pp.209-210)
- A sense of thriving is the belief by an employee that they are developing within their role, learning new skills and ultimately progress within their career (Spreitzer and Sutcliffe, 2007). This links nicely with 'flow' as this involves feelings of mastery, that an employee believes that they are developing their skills and working towards something (Csikszentmihalyi et al., 2013)
- Intrinsic motivation overlaps with subjective wellbeing as it is the level of interest or enjoyment that an employee has when they are completing tasks associated with their role
- Meaning in work has become more associated with the field of social psychology (Adorno, 2021; Rosso et al., 2010; Wrzesniewski, 2003) and requires the employee to feel that they are doing something important, that their work has some impact whether that be to do with them personally (e.g. social/familial commitments) or the organisation as a whole
- Meaning at work can be defined as "*A course of action in pursuit of prosocial intentions embodying the convergence of an individual's sense of what he or she would like to do, should do, and actually does*" (Elangovan et al., 2010)

Social wellbeing can be seen as the third side of the triangle in terms of workplace wellbeing. Relationships are at the heart of social wellbeing, whether they be transient and short lived or longer lasting ones. Relationships at work can impact how the worker feels in terms of trust on a micro and macro level as well as their own sense of thriving. Rath and Harter (2010) found that those workers who believed that their boss cared about them or stated that they had a 'best friend' at work were more likely to have higher levels of work engagement (yet another link between social and eudaimonic wellbeing).

2.11 The place of wellbeing in discussions of productivity

Discussing the impact of workplace wellbeing on productivity is necessary as there are well established links between the level of wellbeing of an employee and/or workforce and the

level of productivity achieved. For example, each year an average of 8.5 days is lost to absence in the public sector and each separate absence costs the UK economy £835 (CIPD, 2016). Dame Black (2008) in her well cited report, 'Working for a healthier tomorrow', stated that absence from work was costing the UK economy £60 billion. The highest reasons given for absence in the public sector are that of stress, muscular-skeletal issues, and mental ill health (CIPD, 2016). In fact, in 2020 there were 140,000 teachers across Great Britain who took a period of absence due to work-related health issues, 77,000 of these teachers being absent due to stress, anxiety or depression (HSE, 2020). This represented 2.2% per 100,000 workers compared with a rate of 1.6% per 100,00 works for all industries. Due to the reasons given for absences, the issue of wellbeing at work has drawn the attention of the UK Government. There has been a move away from purely operational health and safety considerations to the introduction of new initiatives and procedures aimed at cultivating a healthier and happier work environment, with the ambition to create a workforce that can deliver greater levels of performance and productivity (Baptiste, 2008).

The Taylor Report on Good Work (2017) highlighted the need for the quality of peoples' work to be considered. It clearly outlined the needs for a more proactive approach to managing wellbeing in the workplace by focusing on areas such as work-life balance and working conditions. Due to the reported decrease in wellbeing of schoolteachers in the UK, this area is now a focus for the Department of Education (DfE, 2002). In 2018 it was reported that nearly 4000 teachers were on 'long term sick' leave due to work related stress demonstrating the scale of the issue (Asthana and Boycott-Owen, 2018) . Links between workplace wellbeing and productivity are well established (Arends et al., 2017; McCallum and Price, 2010; Miller, 2016). In fact, employees with good physical and mental health

have been found to be three times more productive (Vaughan-Jones and Barham, 2010). From an economic view the lost time and cost in employing replacement staff directly affect the input to output ratios, affecting productivity (McGrory-Dixon, 2012; Zhang et al., 2011).

2.12 The impact of using student outcomes on the practice and wellbeing of teachers

The use of terminal examinations that place key stage 4 teachers at the heart of government measures puts the emphasis to achieve results on them, despite there being many other areas of education that could contribute to student attainment. Some feel that that the economic view of education and testing regime now in place reinforce each other with no change to the system in sight (d'Agnese, 2019). The neoliberalist reforms to education, occurring over the past 40 years, that have high stakes measures setting the benchmark for teachers to fail or succeed (Wilkins et al., 2021) have led to decreases in job satisfaction, increased pressure, and lower commitment to remaining in the profession (Arnott and Menter, 2007; Smethem, 2007; Smith and Kovacs, 2011). The overall impact of this is that schoolteachers in the UK are now reporting higher levels of stress, anxiety, frustration and burnout since 2001 (Perryman and Calvert, 2020; Toropova et al., 2020; Skinner et al., 2019; Worth et al., 2017; Hudson and Hugh-Jones, 2016; Perryman et al., 2011; Klassen, 2010; Dunlop and Macdonald, 2004; DfE, 2002; Drake and Hebert, 2002; Kyriacou, 2001).

The graph below shows the changes in the self-reported levels of stress, anxiety and depression for teachers in Great Britain over the past two decades (HSE, 2020). It can be determined from the graph that the last set of increases occurred from 2015 which is when the new education reforms were implemented by Michael Gove MP – the new Progress 8

accountability measures. The current level is now similar to that of 2001 which was within four years of the education reforms introduced by the Labour Government in 1997.

Figure 1.3. Labour Force Survey Annual Estimate from 2001/2002 to 2019/2020 (Source: HSE, 2020: Online).
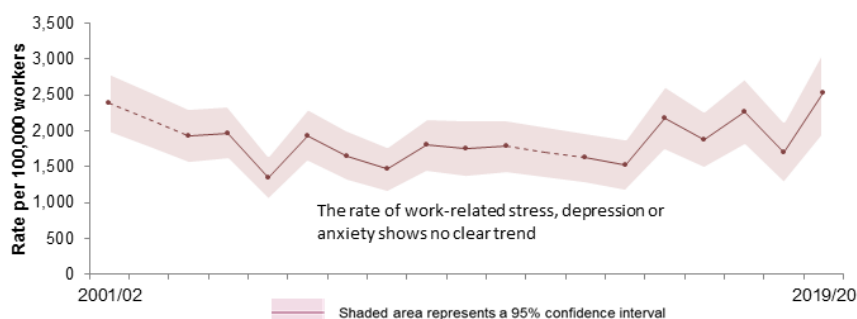
Many believe that the current state of the wellbeing of the teaching profession is directly linked to the increased regulation, scrutiny, and surveillance they are subject to (Sachs, 2016; Baxter, 2013). Education policies put in place over the past 40 years now mean that 'good education' is only perceived to be achieved through the regulatory scrutinous practices of Ofsted and performance management focus on data, but this has resulted in the 'politics of blame' where teachers are deemed to be failures for underperformance and internalise their own feelings of inferiority, individual failures, incompetence and self-defeat (de Saxe et al., 2020). Due to government policy, teachers are now faced with a system of school self-governance, shaped by the private organisations that run them with no accountability to the local authority, and this system provides a vehicle for coercive interventions into their pedagogy (Wilkins, 2015) with the profession now seen by some academics to be a technical workforce that can be controlled rather than respected (Tomlinson, 2005). Each change to the surveillance and scrutiny of teachers has occurred in staggered increments, added together these changes have led to major adjustments in the workload and workflow of teachers. They have also meant that now, when new policy

brings about more changes, they are viewed as feasible and accepted as necessary with little regard for the impact they will have on the profession (Ball, 2017; Ball, 2011).

The focus on test scores has put undue pressures on teachers to raise scores in standardised tests (Angus, 2017) and the threat of sanctions for underperformance means that teachers are subjected to constant surveillance not only from senior and middle leaders but also now themselves (Wilkins et al., 2021). Using a system that prioritises student scores has been found to cause emotional tiredness as teachers are increasingly conflicted between what they value and believe to be part of their role and what is expected of them professionally (McCallum and Price, 2010) and that the joy they found in the wider learning of their students is being squeezed out by the data driven and accountability system (Brady and Wilson, 2020; Williams and Welsh, 2017). Although the pressures on teachers have been widely reported in the media, Perryman and Calvert (2020) found that newly and recently qualified teachers discovered the reality of the performative culture and accountability measures in place to be much worse than expected and that these measures had negatively impacted their commitment to remaining in the profession.

These different manifestations of increased regulatory and scrutinous practices and procedures will be discussed in turn.

2.13 Workload and working hours

It is generally agreed within the literature that workload for teachers in England has increased due to performativity measures (Skinner et al., 2019; Attick, 2017; Smith and Kovacs, 2011; Travers and Cooper, 1993). In fact, the most frequently cited reason for teachers leaving the profession is that of workload. A study by Perryman and Calvert (2020)

found that newly qualified teachers, although expecting a high workload prior to entering the profession, found that the target driven culture and constant introduction of new government initiatives was causing an increased workload, impacting on their work life balance, affecting the level of their wellbeing and in some cases causing physical and psychological illness (Jerrim, 2020; Jerrim et al., 2020). But do all teachers experience the same stressors? This study involves secondary level teachers who work in state-maintained schools. The reason for this being that independent sector schools do not have their level 2 qualification results included in the productivity measures of the ONS, nor are teachers' hours or salaries included. Private schools are not subjected to Ofsted inspections, however, there is a body, the Independent Schools Inspectorate that is authorised by the DfE to inspect some private schools dependent upon their membership to certain bodies. With it being documented that Ofsted exerts pressure on schools regarding their policies and ethos (Allen-Kinross, 2019), and unlike the ISI have the authority to 'fail' schools, forcing academy conversion and management / teaching staff overhauls, is the teaching profession as a whole experiencing the same workload pressures driven by performance targets for their students? Brady and Wilson (2020) conducted a study exploring similar themes which included both state and private sector teachers in the UK. The results found that private school teachers reported a similar workload to state sector teachers but also reported being much less stressed and feeling more fulfilled in their role. These findings led Brady and Wilson (2020) to then examine the underlying causes of why state schoolteachers would be reporting higher levels of stress, even though their workload was said to be like that of private school teachers. They concluded that private school teachers had more autonomy, could spend more time with students which gave them a sense of fulfilment whereas, state schoolteachers felt their workload was mainly due to accountability measures. These two studies are supported by a report published by the

OECD (2014) which found that teachers said their high workload was a result of administrative work and meetings – again not student focused. One explanation for the findings of the differences between state versus private school teachers could be in the way that they are held accountable for student progress and outcomes. The ISI cannot fail independent schools and put them into special measures, cutting funding or triggering a management overhaul like Ofsted. They also have different measurement criteria which is more holistic and places greater emphasis on the ethos of the school and wider school activities available to students and is also not so data driven. Inspectors for the ISI are normally current senior leaders of other schools or at least have been, Ofsted inspectors may have only taught for a very short time and never worked in a school at any management level. These differences seem to lead a different inspection culture, where for the ISI the overall experience of the student is inspected rather than quantitative variables such as attendance, level 2 scores and rate of exclusion which are a focus for Ofsted (ISI, 2019). In fact, a leading UK newspaper published an article where the ISI system was heralded as a better way of inspecting schools with a teacher saying the same culture of 'fear' that an Ofsted inspection would instil was not present with the ISI system (Floyd, 2016).

It seems that the reported workload experienced by teachers is a major factor in teacher attrition (Jerrim, 2020; Skaalvik and Skaalvik, 2014; Skaalvik and Skaalvik, 2010) (to be discussed later) but it also has a direct impact on wellbeing. Toropova et al. (2020) found that the excessive workload teachers were reporting was leading to emotional exhaustion as well as a motivation to quit teaching. The major facet of burnout is emotional exhaustion which is defined as *"...a chronic state of emotional and physical depletion that results from excessive job demands and continuous stress"* (Wright and Cropanzano, 1998, pp.1). Acton

and Glasgow (2015) also found that the work now demanded of teachers was so intensified that it was having a direct impact on their wellbeing. A further impact of the increased workload of teachers due to accountability measures is that of work-family conflict. Rajendran et al. (2020) conducted a study in Australia and found that teachers (due to increased accountability measures) were working long hours outside of work, a term coined 'spillover' by Erdamar and Demirel (2014). They also found that this seemed to affect female teachers more. The conclusions in this paper were significant as teaching is a female dominated profession with around 65% of secondary school teachers in England being female. Other literature has assumed this is due to the care responsibilities that women face in the home and this adds to levels of burnout and lower life fulfilment (Skaalvik and Skaalvik, 2017; Salanova et al., 2008). In fact, the study by Rajendran found that workload and work-family conflict were significantly correlated and that these two factors had the highest impact on intent to leave the profession. However, the UK Government are taking steps to address this and the Teacher Workload Survey conducted in 2019 did show that there had been a reduction in working hours for teachers (Allen et al., 2019).

Studies that have explored the workload of teachers and the impacts that it has on wellbeing have clearly documented that there is a negative effect when workload is increased. But this effect seems to be greater when the work teachers are being asked to complete is not deemed as directly beneficial for the students and instead is part of a wider scrutiny and accountability process. This study seeks to explore the area of 'valuable' work by asking teachers themselves, will teachers who report higher incidences of performing low 'value' work (work that does not contribute to their learning of their students) report lower levels of wellbeing?

2.14 The cost of teacher sickness presenteeism, absence and attrition

For over 20 years the OECD have has warned of widespread teacher shortages due to the
workforce as a whole ageing, a rise in student population and teachers leaving the
profession early due to job dissatisfaction, lack of recognition and burnout (OECD, 2018;
Santiago, 2002). As of time of submitting this study, there has been a record number of
teachers leaving the profession in 2021-2022. Every five in 1,000 teachers left the
profession in that last academic year compared to two in 1,000 the year before. The
percentage of teachers leaving service after just two years also rose by 2.6% to 19.9%
within one academic year (Walker, 2023). A paper by Sibieta (2020) went further than this
statement and claimed that the education system is broken and is directly attributable to
teacher shortages. From the most recent available statistics there are 208,000 secondary
school teachers in England and at the time of writing this review there were 4473 active
job vacancies for secondary level teachers across England (BESA, 2019). Using data
published by the UK government in 2019, 43,409 teachers entered the profession and
39,675 left, nearly 34,000 of these choosing to leave the profession rather than retiring
(ONS, 2019). On the surface this may appear that there is a small surplus of teachers in
England each year however, the number of unfilled vacancies [5] has risen from 359 in 2010
to 968 in 2019, and as of November 2022 there were 3,300 over a 300% increase (GOV.UK,
2023). It is important to note that although the rate of teachers leaving the profession is
high, it has decreased from over 45,000 in 2014/2015 (the school year the new education
reforms of Michael Gove were implemented. At present, there is not the literature to
support that attrition rates are lower, but within the next five years new data should be
able to show if there is this trend. The statistics published by the UK Government in relation
to teacher retention, are reflected in independent research that has been conducted.

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[5] A vacancy that has been advertised for more than one school term that has not been filled

Perryman and Calvert (2020) found that between 2011 and 2014, 11% of teachers involved in their study had left the profession in the first year, with 28% having left within five years of service. This data is supported by information published by the Office for National Statistics in 2019 that showed that 32.6% of teachers had left within five years. Lynch (2016) found that 23% of teachers had left between 2015 and 2016. Savage (2017) further backed these statistics in his article where he reported that 27,500 of the 117,000 teachers that had entered the profession between 2011 and 2015 had already left. There are some statistics which show much higher rates of attrition for example Acton and Glasgow (2015) who reported 40% of teachers had left within five years. These statistics are reinforced by the ONS (2019) where trends in teacher retention show a steady decrease from 2014 to 2018 with 13.7% of teachers leaving within the first year in 2014 compared to 14.6 in 2018. Although there are some discrepancies in the numbers reported, a clear pattern of teachers leaving the workforce is evident. As previously discussed, policies associated with the neoliberal reforms have increased the workload and accountability measures teachers experience (Toropova et al., 2020) and that these measures have decreased job satisfaction causing an erosion of commitment to staying in the profession (Borman and Dowling, 2008; Hill and Jones, 2020; Lynch, 2016; Perryman and Calvert, 2020; Worth et al., 2017). The research conducted by Perryman and Calvert (2020) asked teachers about their commitment to staying within the profession and found that only 48% were intending to stay. The top three reasons given for wanting to leave where that of a lack of work life balance, increased workload and target driven culture. The Cooper Gibson report (2018b) stated that there is "poor general wellbeing" and that this is a contributing factor to teachers' decisions to leave the profession. Research from the international community shows that teachers are dissatisfied with their working environment and that they feel that the status of the profession as a whole is being diminished, further exacerbating issues with

teacher recruitment and retainment (Borman and Dowling, 2008; Ingersoll et al., 2016). However, it is important to include some recent findings of Jerrim et al. (2020). This study showed no negligible difference for secondary teachers that were unhappy with their work versus other professions. For example, 10.9% of teachers were unhappy with their work versus a percentage for 'all professions' (such as solicitors, nurses, academics) of 9.5%. Primary and headteachers did score lower than secondary teachers at 8.8% and 4.4% respectively. The Jerrim study also reported that although 20.9% of secondary teachers were experiencing anxiety, the percentage for all professions was 20.7%, so secondary teachers were only slightly higher.

One approach to recruiting more teachers has been that of increased starting salaries, especially for those teachers in shortage areas such as mathematics and science who have higher levels of attrition (Sibieta, 2020; Ingersoll et al., 2016; Manning et al., 2019). This was done to make the career path seem more attractive, but Borman and Dowling (2008) found that salary was a minor issue in terms of job dissatisfaction rather than being a driving force.

It is not just teachers leaving the profession that causes concern, but those that are absent due to health-related issues. In 2018 the Department of for Education reported that there had been two million sick days taken by teachers due to stress, anxiety and/or depression. The ONS (2019) reported that in 2018/2019 an average of 7.5 sickness related absences were taken per teacher compared with a national average of 5.8 (CIPD, 2020). Estyn (2013) found that teacher absence, and supply teacher cover caused a decrease in student outcomes due to the lack of opportunity to build meaningful relationships, unchallenging

work being set but also that other staff in the school setting were having their workload increased to help cover the absence demonstrating a myriad of different impacts a shortage of teachers can have. Productivity can not only be impacted by absence, but also presence in the face of low wellbeing and ill health, referred to as sickness presenteeism. Sickness presenteeism can be defined as being at work but unable to effectively or efficiently complete ones work due to a lack of concentration etc. caused by illness (Arends et al., 2017; Neto et al., 2017). Sickness presenteeism has repeatedly been documented to affect work quality (Koopman et al., 2002). Kidger (2016) found that 19.4% of those teachers surveyed were experience moderate to severe depression and had 'poor wellbeing'. This study also found that high sickness presenteeism was found to have a correlation with poor wellbeing. To understand the impact of sickness presenteeism it is useful to refer to the definition provided by Schalock (1993). Sickness presenteeism has been found to have a negative impact on student learning, and if the productivity of a teacher is partly measured against this, sickness presenteeism it can therefore be argued lowers teacher productivity. The same has been found with absenteeism (not able to attend work due to physical or mental ill health) where attainment of students was found to be lower. Jayman et al. (2021) found that there had an increase in sickness presenteeism in UK schools, which can be explained by findings from the Teacher Wellbeing Index (2019) which found that 49% of teachers felt compelled to go into school despite being unwell.

The cost of staff turnover is high, the culture of a school can be lost, students' outcomes can be negatively affected and overall the educational experience of the students is diminished (McCarthy et al., 2009). Overall, teachers leaving the profession places more pressure on those remaining, increasing workload, which is demonstrated to increase

stress and reduce commitment to the profession, a seemingly never ending cycle (McGrory-Dixon, 2012; Zhang et al., 2011).

With accountability measures and workload being at the heart of teachers having absences or leaving the profession, the focus of this study is ever more relevant. By exploring what productivity means to teachers in England, what tasks it comprises of, changes to workflow and realistic expectations of work outputs can be implemented. It may also provide schools with a useful representation of which tasks are causing a negative impact on the wellbeing of their teaching workforce which if reduced could lead to a decrease in teacher attrition.

2.15 The cumulative effect: teacher stress, depression, and anxiety

Teacher stress is defined as deleterious feelings experienced by a teacher, including anxiety, tension, frustration, and anger due to some feature of their work (Kyriacou, 2001). It has numerous causes and each individual may experience phenomena that causes them stress whilst seemingly leaving another unaffected. Fimian (1982) detailed 12 sources of stress; personal competence; self-relationship; conflicting values; social approval; isolation; expectations; self-fulfilment; deficiencies in the work environment; ego needs; self-inflicted stress; professional constraints: and student-teacher relationship (pp.2). In the previous discussions it is clear there is evidence that each of these sources are prevalent within teaching; from the public pressure and scrutiny of league tables affecting social approval and placing constraints on the profession, to teachers feeling conflicted about what they believe their profession to be based around, that of social, emotional, intellectual and physical development of their students and the now 'teaching to the test' culture.

It is well documented that the number of teachers reporting stress, anxiety and burnout has increased (Attick, 2017; Skinner et al., 2019; Smith and Kovacs, 2011; Travers and Cooper, 1993) with one study reporting that just 2% of teachers experience no work related stress (Mazzone and Miglionico, 2014). The increase in pressure has been directly linked to the emphasis on raising scores and the accountability systems now in place (Attick, 2017). In fact, Worth and Van de Brande (2019) stated that teaching was one of the highest stress professions that one could enter. Teacher burnout, also highlighted as a symptom of poor workplace wellbeing has extensive ramifications, including but not limited to absenteeism, increased healthcare costs and poor job performance and mental health claims (Vesely et al., 2014).

In 2005, Johnson et al. found that out of 26 occupations, teachers mental wellbeing was the lowest of all occupations. This was echoed by Ofsted (2019) who discovered that teachers had lower levels of life satisfaction than the UK workforce as a whole. von der Embse and Mankin (2020) conducted a study with 158 teachers from the United States, 30% claimed that they were suffering from clinically significant levels of stress, a result also found in New Zealand where more than 60% of respondents felt their work related stress was unmanageable (Cann et al., 2020). von der Embse and Mankin, unlike many others which only provide a snapshot of teacher wellbeing, conducted a longitudinal study. Using three different scales to measure wellbeing throughout the year they concluded that from mid-November to June a feeling of being connected with the school had decreased by 20%, teaching efficacy by 15% and stress had increased by 17%. It could be a logical conclusion to make that the effects of a terminal exam cycle, where the standardised tests students take occur in the summer term, would be a contributing factor in the reasons behind these changes, a conclusion found to be true in a small qualitative study conducted by Drake and

Hebert (2002). With the focus on student grades as part of performance management and a way to measure teacher productivity, as a class moves closer to sitting those exams the teacher will start to experience the pressure to 'perform' and if there are factors outside of their control, such as socio-economic factors, or teaching learners with additional needs, this pressure will only be magnified causing an increase in workload, working hours and ultimately impact their workplace and personal wellbeing (as previously discussed). Moving to Spain and its secondary school teachers, out of the 71 sampled 30.6% female and 33.3% of male teachers reported that they were highly stressed, with 31% of male teacher experiencing burnout compared to 16.2% of female teachers. This study found that ~25% of teachers were also scoring as suffering from depression (Bender et al., 2017). Studies in Canada, Greece and Norway have all found that workload and lack of autonomy are contributing to high levels of work-related stress (Klassen, 2010; Kourmousi and Alexopoulos, 2016; Skaalvik and Skaalvik, 2017).

Data specific to the UK and England are akin to the findings above. A report published by Education Support (2019) found that 33% of teachers were stressed but more worryingly 68% of senior leaders said they were experiencing stress. The most cited reasons were workload (71%), unnecessary paperwork, government interference and poor management. This report also highlighted that although the government have been more visible in trying to support the mental health and wellbeing of teachers, formal diagnoses of depression had increased and feelings of trust from managers and team morale had all significantly decreased from 2018. Ofsted (2019) also reported that there were increased levels of low occupational wellbeing caused by long hours, excessive workload, excessive marking, teachers not feeling supported by leaders and teachers have no influence on education policy, of which they felt was changing too fast.

It is important to note that one recent study actually found that teachers do not in fact suffer from low levels of wellbeing and mental health compared to other professions and are in fact higher in areas such as self-worth (Jerrim et al., 2020). However, upon examination of the data and methodology some limitations do become apparent. A lot of the data that these authors gathered was from teachers aged over 40 and literature has shown that for those who have been teaching for ten or more years issues that early career teachers (those who have been teaching for five or fewer years) start to diminish (Kourmousi and Alexopoulos, 2016; Kourmousi et al., 2015b). Although useful to have longitudinal data, this paper uses data from 1992 to 2018. Within this time there has been the introduction of many education reforms, some of these working in opposition to each other and simply provides a snapshot of the culture of education at that time. One could argue that data gathered for life satisfaction from 1992 may not be appropriate for use in conjunction with data from 2010 or 2018 to provide an overall result due to the potential differences in the socio-political environments that participants were experiencing at that time. Although the headline from this paper was that teachers do not experience lower levels of wellbeing than other professions on closer examination there were some results from Jerrim et al. that are worth discussing. For self-worth SEN teachers have lower self-worth than most other professions. When ranked by profession and not controlled for demographics HE academics, Headteachers, secondary, SEN and primary teachers all report higher levels of anxiety than other public sector workers such as nurses. However, teachers did have some of the lowest rates of unhappiness. One important result from the Jerrim et al. paper is that SEN teachers self-report higher levels of lasting mental and physical health problems which, unsurprisingly, also found them to report the second highest incidence of 'job leading to ill health' behind social workers.   Rates of depression

amongst SEN and primary school teachers were higher whereas secondary teachers reported higher levels of being unhappy with their work. Compared to matched other professions more teachers are being treated for depression, felt anxious on the day they completed the surveys, experienced higher levels of work-related stress and felt that their job was leading directly to a depressive state. Thus, on closer examination the findings of Jerrim et al. (2020), regarding the profession rankings for each measure of wellbeing are not to be dismissed and still fall in line with much of the recent literature.

With so much known about the level of stress, depression, burnout, and anxiety teachers are experiencing and some of the causes behind it, it is no surprise that there is a recent emphasis on the mental wellbeing of teachers in England. The impacts of teacher wellbeing on teacher productivity will now be discussed.

2.16 The impact of teacher wellbeing on teacher productivity

In relation to teachers, Acton and Glasgow (2015, pp.102) define wellbeing as

> *"the individual sense of professional fulfilment, satisfaction, purposefulness and happiness, constructed in a collaborative process with colleagues and students"*

Comparing this definition to the three by Anttonen and Räsänen and the model provided by Fisher, we can see how the wellbeing of teacher can be measured by both subjective and eudaimonic measures.

The Programme for International Student Achievement (PISA) in 2021 for the first time included a teacher wellbeing questionnaire in their international survey which focuses on 4 main dimensions of wellbeing; cognitive; subjective; physical and mental and social. This inclusion highlights the focus now on teacher wellbeing but also hints at a link between

student assessment and learning and the wellbeing of the workforce to deliver educational progress and success. A school system that is able to establish some degree of teacher autonomy, a way to value and develop self-efficacy and which allows the forging of positive work relationships is deemed to help build a working environment that values each teacher's wellbeing (Doecke et al., 2010). Schools can do this by allowing their staff to have some input and control over the curriculum that they deliver. For example, allowing them to develop their own schemes of work suitable for their students rather than insisting on a prescriptive method. This can also apply to national curriculums – these developed in isolation from teachers and then enforced can reduce feelings of autonomy (Parker, 2015). Giving teachers freedom over their physical space can also reinforce feelings of autonomy for example the use of displays or book collections. Allowing teachers to develop their own instructional methods and their pedagogical approaches is linked with high feelings of teacher autonomy – this also brings with it feelings of professional respect. Increase feelings of autonomy allow for professional growth, innovation, greater tailoring to the needs of students which could result in larger learning gains (Ramos, 2006) and increased motivation and job satisfaction (Pearson and Moomaw, 2005), impacting upon retention of staff and positively impacting school culture.

The previous sections of this review have detailed issues with absenteeism, sickness presenteeism and retention of recruitment of teachers. All have been linked with the different facets of a teacher's job that affect their wellbeing negatively, whether its burnout, excessive workload, increased stress, lack of autonomy or poor management. A high turnover of teachers, or inability to fill a role with a suitably qualified teacher, negatively affects the trust held between the co-workers and senior management. It also potentially causes a loss of knowledge about the school, its environment, and its

stakeholders, which is are needed for sustaining student learning. Ultimately the school performance is likely to be affected leading to the negative effects associated with school league table reporting occurring to the school and its staff (Ingersoll et al., 2016; Toropova et al., 2020). Therefore, an approach to managing the wellbeing the teachers could help negate the possible effects explained above.

Previous research has established some of the most fundamental elements, which contribute to, and improve the quality of a teachers' work are ample resources, practical workload, institutional collaboration, chances for professional development, leadership support and autonomy. Improving teacher wellbeing could positively impact on the attainment of students and therefore on the 'productivity' reporting of the individual school. Teachers considered to have good workplace wellbeing have been found to have better quality student-teacher interactions (Virtanen et al., 2019). This study was supported by the previous work of Jennings and Greenberg (2009) who found that teachers with enhanced wellbeing were able to cultivate and sustain a rapport with students, and actively demonstrate effective classroom management strategies to ensure good behaviour and engagement and represent the social and emotional skills needed to be productive members of society to students. Better quality interactions would naturally lead to greater gains in learning, increasing the productivity of the teacher. Caprara et al. (2006) surveyed 2000 Italian teachers and found that those who self-reported higher levels of workplace wellbeing at the start of the academic year had greater levels of student attainment at the end of the year, in both the primary and secondary populations. This finding is not reported in isolation, Briner and Dewberry (2007) later documented that the wellbeing of the class teacher could account for some of the variance in standardised test scores, and this was still true when adjusting for student demographic variables.

Additionally, teachers who report higher levels of job satisfaction are able to employ a better quality of instruction and enhanced learning support for their students (Klusmann et al., 2008; Kunter et al., 2013). The effect of poor wellbeing is therefore not surprising to have the opposite effect and teachers experiencing greater levels of stress are more likely to have weakened student–teacher relationships (Herman et al., 2018; von der Embse and Mankin, 2020).

Miller (2016) states that an organisation that puts the wellbeing of its employees at the heart of its business will experience increased productivity. A recent study found that a Headteacher who gave every member of their teaching staff one afternoon a week non-contact time to do with as they please saw an increase in productivity and a boost to the morale of their staff (Virtanen et al., 2019). Çimen and Ozgan (2018) found that psychological capital of teachers increased when opportunities to work as a team with colleagues also increased, and in turn this led to teachers being able to help more students overcome problems in their learning.

The evidence suggests that if a focus were to be put on improving on teacher wellbeing this could aid school systems address and remedy some of the negative effects that are being reported. If the issues of workload, poor management, working hours, burnout etc. can be tackled and strategies put in place to try and alleviate causal factors them the return should be a healthier and happier workforce taking fewer sick days, when in work not experiencing sickness presenteeism improving productivity and a greater retention of already qualified teachers which can arguably be a positive for the sector's productivity.

2.17 Theoretical Framework

The diagram on the next page demonstrates how the different literature streams discussed are all interconnected and demonstrates where relationships exist. The diagram is not the finished product, nor does it claim to be an ultimate representation of all relationships that exist between workplace wellbeing and productivity in teaching. The diagram demonstrates the complex nature of discussing productivity and workplace wellbeing and how each of the facets discussed in the literature review for wellbeing can be affected by another. It also highlights how work and workload are linked with the performance measures which in turn are linked to productivity which influences workplace wellbeing.

However, the framework also demonstrates where greater understanding can be gained between the different streams. This research generates new knowledge and theories which will add to the streams of work tasks, workload, definitions for productivity and stress. The understandings will support overall concepts of productivity – what teachers perceive it to be and establish if there are statistical relationships between work tasks, productivity and work-related stress. This novel research will seek, for the first time in literature, to provide a statistical link between explicit tasks that teachers are doing, feelings of productivity regarding certain tasks and how stress is then mitigated or propagated by these actions (if at all) that take place in the everyday life of a secondary teacher in England.

Figure 1.4. Theoretical framework for literature streams
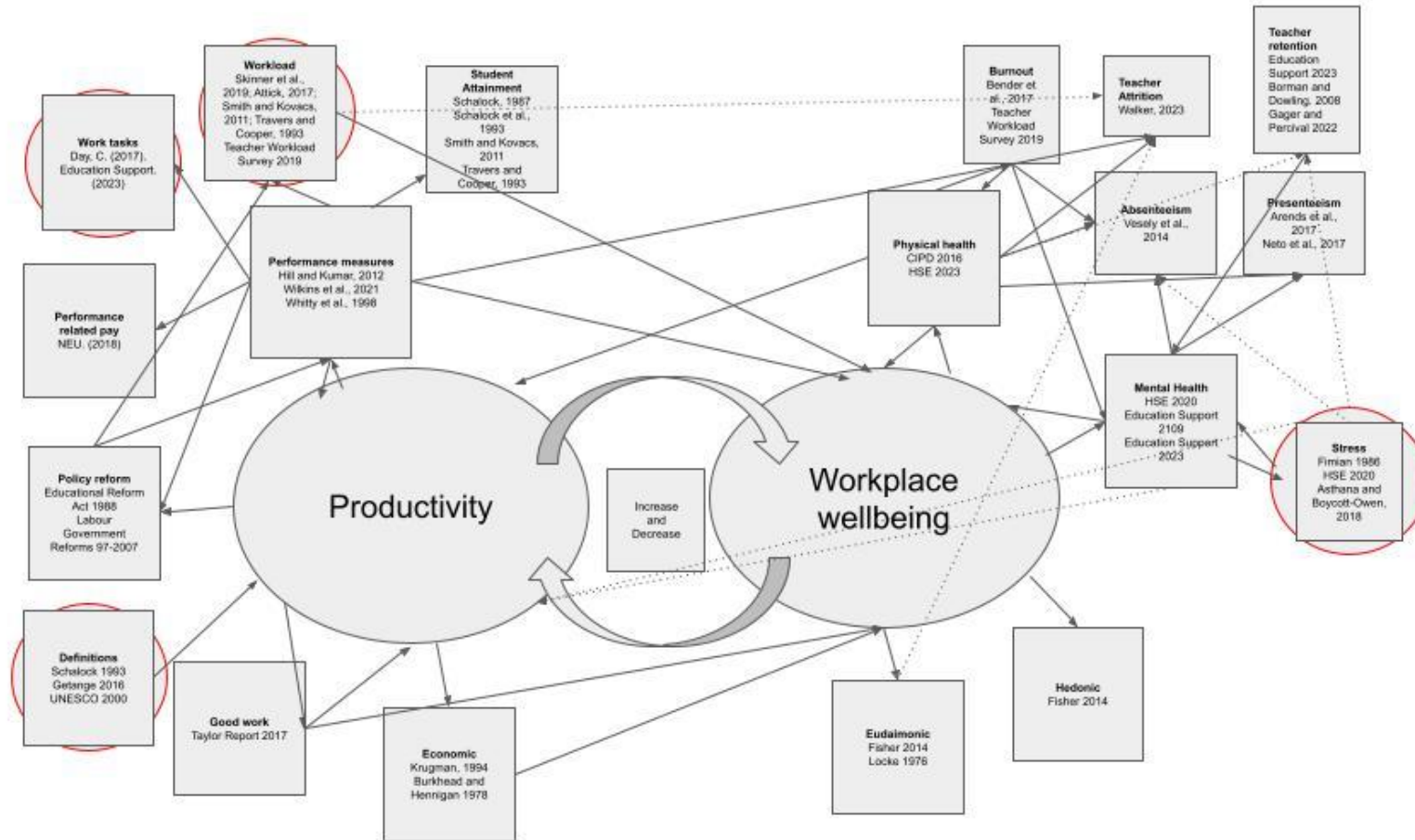
2.18 Closing remarks

The evidence discussed in this review has examined how productivity is measured in education, for teachers, if these measures have had an impact over time and how these relate to the workplace wellbeing for teachers. The literature has shown that student progress is used as key measure for teacher productivity, despite there being evidence that the impact on student attainment is negligible or in some cases, detrimental. Teacher retention is on the decline and the number of unfilled positions at a record high. Reports of stress, anxiety, burnout, and depression are plentiful with little evidence to argue otherwise.

The literature surrounding productivity in education does provide evidence that the system being employed follows a framework based around the teacher (and student) as an economic being. The literature has suggested that a more holistic approach, one that encompasses more aspects of the teacher's role could remove some of the performance management pressures on teachers. The literature has shown that a method that relies solely on student outcomes is neither a true reflection nor valid measurement of the 'input' a teacher makes. Moreover, the impact that these measures and the accountability systems they have created have on teacher wellbeing are leading to a recruitment and retention crisis which if not addressed could impact the lives of millions of students in England in the next decade.

This study aims to place educators at the heart of defining what productivity means to them, what it looks like in their everyday job role and how it impacts on their wellbeing. Schalock et al. (1987) posed the question do teachers know how to improve their

productivity? This thesis suggests that the first question that must be posed to teachers is 'what is productivity?'.

It is hoped that this research will highlight the multi-faceted role of the teacher, provide a definitive list of what tasks teachers impact on their productivity, allowing for the reviewing of tasks they feel do not ultimately increase productivity and positively impact upon their wellbeing.

3.0 Methodology

3.01 Introduction

This chapter of the thesis will focus on what was done and why and provide a rationale to the methodological choices. At the heart of each decision are the research objectives.

- To provide a working definition for productivity of secondary teachers in England
- To investigate and produce empirical indicators for the everyday job role of a secondary teacher employed in England that contribute to their productivity through direct consultation with practising teachers
- To develop a tool that measures the productivity of secondary teachers in England
- To explore the relationship between workplace wellbeing and reported productivity among secondary teachers working in England by using the new TPAT and Teacher Stress Inventory

The research design was at all times led by the research questions. These being:

1. What do England based secondary teachers consider as 'productivity' in terms of their everyday job role?
2. Can productivity be broken down into defined tasks and responsibilities that teachers undertake?
3. What do secondary teachers in England consider affecting their wellbeing in the workplace?
4. What are the reported levels of stress for secondary teachers based in England?
5. Is there a relationship between self-reported levels of stress, and the empirical indicators of productivity in the TPAT?

3.02 Research Design Overview

This project followed a mixed methods exploratory design involving three key stages.

Stage one adopted a qualitative design. Focus groups alongside 1:1 interviews were held to explore what the term 'productivity' means to secondary teachers based in England. The literature discussed as part of this thesis demonstrated that teachers were rarely consulted on what 'productivity' meant to them or what they deemed a 'productive teacher' to be.

Thematic analysis was used to draw out themes and relationships in data which ultimately were used to develop a new tool that contained empirical indicators of teacher productivity. An empirical indicator is described as "*a measure or component from which conclusions on the phenomenon of interest (the indicandum) can be inferred.*" (Heink and Kowarik, 2009, pp.584).

Stage two moved to a quantitative design. Using the findings from focus groups and interviews a 52-item TPAT was developed and trialled. The TPAT was distributed nationwide to gather a larger sample to test its construct validity using exploratory and confirmatory factor analysis. This stage concluded with a TPAT being developed which consisted of 16 items and six dimensions. Multiple regression analysis was conducted to determine the differences between demographic groups and their perceived productivity.

Stage three was also of quantitative design. Explorations were made into the self-reported stress levels and stress manifestations of teachers in England against demographics (such as age, subject taught) as well as against the items of the TPAT.

3.03 Research Philosophy

Creswell (2018) states that the research question and consequences of the research should be the foundation to any study and that only then should the relevant worldview be acknowledged. This study is a mixed methods study, the design of which is led by the paradigm of pragmatism.

3.04   Pragmatism

The fundamental ideas of pragmatism, taken from Creswell and Creswell (2018) are:

- Both a qualitative and quantitative design can be used within the same project

- The research question(s) should be the main focus for the researcher
- The researcher should not subject themselves to choosing between post positivism and constructivism
- The philosophic models of 'truth' and 'reality' should be dispensed with

Creswell and Creswell (2018) explain that the pragmatist, rather than having to adhere to the strict principles of each paradigm, can be afforded creativity – they can approach their research with a 'pluralistic' attitude. This can allow the social imagination to flourish and minimise the possibility that social phenomena are excluded or missed altogether (Mills, 1959). Pragmatism, has now become a well-supported paradigm, embraced by many published, academic scholars (Tashakkori and Teddlie, 2003). Following a mixed methods approach might be seen as its own distinctive paradigmatic approach, however, Denscombe (2008) explains that due to the inconsistencies and variations within the field of mixed methods research, the pragmatist can accommodate for these through its underpinning decision-making processes for researchers. In fact, Denscombe (2008, pp.273) states that *'pragmatism is widely regarded as the philosophical partner for mixed methods research'* and allows for 'good' social science research to be conducted.

When examining the different philosophies, it became apparent that the research questions could not be answered by purely a positivist or constructivist worldview. The research needs to answer what productivity is and looks like to teachers, but there is no literature available that can answer that, unless relying upon literature that relies on student attainment (the problems with which have been discussed) or on literature that does not provide actual tasks, duties or responsibilities that a teacher undertakes to be productive. The only way this question, for the purpose of this thesis, could be answered is to go direct to the source – the teachers themselves. This would mean a qualitative design. However, in order construct the TPAT, to explore what teachers are doing that is productive

and/or unproductive, and this is impacting upon their self-reported stress, a quantitative design is required. Therefore, with the guidance of the paradigm of pragmatism, a mixed methods design that is exploratory in nature and selects the tools that best answer the questions is selected.

Research questions one to four would involve a qualitative approach. From the review of literature, getting to base a new definition and empirical indicators on the lived experiences of teachers was essential. Therefore, a phenomenological approach was decided upon. However, questions two, four and five would need a quantitative approach to construct the TPAT, to test its construct validity and to explore the relationships it holds with stress. With all of these outcomes still exploratory in nature, and involving a combination of interpretivism and positivism, post-positivism as a paradigm was the pragmatic choice to attain an answer for research questions two, four and five.

3.05 Phenomenology

The purpose of a phenomenological approach is to *"describe the essence of a phenomenon by exploring it from the perspective of those who have experienced it"* (Teherani et al., 2015, pp.670). It allows the gathering of fresh ideas and insights into phenomena that is lived by gathering rich data from those that live it. For the purposes of this research design, descriptive (eidetic) phenomenological approach that will be adopted. In eidetic phenomenology there are multiple constructions of reality and objectivity is in relation to how the description of an event is true to the phenomena (Mayoh and Onwuegbuzie, 2015). Although the experience of the phenomena is subjective, there will be 'essences' of any experience that are common to those that have experienced it – these essences will be uncovered using focus groups, interviews and the discussions that occur within them. These 'essences' discovered through thematic analysis, the analytical tool chosen, can be

used to build the empirical indicators later. In phenomenology all data are based on subjective reality – it is 'true' to those that have experienced it, and it is not for the researcher to prove or disprove their reality but instead use their experience to form a framework of new knowledge (Giorgi, 2009). The researcher should aim to surpass their own assumptions, knowledge, or experience, that is to experience transcendental subjectivity, and they do this by recognising their own values and bias and this is constantly re-assessed throughout the process. The aim is to remove any impact of the researchers' own experiences on the insights provided by the participant. In this study, to produce emergent themes (or essences) computer software that manipulates data to produce visual representations of it is used in analysis. Rather than applying pre-existing knowledge or experience, cluster analyses and word frequency clouds, that allow for an objective representation of data are produced. Each stage of analysis being described and displayed for the reader will demonstrate how achieving transcendental subjectivity has been a consideration and increase the trustworthiness of the findings.

3.06 The rationale for phenomenology

This thesis is not working under an already established theorem to build upon, in fact, it is synthesising its own. This thesis within its aims does not set out a prediction or have a purpose of testing a 'pre-existing truth' (Mackenzie and Knipe, 2006), instead, it is basing its contribution to knowledge in the hands of those experiencing the phenomena themselves – secondary school teachers in England. It cannot be claimed that the definition produced or empirical indicators are applicable to all those experiencing the phenomena, to all secondary teachers in England, but the definition and indicators should have inherent essence(s), for those experiencing the same phenomena within that specific social and cultural environment —those that are teaching in a state maintained secondary school in England and deliver Level 2 qualifications (Feilzer, 2010).

Post-positivism

> *"balances both positivist and interpretivist approaches… post-positivism, along with quantitative analysis, includes the perspectives of historical, comparative, philosophical, and phenomenological analysis"*
>
> (Panhwar et al., 2017, pp.253).

By adopting a phenomenological approach during the first stages of the research and accepting that the lived experiences of those involved in the study are their truth, but not necessarily true to all who experience the phenomena, the worldview of positivism, which seeks to prove 'the truth' would not have been acceptable. This research does not claim that all findings are applicable to all teachers, many factors are extraneous, as is the case with student grades being and the issues with them being as 'fact' regarding a teacher's productivity are well discussed. Post-positivism allows this research to use quantitative tools in its design, whilst still affording the acknowledgement of the social, political, and cultural context

3.08 Philosophical foundations

The table below demonstrates the philosophical underpinnings for this research. A common theme between all three is that truth is subjective, and that no interpretation is infallible.

Table 0.2 Philosophical underpinnings of pragmatism, phenomenology and post-positivism

	Pragmatism	Phenomenology	Post-Positivism
Axiology *Values, and what is morally right*	Understanding how wellbeing and productivity could interact for secondary teachers. Wellbeing in teaching is a real-world	Understanding the lived and perceived experience of the teacher. Not applying already constructed criteria to what they are saying.	Seeking to follow the scientific process but not ignoring biases or the position of the researcher in the interpretation of the data

	problem that needs addressing.		
Ontology *Nature of reality*	Truth and meaning are shaped from the experiences of those living it. It is their experiences that construct the truth.	How teachers have experienced their professional lives is how they report on their wellbeing. It is personal and subjective.	Whilst there can be a truth, that truth is not wholly objective and can be subject to revision as it is fundamentally based on social constructs
Epistemology *How do we know what we know*	Any knowledge gained is not ultimate truth but subjective. What is learned needs to be useful in terms of the foci of the study.	Lived experiences are the source of further knowledge. Through interpretation of data essences are identified that allow for a deeper understanding.	Data is interpreted within the framework that is constructed, and a framework can also be constructed from data. Empirical findings are still subject to human interpretation which is not infallible.

3.09 Arguments for pragmatism, phenomenology, and post-positivism in research design

Howe (1998) purports that it should be up to authors to follow 'whatever method works' and that therefore following a mixed method phenomenological research design fits within the worldview of pragmatism. This is where phenomenology compliments pragmatism as one its strengths is its flexibility (Garza, 2007). With the pragmatist focus being on understanding lived experiences, it involves a methodology that is central to phenomenology (Rosenthal and Bourgeois, 1977). Phenomenology also offers a complementary approach to the subsequent post-positivist phase. Green et al. (2009) explain in their 2009 paper that the discovery-oriented nature of phenomenology is a natural fit with the explanatory nature of post- positivist research. They go on to explain that by mixing these two methods it allows for the expansion of the emerging theories presented by phenomenological findings and provides imitation to them –these theories

can start to be applied to a wider context. This is what this research does, it captures the essences of productivity from a small sample during focus groups and interviews and then widens these essences to a national population for validation.

3.10 Conclusion

To gain the insight that is needed into productivity, contribute to the knowledge regarding this and ultimately produce the TPAT, adopting a mono-method design for this thesis would result in valuable insights being lost (Cherryholmes, 1992). The pragmatic worldview allows for a creative approach in the search for answers to the research questions, but also enough guidance in informing the methods and tools that are required. By adopting a phenomenological approach rich and meaningful data are gathered (Robbins and Vandree, 2009; Giorgi, 2009) and data are not manipulated but examined with fresh eyes. Rather than drawing on existing literature and ideas and therefore gathering data with some reference to presupposed knowledge, this thesis uncovers what productivity means, feels and looks like to those experiencing it. Again, reinforcing the alignment that this research philosophy has with pragmatism.

4.0 Stage One – Building a definition for productivity and developing empirical indicators

This stage of the thesis seeks to meet the objective of being able to provide a new definition for the productivity of secondary teachers in England and the research generating a comprehensive list of empirical indicators that teachers believe constitute part of their everyday job role that contribute to or diminish their productivity.

Specifically, this stage of the thesis will answer the guiding research questions of:

- What do England based secondary teachers consider as 'productivity' in terms of their everyday job role?
- Can productivity be broken down into defined tasks that teachers complete?

4.01 Method

The purpose of this phenomenological stage was to gain an understanding of the everyday working lives of teachers and what tasks they considered their job. These tasks would then be used to develop empirical measures so that the new TPAT could be constructed. A semi-structured approach was taken to elicit responses from participants that would contribute to the overarching aims and guiding questions of the research.

As the main aim of this study is to produce a new TPAT it was important to consider the methods chosen that would lead to the development of a new definition for the productivity of teachers and also the empirical measures used to assess it. Therefore, previous literature was sourced that was able to provide a basis for my approach as these sourced studies had produced validated assessment tools. For example, Cabrera (2011) conducted an exploratory sequential mixed methods research project to investigate racial hyperprivilege in Higher Education. This study followed the template of gathering rich

open-ended qualitative data. Mirroring phenomenology, here the researcher went to those experiencing the phenomena. Following the data collection, frameworks were developed, and a survey was constructed and distributed to a much larger sample. Further examples of this design are readily available (Clark et al., 2012; Enosh et al. 2013). Myers and Oetzel (2003) provide an exemplary model for the use of this phenomenological exploratory design where they conducted interviews to gather open ended data which was then used to develop a questionnaire in a later phase. Like this thesis, they used a small sample of the population to develop their narrative but were still able to produce a questionnaire that was found to be both reliable and valid and used to sample a larger population to determine relationships between variables. These different studies from recent years demonstrate that the research design proposed can lead to a new tool being developed that is deemed as valid in its measurement of phenomena.

4.02 Sampling

There are four main stages when approaching sampling within an investigation, these being defining the sampling universe, deciding upon the size of sample, formulating the sampling strategy and finally how the sample will be sourced (Robinson, 2014).

The sample universe for this study does include inclusion and exclusion criteria. These criteria should have allowed for demographic homogeneity. The criterion for this study was that all participants must be currently employed as qualified secondary school teachers in England and deliver key stage 4 externally examined courses (GCSE, BTEC). The exclusion of key stage 3 and primary school teachers is due to the UK Government only using key stage 4 student outcomes in their reporting of educational productivity. Ensuring this homogeneity is important due to interpretive phenomenological approach that is being

taken in phase one of the study as this works in conjunction with its philosophical foundations (Smith et al., 2009).

Nine teachers were recruited to take part in this study between March and July 2020. The teachers were split between two focus groups and three 1:1 interviews. The number of participants that took part in each focus group is supported by Giorgi (1994) who states that a minimum number of three participants would be required to conduct the focus group. With more than six participants there may not be enough time during the focus group meetings for each participant to express their views and opinions, resulting in important insights being lost.

Sampling employed a non-probability snowball technique. Snowball sampling is a non-probability form of sampling that involves the research participants using their own social, familial and/or professional networks providing referrals for the researcher to recruit further participants to contribute to the study. This was the technique used to recruit participants as it can lead to an increase in sample size and ensure that participants are representative of the population wanting to be studied (Baltar and Brunet, 2012). Snowball sampling has been appropriate to select in multi-phase projects as it allows each phase to be built upon and a range of sampling techniques to be used (Sharma, 2017).

Advertisements were placed on social media platforms including X formally known as Twitter and Facebook. Schools were contacted directly as well as leading teaching unions. Union representatives at the NEU, the largest teaching union, forwarded on a request for participants to all members in their region. From this campaign 14 teachers in total came forward, one teacher taught primary phase students so was excluded and four others failed

to attend their focus group meeting. The use of social media alongside direct mailings to groups with a mutual interest in the themes of the research (Rubin and Rubin, 2011) to recruit was guided by the need to reach a certain demographic and also that it has been shown to be successful recruitment tool in the social sciences (Whitaker et al., 2017; Gilligan et al., 2014).

Following the recruitment of participants, each participant was provided with an individual participant number which was linked to a description of them and not their name so that they could withdraw consent at any time.

All participants recruited were currently employed as a qualified teacher in a state-maintained school in England and delivered key stage 4 (Level 2: GCSE) courses. 67% of participants were female, 50% had been teaching for ten or more years (median = 10) and the profession level ranged from classroom teacher (2), 2nd in department (3) and middle management (4). The midlands, north and south of England were represented and the most common type of school was an academy school. The median number of years teaching is one aspect of the sample of note as most recent data shows that one in three teachers who qualified in the last five years have left the profession (Thornton, 2023).

The profiles of the participants are detailed below (their names have been changed to provide anonymity).

- Focus Group 1
    - FG1010 – Margaret, Modern Foreign Languages Teacher, 10 years teaching, northwest of England
    - FG1012 – Bella, Biology Teacher, 1 year teaching, northwest of England
    - FG1013 – Claire, Dance Teacher, did not wish to provide additional information on the recording
- Focus Group 2
    - FG1016 – Karl, Science and PE Teacher in an SEN school, 10 years in teaching, northwest of England

- - FG1017 – Emily, English Teacher, NQT (less than one year teaching), West Midlands
    - FG1018 – Mo, English Teacher, 18 years in teaching, northeast of England
  - Interview 1
    - FG1020 – Rosie, English Teacher, 17 years in teaching, West Midlands
  - Interview 2
    - FG1019 – Paul, Music Teacher, 7 years in teaching, London
  - Interview 3
    - F61014 – Jim, Design & Technology and Engineering Teacher, 11 years in teaching, northwest of England

4.03 Location of the study

Due to the global Covid-19 pandemic all focus groups and interviews were held online using the video conferencing platform Zoom. Participants joined the sessions from their workplace or home. Using an online platform is considered an acceptable method of data collection (Mason, 2017). Ethical considerations were made guided by previous research (Bender et al., 2017) which included that participants had access to the full research briefing document and gave informed consent before taking part in the session.

4.04 Data collection

A phenomenological approach was used to gather data by holding focus groups and interviews with key stage 4 teachers currently teaching in state-maintained schools in England.

By using phenomenology, new codes and themes could be generated to produce empirical indicators that teacher felt were part of their everyday lived experiences and contributed to their productivity (or undermined it) which could be used to build the TPAT.

The phenomenological interview is considered a form of data collection within the social sciences (Henriksen et al., 2022) and allows the 'interviewer' to be a witness to the

meanings of experiences as they unfold in real time (Gadamer, 1998). Focus groups also allow this due to the human interaction taking place within them. Todres and Holloway (2004) explain that the descriptive accounts of a participant's experience can lead to conclusions that are applicable to beyond just them and can provide insights that are transferrable all of which can be used to build thematic patterns; this explanation provides a rationalisation for the use of my descriptive phenomenological approach to inform the later stages of this research where following construction of the TPAT it was distributed to a nationwide sample. As a basis for constructing the new tool, firstly a new definition of productivity needed to be derived, the content and meaning of which was led by teachers themselves – something that is missing from literature. Although the new definition for productivity was derived from nine teachers, the insight into their lived experiences that drives the definition can be applicable to the teaching profession as a whole the rationale of which is underpinned by the explanations of Todres and Holloway (2004).

A mixture of 1-hour focus group meetings (x2) and interviews (x3) were held online using the Zoom videoconferencing platform. Audio recordings were transcribed using Otter.ai transcription software and then checked against recordings for accuracy on three occasions. Transcripts were then imported to NVivo 12 for analysis. The number of interview and focus group sessions held in order to generate rich and valuable data is supported by Guest et al. (2017) who found that 80% of all themes discovered were found with just two focus groups.

There were multiple reasons for using both focus groups and interviews. Both methods are commonplace as a form of data collection within social science research and are a method associated with phenomenological philosophy (Dearnley; Hannabuss, 1996; Kvale, 1994;

Rubin and Rubin, 2011; Ruslin et al., 2022; Sholokhova et al., 2022). By using focus groups and interviews a detailed record of the knowledge, feelings and opinions was elicited. Focus groups were included as they act as a vehicle to encourage practical discourse between participants (Wilson, 1997) and by using focus groups alongside 1:1 interviews, they allowed for the gathering of more viewpoints at one time with the aim to enrich the final definition and measures derived from the data. Focus groups allowed me to capitalise on the discussions recorded between participants to gather rich data. The interactions between participants lead to them divulging experiences and opinions that if holding purely 1:1 interviews could be missed. For example, one participant could claim that a certain responsibility within their job, and successful execution of that makes them feel productive and this could lead to a consensus between focus group members. This consensus would be demonstrated within the analysis and me in devising themes in the tool construction stage. Focus group settings could also lead to understandings of why people think what they do rather than just a surface examination of what they think (Kitzinger, 1995). Focus groups have also shown to be a tried and tested data gathering method in the formulation of survey and questionnaires (O'Brien, 1993; Court, 1995). Kreuger (1994, pp.3) provides a succinct and highly applicable explanation for the selection of the focus group as a data collection method in qualitative research,

> *"not to infer but to understand, not to generalize but to determine the range, not to make statements about the population but to provide insights into how people perceived a situation"*

Whilst selection of a pre-standardised and reported upon measure for wellbeing (The Teacher Stress Inventory developed by Fimian, 1988) could be selected, a quantifiable measure that does not rely wholly upon student outcomes or economic data (such as salary earned versus hours worked) is not present at this time for productivity. The collaborative dialogue between the participants, being able to collect data that deeply explores the term

'productivity' is an invaluable aspect of the first stage of this study that leads to the tool development stage.

Tang and Davis (1995) state that four factors should be considered when determining the size of each focus group these being number of questions asked, time allotted for each question, format of the session and duration of the session. With one of the foci of this study being wellbeing it was pertinent that undue time pressures were not added to the lives of the participants who had volunteered to take part. Within this must be the consideration of travel time to and from the arranged venue. However, due to the global Covid-19 pandemic, this factor was eliminated as a consideration as all interviews and focus groups were held online. Considering the demands on a participant's time was also a factor in using both focus groups and interviews. Some participants were not available at the times when focus groups were occurring but wanted to take part in the research and therefore their participation was switched to an individual interview format.

A semi structured format was adopted for each of the sessions. Due to the outcomes from the sessions being predetermined – the need to gain an understanding and develop empirical indicators of teacher productivity - it was imperative that there was some form of control of the direction that the experiences of the participant would be gathered generating relevant data (Ruslin et al., 2022; Henriksen et al., 2022) which semi-structured allows for. However, this format also allowed for some flexibility giving the opportunity to adapt to the participants responses and ask follow up questions, where relevant which could result in more powerful data (Ruslin et al., 2022). Using this format allowed the 'guiding' of interactions (Rubin and Rubin, 2011) and stay true to the 'exploratory' nature of this phase of the research and phenomenological approach (Magaldi and Berler, 2020;

Kvale, 1994). Participants were asked to detail what areas of their job made them feel productive and unproductive so as many tasks associated with their role could be identified. Without including both sides participants may have focused on just one of area of their work, this would have omitted important data for use in the construction of the TPAT. Further questions were posed that asked the participants to give examples of where they witnessed the phenomena in others.

In designing the format of interviews and focus groups the following guidance provided by Hannabuss (1996) was considered which was to

1. Establish rapport with the participants (point 1 of the format above)
2. Avoid closed questions
3. Avoid the use of jargon. Therefore, questions 1 and 2 were the first posed to help the participants conceptualise the idea of productivity before giving real world examples.
4. Being non-judgemental. It was important not to diminish or amplify the examples of the teachers' lived experiences but repeat back to them for clarity or signal that they had been heard and acknowledged.
5. Ensuring there is pace and focus to the interview. The balance of enough questions versus too many was tricky to design before holding the first session but following reflections from the first session it was decided to include all questions moving forward as felt that there was ample time to cover the first four and possibly move on to the final question which explored wellbeing.

Each focus group session was designed to last no more than one hour (to include a short break if participants requested it) and follow the format below.

1. Introduction of researcher and synopsis of research
2. Opportunity for participant questions about research and completion of consent forms
3. Question 1: If you think of the term productivity in the wider world, what does it mean?
4. Question 2: If you think of the term productivity in a school setting, what does it mean?
5. Question 3 – Can you give an example of when you have felt productive? Unproductive?
6. Question 4 – Can you give an example of when you thought a colleague was productive? Unproductive?
7. Comfort break (if required by participants)
8. Question 5 – What do you think affects workplace wellbeing?
   o Within this there were to be 4 areas covered: physical environment, leadership, relationships with colleagues and work-life balance. These areas

were included by considering the research previously discussed as part of the literature review as to what impacts teacher wellbeing.

The final question regarding wellbeing was to be included if there was time during the focus groups and interviews to contribute to the understanding of any findings from the Teacher Stress Inventory and TPAT but was not imperative to the main aim of this stage which was to develop a catalogue of empirical indicators which could be used to construct a new TPAT and therefore, if time was being spent by participants answering the first four questions, this would not be rushed in order to explore wellbeing.

4.04a Data Security

Video files of the Zoom sessions held were not kept, only the audio recordings were stored on a password protected computer and Zoom account until the recordings were uploaded into Otter.ai so that teachers could not be visually identified. Transcripts were produced using Otter.ai which is a password protected software platform. Once downloaded, transcripts were stored on a password protected computer and, on a password protected 'one drive' which is a system provided by Manchester Metropolitan University. Transcripts were imported to NVivo software which was installed on a password protected private computer. No names were used in transcripts downloaded, only the participant ID number that had been provided to the participant at the start of each Zoom session. Following completion of the study and the end of the enrolment period, any research data will be removed from the private computer but will remain as archived data on a secure system owned by Manchester Metropolitan University for ten years as per their Retention and Disposal Schedule.

4.05 Limitations of Research Design

There are three limitations that should be addressed with this stage of the research these being the sample size, the use of self-reported data and use of NVivo 12.

Although this size of sample is considered acceptable within academic research the original participant number was higher. More study participants could have generated different data or given more weight to certain aspects of discussions that occurred. However, the context of the study must be considered to explain the sample size. The original timing for the data collection phase was March 2020. This is when the UK, along with much of the world went into 'lockdown' due to the Covid-19 pandemic. This delayed the outreach efforts to teachers in England as schools were closed and a national pivot to online / hybrid teaching meant the time pressures on teachers were higher than ever. Some responses from contact with schools detailed the pressures that teachers were under and therefore would not be able to take part. However, there is evidence that previous studies with a small number of focus groups and/or interviews were able to reach saturation. Guest et al. (2017) found that nearly 63% of all codes they generated were coded for in the first focus group and 84% was reached after the analysis of the first three focus groups. By the fourth of their focus groups a negative curvilinear pattern had already been identified which then plateaued. The findings of Guest et al. are supported by Coenen et al. (2012) (five focus groups to reach saturation), Morgan (2002) (five-six interviews for most concepts to be drawn) and Francis et al. (2010) (most themes identified in five-six interviews).

This research adopts a phenomenological philosophy which does not seek to disprove the accounts of teachers as considers their accounts as their 'truth' which does temper the limitation of using self-reported data. However, the data were collected during the Covid-

19 pandemic and although teachers were instructed to think back to the autumn term of 2021 and before, experiences of the past six months could have led to telescoping with their accounts. With this limitation, I consider the wealth of literature on teacher stress published prior to 2020 (and since) to support the accounts of the teachers from this study.

Using NVivo to assist me in the analysis of data is not an approach that has a full consensus within academia. It has been argued that the use of CAQDAS can distance the researcher from data and the 'essences' contained within the data are too big to be brought down to codes and the induced (Sohn, 2017; Goble et al., 2012). However, as I manually coded data I feel that I was able to overcome this.

These limitations offer very clear opportunities for further research. The study could be repeated in the post-pandemic era halfway through the school year with the same questions posed. It would be interesting to see if the same codes came out of the analysis and if teachers' ideas of productivity align with those discovered in this project. The final codes and themes could also be given to a representative sample of teachers for feedback to further strengthen the rigour of the findings. This would also give value to the trustworthiness of the findings.

4.06 Ethics

As part of the doctoral training programme at MMU researchers are required go through an extensive ethics application process – referred to as Ethos. Research ethics is guided by four main principles, and these inform how to work participants and their data, other faculty members or those conducting research, those that will use the research and any other parties that you will come into contact over the course of your research (MMU 2024).

Whilst progressing through this process the Ethical Guidelines for Educational Research published by the British Educational Research Association were also consulted (BERA, 2018). From the guidelines five key areas were considered and the risks and mitigations are detailed in the table below. For additional information such as consent forms and participant information sheets please see Appendix Four.

Table 0.3. Ethical considerations

Guidelines	
"Responsibilities to participants	**Focus group** participants will be able to reflect on and withdraw their participation for 6 calendar months following the focus group
	If a participant requests to withdraw their data, then all transcribed material will be omitted from the record and not included in the final submission of the thesis. A new thematic analysis will be completed with the new omissions and subsequent tool development will be repeated.
	Participants will be assigned a participant ID. Names and contact details of focus group participants will be deleted from records once the analysis section is complete and only the anonymous participant identification number will be recorded unless the participant has explicitly expressed that they would like to be kept informed of the progress of the study.
	Survey participants can withdraw their consent to participate for 6 calendar months following submission of the completed survey. They will be provided with their anonymous participant identification number which they can quote to withdraw their record.
	For online participants no identifiable personal data is collected e.g. Name, contact details. IP data collected automatically by Qualtrics is not exported and stored.
	All data will be stored electronically in a secure location. Anti-virus software will be installed on all devices that are used to access the data. The data storage accounts will be protected by a secure password and username.
	Mental Health – due to dealing with workplace wellbeing and issues around mental health participants are signposted to organisations who can support them. They are also (during focus group and interviews) informed that they can leave at any time or take a break if needed. The researcher will terminate the interview/focus group if deemed appropriate to protect the participant from distress or harm.
Responsibilities to sponsors, clients and stakeholders in research	This research is not conducted in partnership with a commercial organisation.
	This research is being conducted as part of a fully funded PhD from the Centre for Decent Work and productivity. Therefore,

	official acknowledgements of this will be made in the final thesis submission. The researcher will adhere to the Ethos principles of MMU and conduct all research in line with the data protection and security policies.
Responsibilities to the community of educational researchers	Research findings will be shared regularly with the supervision team to allow for reflection and guidance. Advice will be taken regarding the most robust methods and approaches to use. Plagiarism will not occur.
Responsibilities for publication and dissemination	This research is being conducted by one principal researcher. This research will not be published in its entirety until it has reached the threshold deemed by examiners to be of pass standard at which point it will be entered into an online depository to allow others to access. Future publications if they arise will acknowledge all those involved in the preparation and submission of them.
Responsibilities for researchers' wellbeing and development"	An ethics checklist, risk assessment and insurance are gained before embarking upon active research. Due to the sensitive topic of workplace wellbeing participants are signposted to organisations who can support them if needed.

(BERA, 2018, pg. 5)

The Ethos process with MMU for this research was followed and the submission for ethical approval was successful.

4.07 Reflexivity

Reflexivity is the process of understanding and trying to address the question "what is the research process and how am I influencing it?" (Lazard and McAvoy 2020, p. 177). The concept of my research came from an advertisement for a funded PhD. about 'good work'. I read the Taylor Report and wondered why this had not been applied to teachers. My research involved the work of secondary teachers in England. I was a secondary teacher in England from 2009-2018 and therefore, it was important that as a researcher I identified and explored how my own experiences and biases could inform and shape the objectives, methods and findings of the research. I could not withdraw my own experiences from this study, I had a wealth of professional knowledge and experience that could help interpret findings. A statement by Day (2013) summarised my position perfectly 'But the teacher I

was is not the teacher I am. I, like most people, have been affected by a host of people' (Day, 2013).

When deciding how to approach reflexivity for this thesis, a guide produced by Olmos-Vega et al. (2022) explained that is not merely stating ones professional or personal background, but considerations to personal, interpersonal, methodological and contextual biases that must be addressed. Their guide built on the work of Walsh (2003) who detailed that reflexivity was integral to the phenomenological focus of lived experiences. Walsh (2003) stated that four different perspectives should be considered by the researcher. These perspectives are explored in detail below.

Reflexivity Focus

Personal

I was the principal researcher for this thesis which was conducted as part of my PhD with MMU Business School. When considering the proposal for this research I thought back to my time in teaching, and how 'good work' applied to the profession. Over my 9-year career I had my own experiences with working hours, workload, burnout, behaviour, performative culture and relationships with colleagues. I also witnessed many colleagues (including myself) leave the profession. Therefore, the idea of access to 'good work' and how this could impact on teachers' wellbeing, and its relationship with productivity led my thought processes when first devising the research. However, just because I had experiences poor wellbeing whilst being a teacher this did not mean that participants necessarily would have, that was my own truth, not theirs. This was important for the methodology.

When designing the study, and the objectives, it was important to keep it exploratory so that my own biases were not providing a basis that would steer results one way or another. However, my own professional experience was present in the study and these biases are discussed in the interpersonal, methodological and contextual reflections following. Biases are not a weakness of research, if they are acknowledged and methodological mitigations are put in place then research is still valid.

Interpersonal

Participants in this study were teachers from across England. My access to teachers was improved by me having been in the profession and still having contacts who could share the recruitment information via their own professional networks. I also knew which organisations I could reach out to for example the National Union of Teachers and School of Education at MMU. This direct link to teachers was evident in the sampling with more teachers coming from the northwest during the focus groups and interviews as well as in the nationwide survey. Access to teachers was more challenging that I thought it would be – largely due to the global pandemic, but I was also aware that by participating in my study they were also adding to their own workload. I was conscious of this when designing the interviews and focus groups and the nationwide survey.

Having been a teacher, and letting participants know at the start of the interviews and focus groups that I had been, allowed for them to be able to speak with professional language and include terms that were specific to the profession e.g. learning walks, book scrutiny, enrichment, NQT. I found it challenging at times not to openly agree with participants when they were expressing their truth that I found was relevant to my own lived experiences. However, due to following the framework which I sought and outlined in my methodology,

I remained neutral and gave indications that I was listening and would like them to continue. Some of the statements made by teachers also had an impact on myself due to them returning me to the same instances that impacted my wellbeing when I was teaching. I reflected on these following conversations by listening to the recordings and inspecting the notes I made in my diary. By stopping to acknowledge my own experiences that were similar, I was able to then isolate these from what the participants were saying in terms of their own truth and deal with their accounts as stated. My reflections on their experiences also allowed me to recognise, as the focus groups and interviews continued, instances of shared truths more readily to remain as neutral as possible throughout the sessions.

By understanding the staff structure of a school setting, I was able to allow space for all participants to speak. For example, where an NQT was present amongst more experienced teachers I was able to ensure that they felt safe and comfortable by bringing them into conversations. However, I found that teachers in all focus groups were generally supportive of each other and there was much agreement with each other in their lived experiences.

Methodological

I acknowledge that I am a well-trained scientist – therefore I normally deal in quantitative measures. I have completed a BSc, PGCE, MSc and am familiar with statistics. To step outside of this realm and venture into qualitative research was novel to me. Pragmatism, at this point was paramount. To seek the answers, you must choose the best available option(s). Phenomenology - the true lived experiences of those (secondary school teachers in England) was the clearest path, which married with a post-positivist approach in later stages – as outlined in my methodology. I could not answer my questions by choosing one path, therefore, the only option was to choose pragmatism and mixed methods. This

approach required me to step outside of my normal theoretical constructs and develop new skills.

Designing my focus groups and interviews I was fortunate to be led by a wealth of literature - the framework of which I give later. I could not remove my bias, I could not remove that I had been a teacher living in their world, but I could approach their responses in a systematic and coherent way. This is clearly laid out in the way in which Stage One is represented. Having been a teacher allowed me to think about the comfort of participants. For example, how long each interview and focus group lasted and how many questions were included in the survey.

In the final stage of this thesis, it moved to statistical analysis. As a previous physics teacher and having achieved a BSc and MSc, it was important to include interpretations of data, incorporating findings from the qualitative stages, not just from the statistical analyses. I also ensured that positive relationships were explored in the data and then used literature to provide an understanding for these positive relationships. My own experiences of poor wellbeing whilst a teacher could have meant that data to the contrary was ignored or not reported upon, however, this was not the case.

Contextual

The original design for this study would have been speaking with teachers, in person, around England. However, due to the global pandemic that was not possible. At the time I did ponder as to how the context would have played a role in the findings, however, the findings of this study were in line (in terms of teacher stress etc) with those before and following.

Politically, this study took place during a secure parliamentary term, changes could not be made and the new curriculum introductions by Michael Gove had already taken place. Therefore, teachers in England in 2020 were still operating under the same curriculum of the current day. The political environment was relatively like 2018 when I left teaching, and the curriculum had not changed. However, my own experiences from the period of reform prior to leaving teaching were important to acknowledge following each focus group and interview and the transcripts examined for where my own bias towards the education system could have been present. By designing the semi structured interviews and following a framework, my political position was minimised in interactions with participants.

4.08 Review of Focus Groups and Interviews

Five sessions were held in total during July 2020. These sessions consisted of three focus groups with three participants in each, and three 1:1 interviews. Each interview or focus group was kept within the one-hour maximum time limit and the details are displayed below in table 1.0.

Table 1.0: Overview of sessions with location, length of time and transcription length

Participants	Location	Length (min)	Transcript pages
Margaret, Bella, Claire	Zoom	57:27	16
Karl, Emily, Mo	Zoom	58:45	12
Rosie	Zoom	40:21	11
Paul	Zoom	48:37	12
Jim	Zoom	39:13	12

Focus Group One - Margaret, Bella and Claire

The overall mood of the transcript was thoughtful and engaged. The participants had a reflective discussion about the complex topic of teacher productivity and wellbeing. They shared experiences and perspectives openly while also listening respectfully to each other. They articulated their view that productivity meant being efficient and getting things done.

The positive impact of having their own classroom on their wellbeing was discussed, and they expressed the feeling of productivity when completing lesson planning for the following week. The tasks they considered productive, such as meeting with colleagues and mentoring other teachers, were highlighted. They also reflected on how moving between classrooms had negatively impacted their wellbeing as new teachers, emphasising the positive influence of having their own classroom. Factors like temperature were noted as affecting wellbeing. Feeling productive when all tasks were completed, including those as a Newly Qualified Teacher (NQT), was a shared sentiment. An example was provided of how a leader's management style had negatively impacted others' wellbeing at their school. The importance of supportive leadership for teacher wellbeing was underscored, and examples were given of when they felt a colleague was productive or unproductive in comparison. They also explored how department leadership could negatively impact wellbeing if ideas were dismissed.

Focus Group two - Karl, Emily & Mo

The overall mood of the transcript was thoughtful and engaged as the participants delved into an in-depth discussion about various topics, including productivity, wellbeing, work-life balance, and relationships with colleagues. While some participants shared negative experiences, particularly regarding challenges with the physical school environment and issues stemming from leadership changes, the tone remained professional. The participants constructively explored these issues, articulating their view that productivity in education involves elements such as lesson planning, assessment criteria, and meeting student learning goals and/or targets. Specific challenges with the physical school environment, such as a lack of equipment and a "no sitting" policy for staff, were

highlighted. The impact of leadership changes at their current school on staff trust and wellbeing was discussed. The importance of maintaining work-life balance, engaging in hobbies, and taking firm non-negotiable breaks, such as half terms away, was emphasised. Differences in relationships and teamwork between their current and previous schools were noted, with some participants expressing feeling restricted by a "sterile" classroom environment without personalisation in their previous school. The impact of leadership that focused too much on day-to-day issues rather than strategic planning was explored. Participants expressed appreciation for a school culture that trusts teachers to take risks, make mistakes, and learn from experience. They also discussed workload management, noting improvements at their current school that reduced hours spent while maintaining quality. The importance of supportive colleagues, both physically nearby and within a department or faculty, was underscored. Potential issues with "cliques," "bullying," and a lack of trust that can develop between staff were acknowledged as challenges within the professional landscape.

Interview One – Rosie

The mood was thoughtful yet somewhat stressed or frustrated at times. Rosie delved into challenges such as a heavy workload, lack of work-life balance, and initiatives that added stress without clear benefits. Despite these obstacles, there were positive mentions of supportive colleagues and leadership, creating a mixed emotional atmosphere with both optimistic and weary elements. Rosie shared her experience and background as an English teacher, providing insights into her understanding of the term "productivity" and how it is applied in an educational setting. She discussed tasks she considered productive or unproductive in her role and highlighted factors that affected her sense of productivity, including the process of marking student work. The impact of the physical environment,

leadership, work-life balance, relationships with colleagues, and communication on wellbeing was also explored. Initiatives such as lesson observations and department reviews were mentioned as sources of added stress, contributing to the nuanced and varied mood of the discussion.

Interview Two – Paul

The mood was positive and open as Paul shared insights into his experience and role as a music teacher. He discussed his views on productivity, both in general terms and specifically within an educational setting. Factors that positively and negatively impacted teacher wellbeing, including workload, relationships with colleagues, leadership, and work-life balance, were explored. Challenges faced by creative subjects like music in schools were addressed, shedding light on the unique difficulties within this subject context. Additionally, he provided perspectives on measuring teacher and student performance/progress, contributing to a comprehensive discussion on various facets of the teaching profession.

Interview Three – Jim

The overall mood was one of frustration and concern as Jim expressed dissatisfaction with various aspects of their school and leadership. They voiced frustration regarding a lack of communication, unclear expectations around workload and work-life balance, and the perceived shortcomings of performance management processes. Despite these grievances, there was a genuine concern evident in their discussion about issues such as teacher wellbeing, relationships between colleagues, and supporting students. While negativity was expressed in critiquing certain policies and practices, Jim appeared to have the best interests of both teachers and students at heart, reflecting a complex mix of frustration and a genuine commitment to fostering a positive and supportive educational environment.

4.09 Data Analysis

Transcripts from the focus group and interview sessions were imported to Otter.ai a transcription software platform. They were imported into NVivo 12 allowing for manual coding, organising, analysis and the production of visualisations of the data. NVivo is a technology referred to as 'computer-assisted qualitative data analysis software (CAQDAS) which is widely used to support qualitative analysis and mixed methods research. It is considered a valuable tool in mixed methods research and is used within many academic disciplines including education (Vignato et al., 2022; Davidson, 2018). The use of NVivo as part of a phenomenological mixed methods research project using thematic analysis has been used extensively in previous research which involved those in the education and business sector as well as in studies to do with wellbeing (Jan, 2020; Khor, 2017; Zhou et al., 2022; Ebadijalal and Moradkhani, 2022) which allows the methodological design of this thesis to draw on the experience of others.

Using NVivo but employing manual coding instead of using automatic coding functions allowed the creation of original theory from the data whilst facilitating an accurate and transparent process. It is said that using NVivo can help produce a reliable and generalised overview of data (Morison and Moir, 1998; L. Richards and Richards, 1991; Vignato et al., 2022). As using NVivo is quicker than paper and pen methods, it allowed the opportunity to generate more codes from data to help inform the themes that were ultimately produced and also produce visual representations of data to help establish relationships between codes to build themes (Welsh, 2002; Vignato et al., 2022).

Thematic analysis was used to analyse each transcript. Thematic analysis allowed the identification of themes and relationships in data by coding orthographic transcripts. Thematic analysis sits well with the pragmatic design of this research as it is a method rather than a methodology and allows for flexibility which is what is said to be needed in research areas such as teaching and learning (Maguire and Delahunt, 2017). It has previously been the chosen methods within educational research with a phenomenological philosophy (Chang and Wang, 2021). Thematic analysis also offers some degree of transferability, allowing my research to contribute to what is already known about productivity within teaching and teacher wellbeing (Sundler et al., 2019). As this thesis is transdisciplinary and is contributing to practice as well as academia thematic analysis is considered a very useful qualitative approach (Braun and Clarke, 2014).

Thematic analysis as an analytical tool allows for more than just presenting data, it is about absorbing, digesting and then interpreting it to allow a wider audience to gain an understanding regarding the phenomena (Maguire and Delahunt, 2017; Jugder, 2016). The framework used to analyse data was based around that of Braun and Clarke (2006) and of Boyatzis (1998). Data were explored and interpreted from two perspectives; the first being the inductive perspective so that codes within data were identified, the second by revisiting the questions the study was posing and determining if the themes formed offered the necessary information to answer them. The two processes of Braun and Clarke and Boyatzis were merged as the stages suggested by Braun and Clarke did not account for the initial phase of recording the data where the researcher first experiences the participants detailing what the phenomena means to them, however, except for the additional stage one it was mainly the process of Braun of Clarke (2006) that formed the method in data

analysis. By merging Braun and Clarke and Boyatzis, the following six stage process was followed.

1. Seeing, in this case observing and recording what was said through audio recordings of focus group meetings and interviews
2. Familiarisation. Re-reading the transcripts, noting down initial thoughts, codes and relationships
3. Examining the data. Generating codes and grouping them to form a thematic map
4. Further analysis of the data. Identifying new relationships between codes or removal of codes altogether. Naming of the themes to provide some insight.
5. Reviewing the analysis. Going back to the research questions and reflecting on the insights gained through the analysis.
6. Production of the report. A detailed discussion of the findings from the analysis

Step One - familiarisation

The process of familiarising oneself with the data is an iterative journey, involving the immersion in the dataset (Braun and Clarke, 2022). This step commenced during the virtual 1:1 interviews and focus groups, where the participants were actively engaged with the discussions between themselves or with the host. Throughout these sessions, ideas and potential codes were recorded for later reflection, aligning with Braun and Clarke's (2022) recommendation. To become familiar with the material, the immersive approach meant the reading and rereading of transcripts, complemented by the careful review of interview and focus group audio recordings. This process not only facilitated an understanding of the data but also served as an opportunity to enhance the accuracy of the interview transcripts. Following Wertz's (1983) guidance on reading the transcripts multiple times for better comprehension, each of the five transcripts underwent thorough examination on at least three occasions as complete documents, with specific sections revisited extensively. Once all transcripts were meticulously edited and formatted, they were imported into NVivo in preparation for the coding phase.

Step Two – examination

Once transcripts had been imported to NVivo 12 initial codes were generated, with 'codes' in this context being defined by Braun and Clarke (2022) as entities that "*capture meaning relevant to the research question*" (pp.52). Transcripts were manually read and each new code created by hand rather than using an automatic function provided by the software. Following Braun and Clarke's (2006) recommendation to code potential themes during this phase, large sections of a participant's response were coded where necessary to maintain contextual understanding as snippets of a statement may have lost the essence of what was being said. Although participants would often provide explicit explanations of their lived experiences, there were some instances where the words chosen did not convey the meaning and therefore the code. For example, when asking about what productivity meant to them in their working life and/or school, they would often talk about students but rarely themselves, even though the question was asking what productivity meant in their everyday job role and therefore a code such as 'confusion around the term productivity' was created. The coding process was not linear, whilst working through the five transcripts new codes emerged after the analysis of each focus group until the second interview, prompting a revisit to the earlier transcripts each time to incorporate these novel codes.

Step Three – further analysis

Following a methodical process of data coding, the subsequent stage involved organising the codes into categories. To illustrate, in response to question one, 21 codes were grouped into five distinct categories. This categorisation facilitated the identification of similarities within the data. Utilising NVivo, cluster diagrams were generated to provide a visual analysis of the relationships amongst the codes, allowing for a comprehensive understanding of their interconnections.

Step Four – reviewing the analysis

In the concluding phase, a thorough review of the content within each category was undertaken to shape the development of themes. This process aimed to fine-tune the content of each theme and culminate in the creation of a concise thematic map for the analysed question. Braun and Clarke (2022) characterise this step ongoing refinement to allow for further development of the identified themes. As an illustration, when addressing question three, which explored factors contributing to a sense of productivity, an initial set of 34 codes was generated in stage one. Through successive refinement, these codes were ultimately contained into six cohesive themes.

Step Five – reporting the results

The conclusive phase of Braun and Clarke's (2006; 2014; 2022) process entails crafting the thematic analysis report. This stage requires constructing a narrative that guides the reader while substantiating the analytical claims derived from the research (Braun and Clarke, 2022). Within this chapter, the outcomes corresponding to each question posed to participants are presented. To enhance the overall trustworthiness of the findings of this stage of the thesis, a detailed, step-by-step walkthrough of the analysis for each question is included. Through the analysis and ensuing discussions, the research aims and questions are addressed.

4.10 Trustworthiness

Achieving trustworthiness in qualitative research employing thematic analysis is paramount to ensuring the credibility and reliability of the study's findings (Boyatzis, 1998; Braun and Clarke, 2006; King and Brooks, 2018; Sundler et al., 2019). Trustworthiness refers

to the extent to which the research accurately represents the experiences and perspectives of the participants. Several strategies contribute to this trustworthiness.

Firstly, establishing credibility involves conducting the analysis rigorously, thoroughly immersing oneself in the data, and employing a systematic approach. This can be achieved through triangulation, involving multiple researchers, data sources, or methods to validate findings. The process of using the findings of stage one to develop empirical indicators to construct a tool, which will then undergo multiple tests for reliability and validity gives credibility to any results reported following analysis of the transcripts. Furthermore, if the results reported are supported in literature where similar themes, thoughts or concepts have been expressed this will increase the credibility of the way in which the research was conducted.

Dependability is upheld by maintaining a clear and transparent audit trail, documenting decisions and steps taken throughout the analysis process. Each step of the analysis is outlined in this thesis as well as the rationale for the selection of the approaches as part of the discussion of pragmatism.

Transferability refers to the potential for findings to be applied from one case to another (Tobin and Begley, 2004). However, it is not possible to predict where the findings may be applied in the future and therefore rich and detailed descriptions should be provided (Lincoln and Guba, 1985). By providing thick descriptions, others can assess the transferability of the findings to their own settings. For example, the discussion that surrounds what this sample of secondary of teachers considered to be productive could be

used by a future researcher on their own sample or with primary school teachers. By including representative quotes from participants when discussing phenomena others could judge if the findings concluded from this research are applicable to their own setting and research.

Confirmability is addressed by acknowledging and minimising the influence of researchers' biases (Tobin and Begley, 2004), ensuring that interpretations are grounded in the data rather than preconceived notions. Throughout this thesis reasons for all choices, be those to do with methodology, or analytical processes, have been clearly outlined and the rationale for each provided. By doing this, others reviewing the findings can understand the pragmatic philosophical reasoning behind each step. Where bias could have been present, preventative measures have been taken, or where not possible to do so in a truly effective manner there are clear acknowledgments of bias presence.

Through the measures discussed above, thematic analysis can attain a high level of trustworthiness, reinforcing the validity and reliability of the identified themes and interpretations.

4.11 Question One: If you think of the term productivity in the wider world, what does it mean?

The focus groups and interviews all began with this question. This was to allow the participants to start thinking about productivity in general terms. Without uncovering what they already believed 'productivity' to be, we could not go on to explore what productivity looked and felt like to them in their role as a teacher and the new definition for productivity of teachers could not be devised.

Thematic analysis of the five transcripts for this question resulted in one theme of **'neoliberalistic ideas of productivity'.**

The first step involved meticulously reading each sentence spoke by the participants and assigning it a code. For example, *'So I tend to associate productivity with physical products'* stated by Margaret was coded for as 'physical or tangible product'. Through continued reading of the transcripts, new comments were added to codes already created or new ones generated that were distinct from the others.

The first step of reading through the transcripts identified 21 codes, and these demonstrated that participants were able to articulate what the term productivity in the wider world represented to them. An initial theme already formulating from this stage was that productivity was related to industry and involved producing a physical product.   This theme was already being formulated due to four out of the five transcripts referencing that productivity was about 'being efficient', 'completing tasks' and 'creating a tangible product'.

> *"So I tend to associate productivity with physical products"*
>
> (Margaret)
>
> *"…springs to mind for me is sort of manufacturing."*
>
> (Bella)
>
> *"…suppose, you know, you put in some work in and what comes out of that."*
>
> (Jim)

Step Two - examination

To allow for a deeper examination of codes that had already been generated an NVivo cluster analysis was generated and visually analysed. The cluster analysis which displays interconnections visually allowed identification of where the different codes might be

linked. This also allowed, importantly, to see where codes were on separate branches demonstrating that these codes could be part of a distinct theme.

Figure 2.0: NVivo Cluster Analysis by word 'What is productivity in wider world' tree diagram
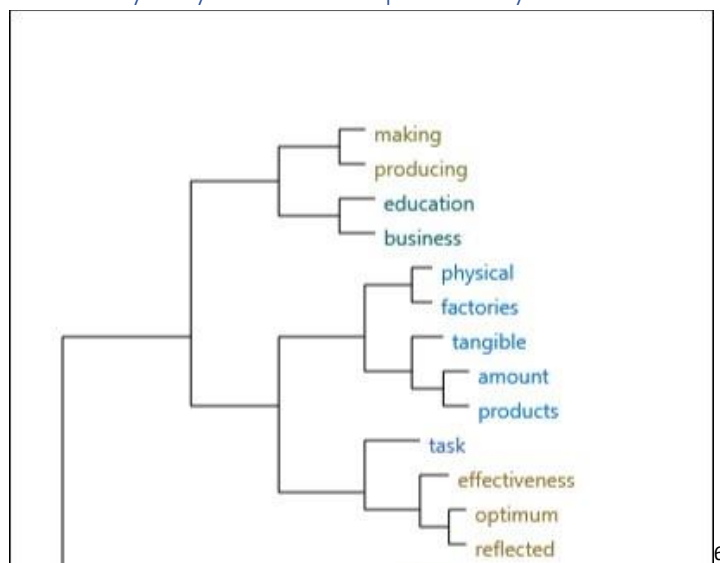
The cluster analysis allowed the identification of five new codes which the pre-existing codes could be contained within; being efficient, completion of tasks, related to effectiveness, business related, manufacturing and physical or tangible product. For example, the ideas teachers had with terms such as measurable, factories, physical and creating located on the same branch are clearly related to industry and the production of something quantifiable be that an object or service (see figure 2.0). Being efficient or effective was mentioned specifically by three out of the nine participants.

> *"…you are getting things done in an efficient manner"*
>
> (Bella)
>
> *"Yeah, I tend to associate it with efficiency as well"*
>
> (Claire)
>
> *"Well, I mean, the first thing that springs to mind is is kind of effectiveness"*
>
> (Paul)

---

[6] Colours represented in the cluster analysis are due to the output style of Nvivo which applies a separate colour to each branch and/or sub-branch.

The cluster analysis also showed that phrases such as 'task' and 'optimum' were on the same branch. This prompted theme generation which started to combine different codes that could be arched under the same theme. For example, 'being efficient' and 'completion of tasks' was re-coded into 'economic idea of productivity' to fit with the notion of input versus output (Krugman, 1994).

Step Three – Further analysis

To produce a meaningful visualisation in this format the word cloud diagram was limited to 25 words with three or more characters including stemmed words. 'Amount', 'physical, 'products', 'efficiency' being so prominent in the word cloud supported the different branches of the cluster analysis in figure 2.0.

Figure 3.0: Word cloud diagram generated by NVivo – What productivity means in the wider world

Step Four – reviewing the analysis

By using the original codes, the cluster analysis and the word cloud the final theme for what productivity means to secondary teachers in England was formed this being '**neoliberalistic ideas of productivity**'. This was due to the responses of the participants demonstrating that they believed, in their lived experience, that productivity was a 'measurable quantity'.

However, this overarching theme that combined all the accounts from participants could be broken down into three sub-themes to show the different components of their thinking. These were:

- Sub-theme one: Economic ideas of productivity
    - Being efficient
    - Completion of tasks
    - Related to effectiveness
- Sub theme two: Productivity is related to industry
    - Business related
    - manufacturing
- Sub theme three: Productivity results in a physical or measurable product
    - Physical or tangible product

Now that participants had identified what productivity meant to them it allowed for the discussions to move on to how it applied to a school setting, or even if they thought that it did.

4.12 Question Two: If you think of the term productivity in a school setting, what does it mean?

This question was much more challenging for the teachers to answer across all focus groups and interviews. Whereas, when discussing the general meaning of productivity, the discussions and responses were quick and to the point, for most of the participants this question made them take a step back and consider their answers. There was a general feeling of confusion and a lack of understanding or prior experience of how it applied to them. They also, in many sessions, felt that the term 'productivity' related more to their students than to them. The atmosphere of the sessions also seemed to change and the term 'productivity' when being applied to a school setting seemed to take on negative connotations which were not apparent in responses from the first question. Ultimately, after 4 stages of coding and analysis one main theme was designed upon which

represented the various coded responses; this being **'productivity is not quantifiable within a secondary school setting'**.

Step One – familiarisation

The first round identified 20 separate codes which were then combined into 9. During the first two steps of coding, participants had repeatedly responded that the term 'productivity' was unfamiliar in terms of teachers but, where it was used, was used in terms of student productivity. Other codes arose from teachers actively rejecting the idea of 'productivity' in terms of their job, explaining that what they produced was not quantifiable.

> *"I do not think it's ever been; productivity itself has never been specifically mentioned"*
>
> (Margaret)

> *"Umm to be to be brutally honest, we do not really talk about productivity"*
>
> (Rosie)

> *"…the onus is on the teacher to be able to allow the students to be productive"*
>
> (Karl)

Step Two – examination

An NVivo cluster analysis diagram was generated. Upon analysis of this it was possible to interpret from the responses that teachers in this study were unable to succinctly say what productivity meant to them and their everyday job role– this highlighted the difference in responses between question one and question two, whereas in question one they could say what productivity meant in the wider world, when this was focused on them, this became much tougher. This also posed a problem for this research as for teachers in the next phase of the research to report their perceived feelings of productivity against empirical indicators they needed to have a definition to decide against.

The cluster diagram (see figure 4.0) demonstrated how participants thought about productivity in terms of their job role. The cluster analysis displayed child/student and teacher on two separate branches which provides a visual demonstration of the separation teachers experience in their ideas; that they do not consider productivity to relate to them but to their students in terms of grades they achieve in exams. The main lower branch also had a large degree of separation between teachers themselves and the students, reflecting that they do not feel student productivity is necessarily a reflection of their own. Student attainment is also grouped with the students with no link to the teachers, this is supported by comments that were made in the transcripts.

> *"the onus is on the teacher to be able to allow the students to be productive"*
>
> (Karl)

> *"So a lot of the words will be based on kind of results focused stuff that then implies a certain degree of productivity."*
>
> (Paul)

Figure 4.0: NVivo Cluster Analysis by word frequency – what productivity means to secondary school teachers in the wider world and a school setting
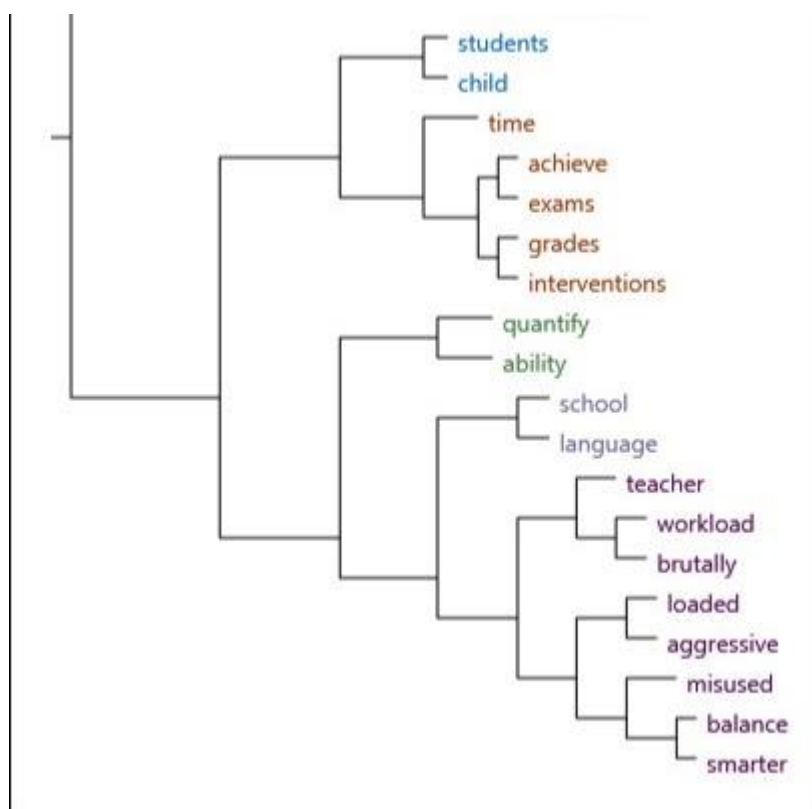
One other area of interest is that where the teacher was mentioned, the focus is on the language of productivity and this being of negative connotations; 'loaded' and 'aggressive' all having a relationship with each other. In fact, Margaret commented that when the term productivity has been used *"it was a more kind of aggressive take on what you should and should not be doing."*

Step Three – further analysis

The word diagram (figure 5.0) places workload at the centre – this links to the economic idea of productivity that teachers had referred to in question one.

Figure 5.0: Word cloud diagram generated by NVivo – What productivity means in a school setting
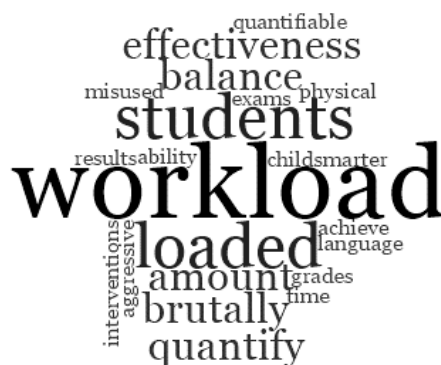
What is then interesting is that 'loaded' and 'amount' feature quite distinctly. These terms were referred to when discussing workload, but the participants did not feel that their workload reflected their productivity in fact Rosie stated, *"workload and productivity are two completely different things"*. From the word cloud you could determine that teacher productivity is about workload and students' attainment, but by also considering the cluster analysis these two things are not necessarily seen as being linked – that being, that the teacher does not believe that their productivity is solely based upon student attainment. This reinforced that teachers, from analysis of the transcripts, did not have a clearly defined idea of their own productivity. A question that arose from this was if teacher productivity is not (believed by them) to be explicitly linked to student attainment, what

else could it consist of? What other areas of a teachers everyday working life and pattern would contribute to their productivity? Further analysis of questions three and four were able to provide some insights into this which are reported on later. From the initial 20 codes devised as part of stage one, ten now existed following refinement. These being:

- Language does not mean the same thing
- Misuse of the term productivity
- Productivity relates to work life balance
- Productivity relates to workload
- Productivity seen as negative or aggressive
- Productivity relates to students not teachers
- Results of students
- Teaching does not fit economic model
- Productivity is subject and teacher dependent

Step Four – reviewing the analysis

From the initial 20 codes, five themes were generated that were able to capture the essence of the different codes. Reviewing of these, and their content led to the final, overarching theme of '**productivity is not quantifiable in a secondary school setting'**.

Thematic mapping, in the form of a tree diagram, now allowed a total visual representation of questions one and two to be produced to demonstrate what teachers felt productivity meant to them in the wider world, and in terms of their everyday job role (see figure 6.0).

Figure 6.0: NVivo Generated Tree Diagram for what productivity means to secondary school teachers in the wider world and a secondary school setting
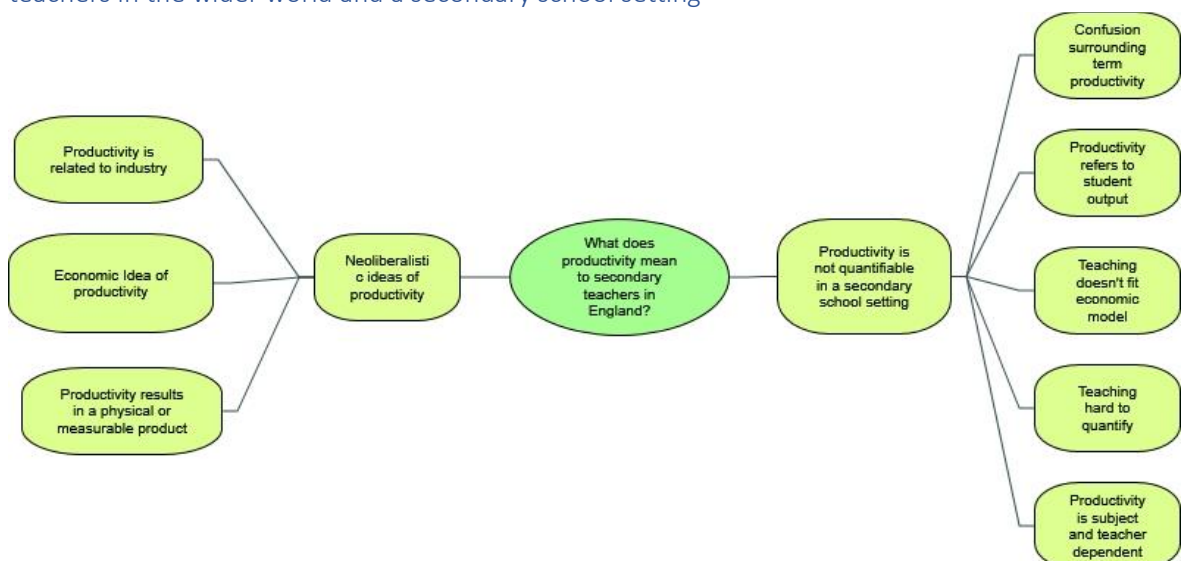
4.13 Question Three: In terms of your work as a teacher, your job, what actions/tasks etc. make you feel productive?

Teachers in this study, although not able to define productivity in terms of a school setting, could describe and give accounts for what made them *feel* productive in their role. By reflecting on their day-to-day work life, they could articulately give accounts of tasks, duties and/or responsibilities they carried out which they felt were productive, which included at time how much or how often they were able to complete a task or fulfil a responsibility. The reflections of their everyday practice were extremely insightful and ultimately led to the development of 52 empirical indicators to form the unvalidated version of the TPAT.

Thematic analysis of this question resulted in tasks that could be categorised into six areas that the teachers in the study believed contributed to them being or of feeling productive. The different areas of their role the tasks were categorised into were;

- Communication
- Teacher related tasks
- Teacher development
- Pastoral
- Wider school and extracurricular
- Performance management

Step One – familiarisation

These initial rounds of coding resulted in 34 codes and a total of 125 references. These codes were then re-inspected, and those references and codes not directly related to tasks or actions were omitted e.g. productivity increases with experience, workload is heavy. This resulted in 33 codes but now 88 references. Teachers in this study included a variety of actions from planning lessons to reviewing behaviour:

> *"You might spend two hours planning, but then you just press that print button, you know, you can have this whole pile of stuff in front of you for what feels like the work of seconds"*

> *"…check from a form point of view I have to analyse the data has there been any increase in behaviours or changes in there."*

<div align="right">(Karl)</div>

Step Two – examination

A cluster analysis was generated to map the codes by word similarity in NVivo (see figure 7.0). By examining the cluster analysis, codes were merged, and parent codes created e.g. NQT related tasks and supporting junior colleagues was now 'supporting colleagues in their practice'. Again, the content of each code was analysed, and codes were merged, or new more accurately descriptive codes created.

Items clustered by word similarity

- Entering data
- Preparing physical environment
- Results of graded observations
- Tailoring lessons
- Productivity = sense that lesson is going well
- Productivity = sense that students are learning
- Student engagement
- Producing physical resources
- Preparing schemes of work
- Lesson planning
- Teaching related tasks
- Dealing with stakeholders
- Behaviour management
- Pastoral
- Doing form tutor tasks
- Writing reports
- Giving students life skills
- Completing actions that benefit colleagues or whole school initiatives
- Productivity = actions completed that effect someone else
- Communication
- Meeting with colleagues
- Meeting with colleagues
- Meeting with colleagues
- Tasks completed for others
- Wider school AND extra curricular
- Assessment of learners work and feedback
- Productivity = marking
- Supporting colleagues in their practice
- Teacher Development
- Dealing with stakeholders
- Duty shifts
- Ensuring own knowledge is up to date
- Planning for future years
- School clubs, trips and activities
- Performance Management
- Student attainment
- Student attainment
- Productivity = doing CPD
- Productivity = NQT related tasks
- Teaching focused or improving practice
- Writing reports

All of the tasks located on the top branch happen within or for a lesson delivered to students – therefore tasks that directly impact lessons could be grouped together. Dealing with stakeholders (taken to be students and parents or carers) was linked with behaviour management, writing reports and doing form tutor tasks. This branch was analysed to be representative of a theme of 'pastoral' tasks which are more to do with the behaviour and wellbeing of students than their academic achievement, a clearly linked branch which showed a distinctive theme. Marking and assessment were linked together showing that

marking was a necessary part of assessment. What was also very interesting was 'performance management' and 'student attainment' being on their own branch with no other codes. This supported the findings from question two where participants had repeatedly expressed that they felt the term 'productivity' related to students more than them. However, it also uncovered that to some degree, participants felt that student attainment was also a reflection and component of their own productivity.

Step Three – further analysis

As with the previous questions a word cloud was generated as an alternative visualisation of the data. The word cloud visually represented what had been discussed during the sessions and from the cluster analysis.

Figure 8.0: Word cloud diagram generated by NVivo – what feels productive

Planning and delivering lessons were central to the work of a teacher to allow learning of their students. But what also featured was 'behaviour' (dealing with, monitoring, reporting on) again taking us away from the purely quantifiable operations such as entering grades following marking. The word cloud, with such emphasis on planning and lessons showed a clear theme that participants felt they were being productive when their time was spent on tasks that were directly linked to the lessons that they delivered, and their students were learning.

"…so if I've pre prepared both sessions for the following week, then I feel quite productive"

(Claire)

"If I know that I've taught a lesson well, and the children have learned something from it"

(Mo)

"I suppose it would look like a lesson that's going really well for my students that they are learning"

(Emily)

This notion of productivity being linked to preparing for lessons is supported by the findings from the next question which asked teachers to explore what unproductivity looked and felt like – no reference was made to planning or preparing for lessons (unless for a lesson observation as part of their performance management). This stage of analysis, including visual analysis of the cluster diagram and word cloud, resulted in 26 codes being decided upon that were able to fully encompass the content of the teachers' discussions.

Step Four – reviewing the analysis

Finally, all 26 codes were placed into six themes describing their area of a teachers everyday working life. The theme that was most heavily reference by teachers was that of 'teaching related tasks' (36) which should not be surprising and demonstrates that teachers still hold teaching students and the delivery of lessons at the core of their practice, and this they deem the most productive. To provide a final review of the analysis, thematic mapping was used in the form of a tree diagram (see figure 9.0) to give an overview of all areas of a teachers practice that they felt represented them being and/or feeling productive

Figure 9.0: NVivo Generated Tree Diagram – areas of a teacher's role reported to contribute to their productivity
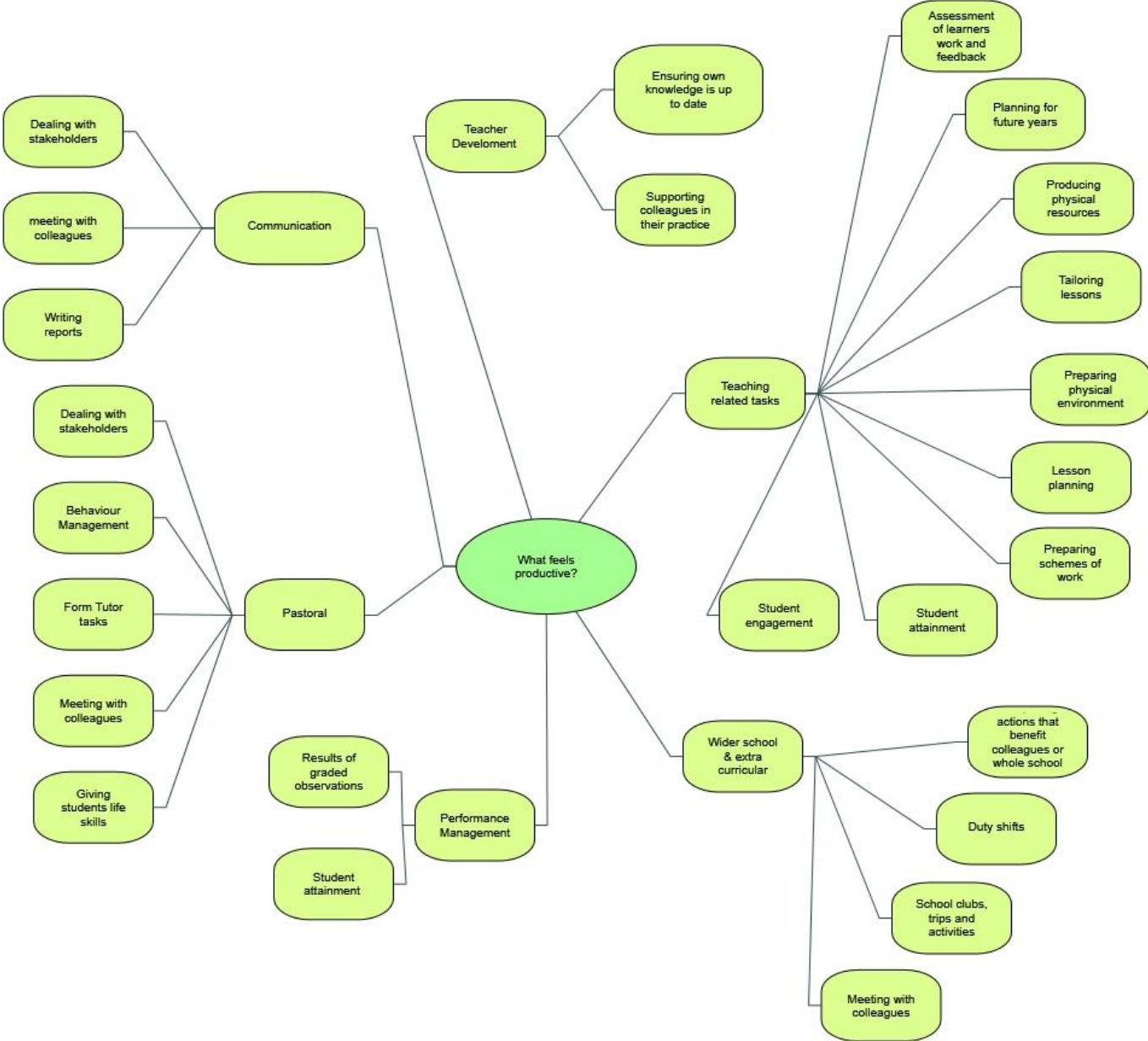
4.14 Question Four: In terms of your work as a teacher, your job, what actions/tasks etc. make you feel unproductive?

As with question three, participants were able to describe their experiences of feeling unproductive in terms of the task or responsibilities they were expected to carry out. Following the different stages of analysis five themes that represented unproductive areas of their everyday job role were created. These were:

- Teacher-related tasks
- Performance management
- Communication
- Wider school and extracurricular
- Pastoral

As with question three, the themes generated from this question were able to be used when devising the 52 empirical indicators of teacher productivity that would form the unvalidated version of the TPAT – contributing to meeting the main aim of the thesis.

Step One – familiarisation

The first phase of analysing the transcripts identified 23 codes with 103 references. However, in the second phase these were reduced as many codes did not directly relate to actions or tasks a teacher would take for example 'lack of autonomy', 'absence', 'being reactive' and 'working with others deemed unproductive'. What is worth of mention is that 'lack of autonomy' had one of the highest reference rates at 14 references across the different sessions and was included in every session that was held. Some of the highest references from the codes that remained were found in 'marking', 'whole school initiatives' and 'attending meetings'.

> *"…and then that can leave you feeling I think quite frustrated and unproductive because what you… Although you've written a lot, and what you want to produce at the end of it is you want them to actually improve their work and get better. And*

quite often, they, they're not doing that. And that's, that's frustrating and unproductive."

<div align="right">(Jim)</div>

"So I think in those situations, those kind of things that are rolled out, that are then really not followed up, or just kind of launched, someone's clearly putting a lot of time you know, but then there's not really much kind of uptake or, or, um, and it's just kind of left, I think those situations maybe aren't the most productive."

<div align="right">(Rosie</div>

"...but also I find meetings, the most unproductive use of my time"

<div align="right">(Karl)</div>

Step Two – examination

For the next phase of analysis, a cluster diagram was generated (see figure 10.0). From this analysis there was clear segregation of codes for example emails and meetings were associated with one another whilst marking, policies and words with negative connotations such as 'onerous' and 'shedloads' were related to one another. On its own branch with distinct sub-branches were tasks related to performance management such as 'appraisal', 'deep dives', 'Ofsted' and SLT[7].

"For these observations and or now deep dives and interviews and things like that. And, and I think, again, that's just it's not really about the quality of the education is just about ticking boxes for Ofsted"

<div align="right">(Jim)</div>

"But I think an awful lot of the time marking policies can be used to monitor the teachers rather than necessarily monitor the impact on the students"

<div align="right">(Mo)</div>

Communication was linked with meetings, strategy, and negative words such as 'pointless' and 'frustrating'.

"...often what may happen is I may have to cancel extracurricular opportunities for meetings sometimes, and that I do find very frustrating"

<div align="right">(Paul)</div>

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[7] SLT is an acronym of Senior Leadership Team who are often responsible (along with Heads of Department) for all performance management activities such as lesson observations, formal appraisals and judgements of teachers marking.

Figure 10.0: NVivo Cluster Analysis by word frequency – what feels unproductive
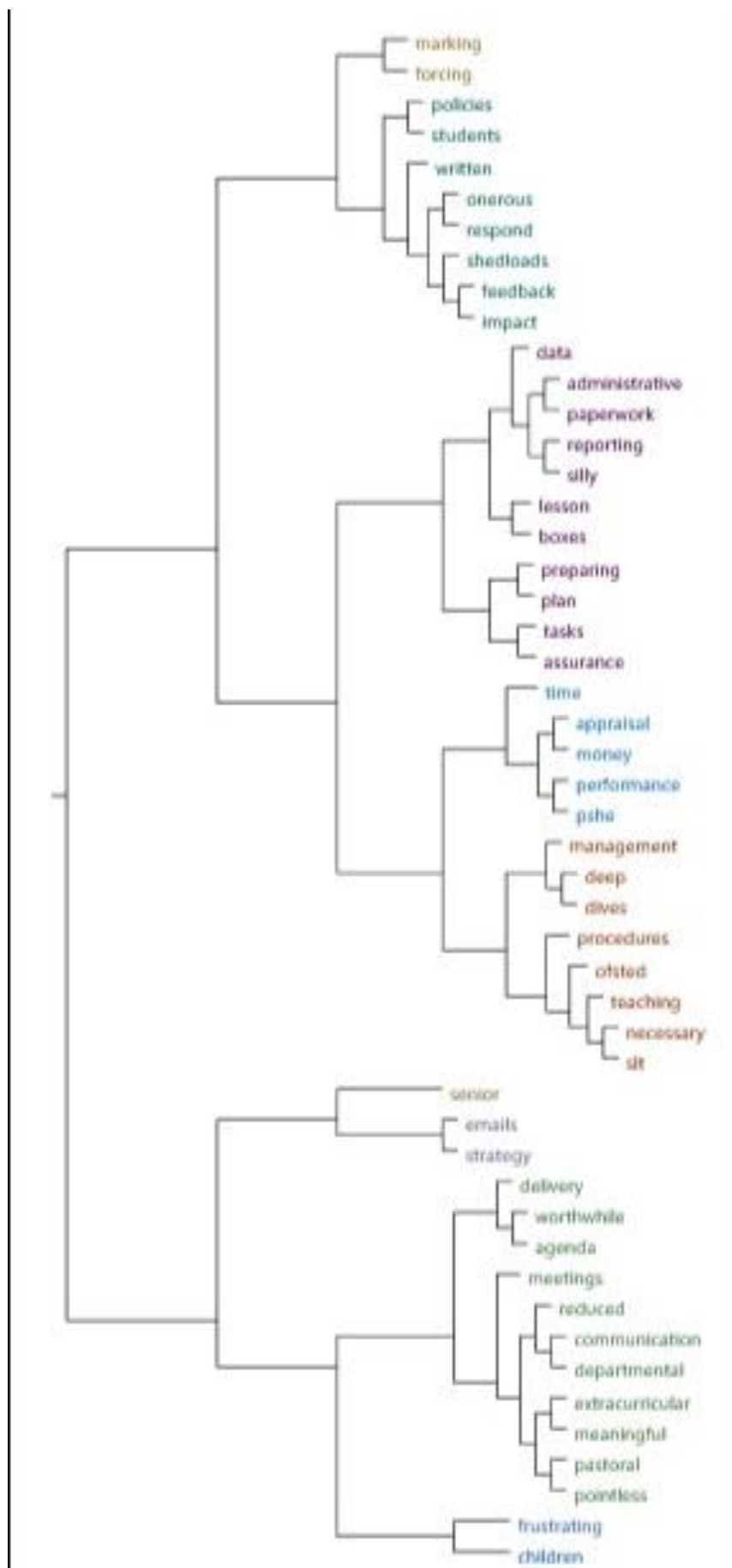
Although the same teaching related tasks such as 'preparing' and 'plan' were included like with the responses for feeling productive, this time they were linked on the same branch to 'data', 'administrative', 'performance' and 'appraisal' which could indicate that the operations surrounding lessons that are for purely performance management purposes are deemed to be unproductive.

> *"there are quite a lot of tasks that we get asked to do that you feel you're doing just for the sake of, you know, education is very data based now, is not it?"*

(Jim)

Nowhere was 'learning' featured in this cluster analysis, another important distinction from 'what feels productive' responses.

Step Three – further analysis

Moving to the next phase of analysis, what was very clear that from the cloud diagram generated was that of the feeling of a teacher's 'time' being used unproductively, was by far the most prominent word. But also referenced was 'management', 'head' and 'leadership' possibly supporting the performance management related tasks that leave teachers feeling unproductive represented in the cluster diagram.

Figure 11.0: Word cloud diagram generated by NVivo – what feels unproductive

The word 'stress' also appears in this analysis which could begin to demonstrate a relationship to the operations deemed unproductive that teachers are completing in relation to their workplace wellbeing. This can be explored following construction of the TPAT when used in comparison with the Teacher Stress Inventory to determine if 'marking' which 'stress is close to in the word cloud' is a particular cause of stress. Again 'learning' does not feature here at all, but lesson planning does, this shows that teachers feel lesson planning for the learning of their students is productive to them, but lesson planning operations linked to performance management activities do not – an important distinction.

Step Four – reviewing the analysis

There was an extra theme initially generated of 'admin tasks', however upon closer examination all the codes contained within this could be placed within either theme of performance management or behaviour management, so the distinct theme of 'admin tasks' as a representation of the everyday working life of a teacher was removed. In contrast to question three, there was no reference by any participant to teacher development. This in and of itself is interesting as it demonstrated that there were no negative connotations in relation to teachers developing their practice – those tasks were believed to be positive in terms of their productivity.

After reviewing the word cloud, cluster analysis and going back to the spoken words of the participants there were five themes generated that captured the content of the nine remaining codes. A further review was conducted by thematically mapping these in a tree diagram, displayed in figure 12.0.

The five themes were:

- Teacher-related tasks

- Performance management
- Communication
- Wider school and extracurricular
- Pastoral

Figure 12.0: NVivo Generated Tree Diagram – areas of a teacher's role reported to not contribute to their productivity
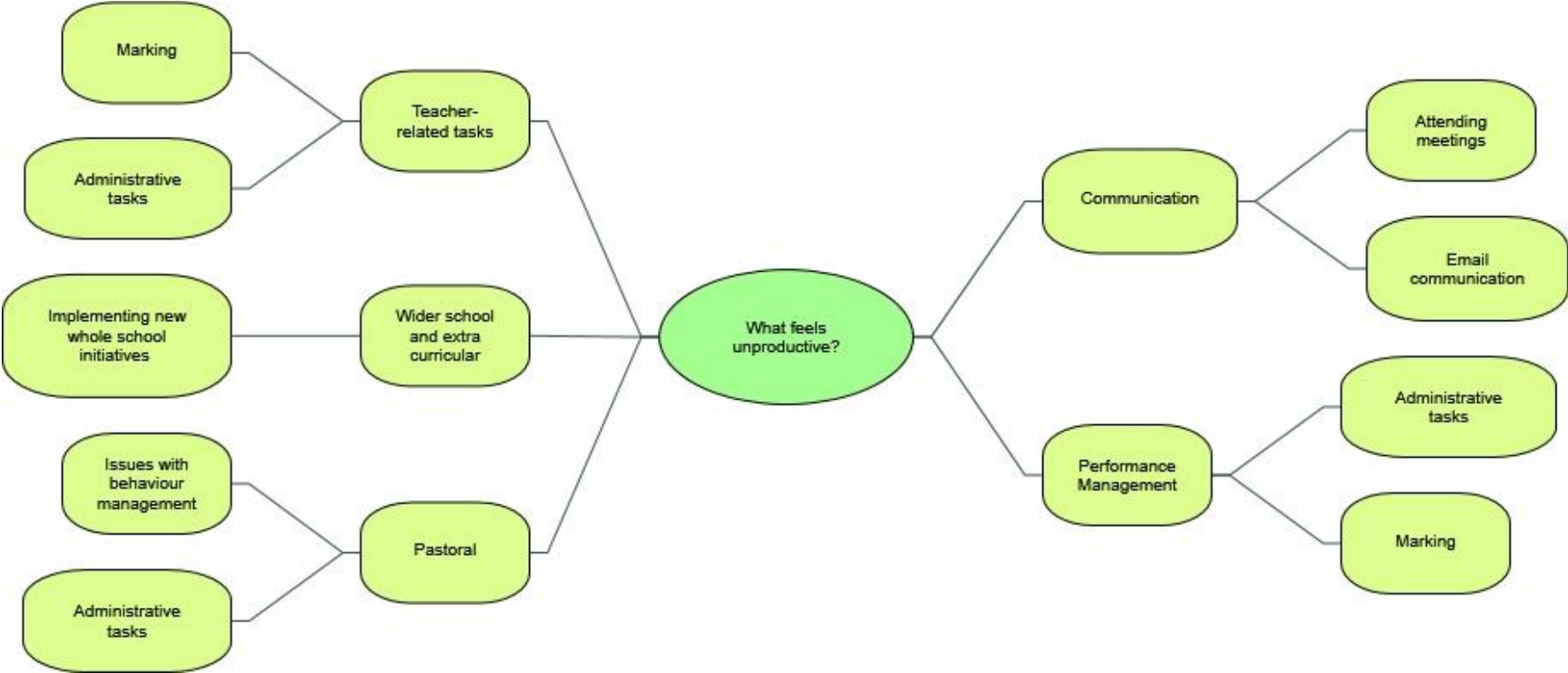
4.15 Discussion - building a definition for productivity and empirical indicators

4.16 A definition for the productivity of teachers

The first two questions analysed as part of stage one of this study set out to meet the aim:

- To provide a working definition for productivity of secondary teachers in England

And to address the question:

- What do England based secondary teachers consider as 'productivity' in terms of their everyday job role?

After conducting all stages of the thematic analysis (including looking at the wellbeing focused responses) and using previous literature it was possible to devise a working definition for the productivity of teachers (which then was broken down into empirical indicators that contribute to that).

The definition devised was:

'what a teacher does that contributes to the learning and/or enriches the lives or their students'.

This was presented to teachers in the TPAT designed later as the following to make the language more accessible:

''things you do that contribute to the learning and/or enrich the lives of your students'.

The devising of this definition is discussed below in relation to the findings previously included.

Established ideas of what constitutes teacher productivity

Firstly, to go back to the published literature to establish links with the findings of this phenomenological qualitative phase of the research for the development of the new definition, the Teaching Standards (2011) were the point of reference, where phrases such as 'inspire', 'manage behaviour' and 'safe environment' are included. As previously discussed only four of the expanded standards were linked directly to progress and outcomes. A point to make with the standards is that the word 'learning' is not included in the expanded descriptions, but one can infer that for students to make 'progress' and have desired 'outcomes' some learning must take place. With Schalock (1993) the word learning is included five times however, Schalock also includes 'services to the community'. The word 'community' is not defined but for my research I am taking this to mean the school community, wider community in which the school is placed and teaching community (in terms of practice, research, and professional development). Getange (2016) does not include the word learning and simply refers to 'duties' which could be deemed to be tasks, jobs or responsibilities. Oweye (1999) refers to 'extra-curricular activities' which were also featured in the responses of teachers taking part in this research. And finally, when looking back at the published literature the UNESCO definition includes 'enrich the lives of learners.

The literature provides a wide range of measures taken to constitute productivity, so the analysis for the questions that posed 'what feels productive' and 'what feel unproductive' was returned to establish links between what this sample of teachers responded with and what the literature says.

By far the most prominent part of what teachers constituted their role in terms of productivity to be that of 'teaching related tasks'. Tasks that contributed to what happened in their classrooms, for the benefit of their students in terms of learning.

> *"I kind of do framework in advance. So I feel productive in the week, if I've gone back to that framework, and I have adjusted it, adapted it. If each of my classes at Key Stage three have a slightly different version of the same thing, because it means that I am actually kind of listening to them and trying to make it as tailored as possible"*

> (Bella)

From Bella this included adapting to their students and tailoring what they deliver to help those students progress, as well as referring to lesson planning. However, the next two most referenced themes were that of 'pastoral' and 'wider school and extracurricular'. These are demonstrated in the quotes below.

> *"I suppose it would look like a lesson that's going really well for my students that they are learning implicitly, and I'm teaching explicitly if you get me so I'm, you know, that's what it would actually look like for me. Over that's short term over long term, what it would look like is good results, you know, in tests and end of unit exams and in final assessments and final exams, but really for me, because I'm such a, I would say I'm more of an emotional teacher than a... I do not I do not know what you call it. But I always think about where does that pupil go, like, did they go into a job? Did they go into sixth form did they leave sixth form to go to uni or an apprenticeship? You know, it's always about... What was the results of all our teaching? What was the results, you know, that's where the productivity would show for me? what have I done for you know the child or the people"*

> (Rosie)

This quote from Rosie encompassed the feelings of most participants into one statement. That in the short term it was how their lesson went, longer term the outcomes of the students in terms of grades, but on a wider scale how they contributed to that student in their life journey, what were the outcomes for their students in terms other than just grades.

"And I, you know, you know, in the school I run a lot of extracurricular groups. I do a lot of trips and and events. And at the same time, of course, there's the there's the, like, the exam results, classroom stuff, but but I mean, I, I often feel like the part of my job where I have the most impact, and is what happens outside of the classroom as well. So in terms of extracurriculars, so I think productivity for me is, I suppose when I feel like I've done enough things that I can hang on to that that I think have made some kind of impact."

(Paul)

Paul also emphasised what happened outside of the classroom as well as the more tangible outcomes of his role such as exam results. For him, the impact he had made to students in terms of their passion for music was a key part of him feeling productive.

Combining the voices of teachers and literature

By considering what the participants had included, but also published literature, a new definition which combines two existing definitions is proposed. By doing this, a more holistic definition can be provided, one that not only focuses on learning outcomes but the wider impact that a teacher believes part of their productivity is linked to. The definition derived from stage one of this thesis, and in support of meeting a research aim of it is;

'What a teacher does that contributes to the learning and/or enriches the lives or their students'.

This definition combines both the Schalock and UNESCO definitions primarily, but it is argued it also allows the transient nature of education, mentioned by Getange and Schalock, (time of year, change of classes, personal circumstances of a student, circumstances of a school) to be taken into consideration with the word 'contribution'. The 'enrich the lives of students' from UNESCO allows the wider impact of a teacher in the lives and futures of their students to be considered and with many codes being contained within

the themes of 'pastoral' and 'wider school and extra-curricular' it is considered to be an essential component of this definition.

4.17 The productive versus unproductive teacher

Questions three and four posed to teachers, and the subsequent analysis of their responses allowed the following research questions to be explored:

- What do England based secondary teachers consider as 'productivity' in terms of their everyday job role?
- Can productivity be broken down into defined tasks that teachers complete?

What does the productive and/or unproductive teacher do?

Teachers were able to clearly express what they felt made them 'feel' productive and 'unproductive' and the general ease at which they were able to discuss this was much greater than when exploring just the term 'teacher productivity' without giving it context within the functions they performed as part of their everyday job role. An overall conclusion that can be taken away from the responses of teachers in this study was that any task that was deemed to directly impact upon what happened in their classroom in relation to student learning, student relationships and their own professional development was deemed as productive by them.

There was crossover in the different themes that were present for productive versus unproductive tasks when analysed. However, importantly, there were clear distinctions that were found between these categorisations.

The theme 'teacher development' did not feature when exploring unproductive tasks for teachers. However, it was referenced on seven occasions[8] when discussing what made the teachers feel productive.

> *"It's about getting over the point where I'm being reactive, and starting to get to do some of the things that I want to do to make my teaching better to take my practice further"*
>
> (Margaret)

> *"...amount of CPD you're undertaking"*
>
> (Rosie)

There were also references to updating subject knowledge and supporting NQTs[9] in their practice. For context, each teacher in a state-maintained school has access to 30 hours of mandated 'continuing professional development' (CPD) per academic year (roughly equates to five days). This is normally delivered as part of 'INSET' days (in service training). However, it is important to note that academy schools that do not follow the teachers' pay and condition document are not mandated to allow teacher dedicated CPD and can allocate their own hours (if any) that teachers are entitled to. The term CPD relates to any activity that *'increases teacher's knowledge or understanding and their effectiveness in schools and can help raise children's standard and improve teachers' job satisfaction'* (DfE, 2001). This definition provided by the DfE is broadly in line with how the teachers in my study felt about undertaking CPD – it was only seen as productive. In existing literature, teachers' that have access to CPD have described it as positive and also that it adds to them feeling supported by SLT helping to build relationships (Mercer, 2023). Yeh and Barrington (2023) found that teachers who had to access to CPD felt that it added positively to their performance and wellbeing. Yeh and Barrington (2003) also found that CPD was beneficial

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[8] 6 out of 7 of these references were by 1 teacher

[9] An NQT is a 'newly qualified teacher' in year 1 of their teaching career. They have a reduced timetable to allow them extra time for support in their teaching and completion of additional tasks to evidence the quality of their teaching to 'pass' their NQT year and proceed to the 'ECT' phase (early career teacher).

in improving teachers' wellbeing such as reducing their self-reported stress, improving relationships with colleagues, and had positive impacts on the way they communicated with parents. These positive outcomes for teachers receiving CPD documented in literature could help explain as to why tasks related to teacher development were not found when discussing actions or tasks that felt unproductive to the teachers in this study – that they felt these activities positively impacted their productivity in their role and could be improving their workplace wellbeing.

The second distinction to make between productive versus unproductive activities was the inclusion of 'whole school initiatives'. Any mention to a whole school initiative contained within a code for what makes a teacher feel productive. Whole school initiatives were only coded for when teachers were discussing what made them feel, or what they were doing was unproductive. References to whole school initiatives included in the teachers' responses had purely negative connotations that were also often linked to 'time' and 'workload'. The comments made by teachers in my study are directly relatable to Butt and Lance (2005) who found that the fourth greatest reason given for teachers in their study that contributed negatively to workload and job satisfaction were 'government-school initiatives'. Teachers in their study commented that there were too many, they took too much of their time and that they felt they were constantly in a state of flux and constant change. They also felt that there was poor coordination in the implementing of new initiatives. Comments made by the teachers in the focus groups and interviews directly support the findings of Butt and Lance. In fact, when looking at their study they found that the top five reasons for excessive workload were:

1. Non-teaching related tasks (such as filing, acting as social worker, paperwork, form filling, duplicating information)
2. MARRA – monitoring, assessment, recording, reporting and accountability

3. Covering lessons for absent colleagues
4. Government-school initiatives
5. Poor school / department planning – plans that are ineffective for their purpose, duplication of planning, lesson planning, setting of targets.

Except the 'covering of lessons for absent colleagues' all of these were featured in teachers' responses for tasks that were unproductive supporting the findings from this thesis.

The theme 'performance management' also had clear differences in the tasks that teachers included when applying them in a productive or unproductive context. For unproductive it was a multitude of 'administrative' tasks as well as 'marking'. For productive tasks, the teachers commented that the outcomes of lesson observations and student grades made them feel productive. It is not surprising that students' grades (and the level of) made teachers feel productive as student grades form the basis of judgements on their performance as previously discussed in the literature review. For the inclusion of lesson observations, this could imply that when teachers are 'judged' to have delivered a 'good' or 'outstanding' lesson to their students as part of performance management this impacts on their feeling of productivity – they are contributing to the learning of their students. There were no comments from teachers in this study about the outcome of a negative assessment following a lesson observation to be able to ascertain if the opposite would be true – if being told they had delivered a 'poor' lesson would then make them feel that lesson observations were unproductive. The lack of negative comments could be accounted for by Hobbs and Moreland (2009) who found that visible means of performance management such as lesson observations could serve as a method of improving belief around self-efficacy through praise and this was more apparent when schools were in 'challenging' circumstances. Although lesson observations themselves were not commented as negative by my participants, the administration tasks surrounding lesson

observations and student grades were deemed to be unproductive for teachers. This again links back to the Butt (2005) study and the inclusion of MARRA as the second reason for excessive teacher workload. This again stresses that teachers in the focus groups and interviews responded that any task that took teachers time that was not deemed by them as directly impactful as to what happened in their classroom was considered unproductive.

What teachers do and what the Teacher Standards say they should be doing

When looking at the different themes' teachers' responses generated, and the tasks contained within them, it is possible to link these with the government mandated Teacher Standards (2011). The content of each theme, as provided by teachers for this thesis can be matched against each Teaching Standard. However, not all areas of their everyday job roles and responsibilities are thought by teachers in this sample to enable practice that meets the Standards. The links are outlined below:

- Standard 1: Set high expectations which inspire, motivate and challenge pupils
  - Where teacher time was spent completing tasks that included extracurricular activities, tailoring lessons, and dealing with parents this was productive.
- Standard 2: Promote good progress and outcomes by pupils
  - Student grades were seen as a reflection of productivity but only tasks that impacted directly on these were seen as productive such as planning (including for future years), tailoring lessons, and producing resources to support learning. Marking was not deemed to be productive in helping achieve student progress and a drain on a teacher time
- Standard 3: Demonstrate good subject and curriculum knowledge
  - Teacher development – in particular CPD, was only included as a positive contribution to teacher productivity
- Standard 4: Plan and teach well-structured lessons
  - Teaching related tasks e.g. those that contribute to the planning and delivery of lessons, were the most referenced activity of any in my responses with a total of 36 references and mainly as a series of productive tasks except for where lesson planning was within a set structure and when linked within performance management associated tasks
- Standard 5: Adapt teaching to respond to the strengths and needs of all pupils
  - Tailoring of lessons was the bracketed term for when teachers referred to ensuring their learners needs were met, adapting during lessons and

planning future lessons to enhance the learning of all of their students. This was only seen as productive

- Standard 6: Make accurate and productive use of assessment
    - Marking of student formative assessments was referred to as productive. However, marking and tracking assessment was predominantly deemed as unproductive by teachers in my study and most of the tasks for this fell under 'administrative' and 'performance management' tasks.
- Standard 7: Manage behaviour effectively to ensure a good and safe learning environment
    - Speaking with parents, carers and other stakeholders was repeatedly mentioned by my participants in terms of behaviour management. Building relationships through extracurricular activities also formed part of this
- Standard 8: Fulfil wider professional responsibilities
    - Teachers provided insight to this standard. The long-term life chances of their students were referred to as well as how it was their responsibility to maintain their professional standards through CPD and working collaboratively with colleagues. Overall, tasks which could be classified under this standard were deemed as productive.

4.18 Production of empirical indicators

The findings from the questions posed as part of the focus groups and interviews were able to address the research questions. Teachers in this study were able to articulate what a productive teacher looked like. They were also able to break down their everyday job role into tasks and responsibilities that contributed to (or negated) their being and/or feeling productive. From examining the actions detailed within the themes 26 core empirical indicators to be used within the TPAT were identified:

Teaching related tasks

- Providing oral feedback to students
- Providing written feedback to students
- Planning each classes' lessons for the week ahead using a standardised pro forma
- Planning each classes' lessons for the week ahead using own method
- Assisting in the planning of schemes of work
- Preparing worksheets / handouts for each lesson
- Preparing physical activities for lessons where appropriate (e.g., sporting activity, science experiment)
- Preparing differentiated tasks for learners in classes
- Preparing classroom environment prior to lessons
- Preparing tasks for learners that allow for graded feedback

- Preparing tasks for learners that are designed to actively engage them

Wider school and extra-curricular
- Planning and/or deliver a school club(s)
- Planning and/or deliver a school trip(s)
- Performing a morning/break/after school duty shift(s)
- Attending meetings about new whole school initiatives
- Implementing new whole school initiatives

Performance Management
- Having classroom observations linked to performance management
- Having reviews of the feedback given to students linked to performance management
- Having reviews of the grade's students achieve linked to performance management
- Attending meetings about performance management

Pastoral care and communication
- Speaking to and/or meeting with parents and carers outside of parents evening
- Speaking to and/or meeting with parents and carers as part of parent evenings
- Completing written reports on student progress and behaviour
- Following the school's behaviour management policy
- Completing tasks associated with the school's behaviour management policy (e.g. logging behaviour incidents)
- Attending meetings about the pastoral care of their own / whole school students

4.19 Conclusion

This phase of the research set out to develop a new definition for the productivity of teachers in England and to break down the everyday role of a teacher into empirical indicators that contribute to their being and/or feeling productive – be those indicators a positive or negative influence.

By following a qualitative process employing phenomenological principles and using thematic analysis, a new definition was achieved this being **'what a teacher does that contributes to the learning and/or enriches the lives or their students'**. The results from

this phase were also able to provide a comprehensive set of empirical indicators that represent what 'a teacher does', 26 core tasks in total, within five themes, these being: teaching related tasks, behaviour management, wider school and extra-curricular, communication and performance management.

The method used in this phase of research was of great Importance in uncovering the findings. Via the application of a phenomenological approach, the lived experiences of teachers were placed at the heart of the study. For the first time in literature, a definition is now available that succinctly describes what a productive teacher is which is based on the knowledge and lived experiences of teachers themselves. This definition is underpinned by a tested set of indicators that form a representation of the everyday actions of teachers that they believe meet this new definition – they contribute to the learning and life enrichment of their students. They also represent indicators that teachers believe do not help them work towards meeting the new definition. This method also allowed new insight into how teachers operate in their everyday job role and how this can be related to the Teacher Standards (2011). The findings from the interviews and focus groups were able to highlight where teachers are frequently performing actions that they feel support their practice but also where tasks they are performing do not. The tasks that teachers evidently feel do not contribute to their practice, and therefore not working towards meeting the UK Government mandated Teacher Standards, were mainly due to current forms of assessing students, assessing the teacher themselves and the associated administrative burden a result of performing these tasks. This study can provide a basis to explore how these standards could be better met. Why are tasks being performed that are being reported to take teacher time away from what they feel makes them productive?

The issues with teacher time being taken-up with administrative work are discussed in detail in this paper and therefore my findings further support what has already been published.

Of course, there are limitations in this phase of the study. The first being that of sample size. With any study the more participants, the more data and the more insights you can gain. However, I have previously argued why my sample size was adequate to be able to report on the findings and generate a conclusion. Looking ahead, the study could be repeated with a larger sample size to be able to conduct more focus groups and interviews which could lead to additional tasks being discussed or more or less emphasis on certain tasks being featured.

The time at which this study was completed was also a limitation. Exploring productivity during a global pandemic when teachers had had to respond very quickly to new teaching methods, plus the general anxiety of a being in a global pandemic, could have impacted responses. However, teachers were instructed to think back to pre-pandemic times and their whole career when answering. This limitation was also controlled for, as much as possible, when designing my study and considering what literature recommends as mitigations to common method bias. A final limitation, which is found with any study that employs a qualitative method of investigation is that generalisability. My study provides an insight into a small sample of the teaching population, who although generally representative, do not represent even 1% of the teaching population in England. However, by using phenomenology I have accepted that the responses provided represent the truth

of those participants' lived experiences. These responses have been able to build a picture and working framework for how a secondary school teacher in England operates and what they consider the purpose of their role in a student's life to ultimately be, the findings could have indicative value for the population.

One area that could be of interest for future work would be to look at the definition generated in this study in comparison to a definition generated using the same method but with private school secondary teachers in England. It would be interesting to see if latter place the same weight on certain aspect of their role in terms of productivity and if they even have similarities in the tasks they complete. With private school teachers reporting higher levels of job fulfilment this could help mark differences in state versus private school teacher practice and point to where the tasks deemed 'unproductive' by state schoolteachers could be removed, adapted or minimised in their everyday practice.

A clear and well evidenced recommendation as an outcome of this research would be the necessity for a review of government, local education authority, multi-academy trust and school policy in terms of performance management practices. Performance management was largely deemed to consist of unproductive tasks. My findings support current literature around the impact and perceptions of these practices and as such the tasks defined in this study which were deemed unproductive should be investigated as to their frequency and perception across the teaching population in England as a whole. If teachers, on a larger scale were to report the same feelings of unproductivity then the system would be seen to be failing in its ambition to manage and improve standards within education.

4.20 Question five: What do you think affects your workplace wellbeing?

As discussed as part of the literature review, poor workplace wellbeing can impact upon productivity and absence from work due to illness costs the UK economy approximately £60 billion a year (Black, 2008). In relation to education, poor physical and mental health is said to lower student outcomes, impact on student-teacher relationships and lead to increased attrition (Estyn, 2013; Caprara et al., 2006; Krekel et al., 2019; Zhang et al., 2011; Brady and Wilson, 2020). The main aim of this thesis is to produce a new tool that assesses the self-perceived productivity of secondary teachers in England. When used in isolation this tool can tell you which areas of the everyday working life of a teacher are deemed by them to be productive or unproductive, but, when used in conjunction with the Teacher Stress Inventory, as is the case with this thesis, being and feeling productive in a specific area can be explicitly linked to a stressor it may increase or decrease. The importance of this is that increased stress reduces job performance, productivity and job satisfaction (Krekel et al., 2019; Bui et al., 2021; Okeke et al., 2016; Hoboubi et al., 2017), therefore if areas of a teachers everyday working life that induce stress can be identified and reduced, or vice versa, a healthier and more productive workforce will exist. The thematic analysis of the transcripts in relation to the questions posed surrounding wellbeing will provide a deep insight into any relationships that are found in later stages and can provide weight to any results reported. For example, if teachers are reporting that workload is impacting on their wellbeing, this could correlate with any items in the TPAT that are being shown to influence time management or work-related stress sources of the Teacher Stress Inventory. If so, recommendations made from the findings of the TPAT will be further supported.

The findings from this stage of the thesis provide evidence to address the research question of what secondary teachers in England consider affecting their workplace wellbeing.

Questions were posed to participants in the focus groups and interviews as part of the same Zoom session where productivity was explored. Due to importance of exploring productivity during the sessions to be able to derive the new definition for teacher productivity and the empirical indicators that were to be used in the construction of the TPAT, there was not enough time to get through each of the different areas of workplace wellbeing. Focus group one had time to cover physical environment and leadership only. Therefore, each area of wellbeing, physical environment, leadership, work-life balance, and relationships with colleagues is explored as a separate component rather than providing an overall picture to remove bias. Not doing this and reporting overall findings would mean that the first two areas of physical environment and leadership would naturally have more references driving code and theme generation due to the time that was able to be spent on them during the Zoom Sessions. Due to the majority of time being spent exploring productivity the content regarding wellbeing was also less, however, teachers still gave rich descriptions which could inform the analysis.

4.21 Area One: Physical environment

Physical environment can have a large impact upon employee wellbeing. In fact, Public Health England state

> *"The surroundings in which employees spend their working lives are an important source of job satisfaction and impact on work motivation and patterns of interaction. They can be as much of a source of pressure as a heavy workload, poor work-life balance or significant organisational change."* (PHE, 2015, pp.4).

Therefore, with teachers having little to no flexibility in their place of work, or impact on a schools financial resourcing, it was judged as important to explore if physical environment was an issue for them. It was somewhat surprising how each session when this question was posed led to teachers describing a litany of ways in which their physical environment impacted on their wellbeing. Teachers spoke as passionately about physical environment as they did workload, the number one cited reason for teachers leaving the profession.

Five themes were generated from the analysis of the transcripts these being:
- Physical conditions (state of repair, light and temperature)
- Having a designated teaching room
- Access to IT and physical resources
- Communal spaces for teachers off limits to students
- Autonomy over physical space

Step one – familiarisation

The first round of coding resulted in 27 codes being generated and 147 references. The codes with the most references were physical environment affects mental health, autonomy to design physical space, negative effect if poorly resourced, importance of physical environment, under resourced due to finances and physical condition feels depressive.

Step Two – examination

A cluster diagram was generated (see figure 13.0) to refine and merge codes, design new ones and being theme generation.

Figure 13.0: Nvivo Cluster Analysis by word frequency – physical environment and effect on workplace wellbeing

Items clustered by word similarity

- impacts decision to leave
- removal of chairs
- natural light
- light affects mood
- physical temperature control
- physical location of room in school for access to resources
- represents personality
- feeling of being lucky to have own space
- impacting learning of students
- own classroom
- physical space
- health and safety being ignored
- autonomy to design physical space
- Importance of physical environment
- physical condition feel depressive
- Information systems
- positive effect if well resourced
- negative effect is poorly resourced
- under resourced due to finances
- poor or not correct physical condition
- outside space
- intrusion and scrutiny
- neutral non work space
- space away from students
- space to speak with colleagues
- affects mental health
- individual physical space

A clear theme from the cluster analysis was that of the bottom sub-branch. The importance of having individual space, space away from students and the opportunity to speak with colleagues were on the same branch. In the transcripts this was often linked to having a staff room.

"you need to have a space where you can go and cry for a second where no one else can see. And you have to be able to feel because otherwise, all that happens is you hold on to it all day. And you get through those five or six lessons, however many lessons you teach for your period, and you get home and you just feel exhausted. And the idea of going back into work becomes really difficult because you've had to, like, hold on to it all day. ….I was finding myself locking my classroom door and

hiding around the corner so I could just have five minutes where a child cannot be like okay, I think staff only designated space is a massively important thing"

(Bella)

"…really positive impact is being able to speak to your colleagues and mingle with your colleagues in the downtime during the day"

(Paul)

"Yeah, I think the staff rooms as well having that space is massively important. And not just when you do want to cry, but to mix with other members of staff."

(Margaret)

"And I think it needs to be the kind of workplace where you can have discussions so you're not sitting there going, Oh, God, that lesson was awful. And that child was awful. And it's just me, I'm terrible. If you can go and kind of let off steam in the staff room, or your office or wherever and simply get Oh, yes, I remember I had them last year"

(Jim)

"teaching is one of the very few professions where you never actually get a break away from your job in the day, like, I do not know anyone who regularly manages to take a half hour lunch break. And not want to, well, both schools that I've worked at, it's not going to work because of the setting because of where it's situated in the city. You cannot go out, you cannot leave the building on your lunch break. So it's so important that the few little downtimes you do get that you do have a space where you can just relax for 5 minutes with a with a brew and have a little chat because you don't."

(Claire)

Two other clearly defined branches were that of physical conditions in terms of access to natural light and of temperature control in the classroom and having your own classroom and impact that this has on the learning of students. Access to resources was also a theme generated from this analysis and linked with that of having your own classroom. In the transcripts this was often linked to having to teach across multiple rooms and transport resources from one place to another which would impact the lesson delivery and learning of the students. Autonomy to improve the physical space or where physical spaces were in poor repair or 'sterile' (as referred to in the transcripts) was represented by its own branch (blue).

"I think a lot of what the others have said in terms of like the environment of your classroom, and access to sufficient amounts of resources, not having to scrape and you know, up your resources, which I know a lot of schools find because of budgets, the idea that Performing Arts do not need pens, so then you have to go and ask other subjects for pens because we do not write ever. So we do not need pens. So we didn't have we didn't get given the stationery order at the beginning of the year, which meant that we just spent the whole time like begging English to give us pens."

(Claire)

Step Three – further analysis

As with previous questions, for further analysis a word cloud diagram was produced.

Figure 14.0: Word cloud diagram generated by Nvivo – physical environment and workplace wellbeing

What immediately jumps off the page is 'need' and 'room' and 'space'. 'Staff' is located directly above 'room' and if reading from left to right it reads that 'staff need room' or 'staff room need'. This word cloud diagram really reinforced what the teachers had been saying during the sessions about needing their own space not only teaching space but a communal space where teachers could meet with one another and share their experiences to improve practice and provide emotional support to one another. The word cloud diagram also highlights that teachers need simple resources like books and pens.

The original 27 codes had now been reduced to 15 and five themes were generated that encapsulated each of them.

- Physical conditions (state of repair, light and temperature)
- Having a designated teaching room
- Access to IT and physical resources
- Communal spaces for teachers off limits to students
- Autonomy over physical space

Access to physical and IT resources was the highest referenced theme with 40 references across the five transcripts providing the content for the theme.

4.22 Area Two: Leadership

Leadership can have a significant impact the wellbeing and performance of any employee (Milner et al., 2015; Inceoglu et al., 2018; Cann et al., 2020) and within education, for teachers to have improved wellbeing their work needs to be valued by leadership, they should be given opportunities for professional development and be given autonomy (Cann et al., 2020). Without being supported by leadership in these three areas it has been reported that the impact is that of poor wellbeing, increased stress, higher attrition and poorer student outcomes (Kyriacou, 2011; Naghieh et al., 2015; Allies, 2020; Van der Vyver et al., 2020). With accountability measures also being stated to instil poor trust between leadership and teachers, and this impacting on job satisfaction, commitment to staying in the profession, stress and workload (Perryman et al., 2011; Ingersoll et al., 2016; Sachs, 2016; Rosenblatt, 2017; Perryman and Calvert, 2020; Wilkins et al., 2021), it was important to gain insight from the participants into any effect they perceived leadership to have on their161 wellbeing.

Four themes were developed from thematic analysis of the transcripts. These being:
- Lack of professional respect and recognition

- Negative and non-productive communication
- Pace and communication of change
- Leadership competency

Step one – familiarisation

Familiarisation involved three rounds of analysis to generate 27 codes and the top five codes with the most content was 'good communication is important', 'communication is negative', 'feeling of trust', 'approachability' and 'need clear lines of communication'.

Step Two – examination

A cluster analysis was performed along with a word cloud being generated. The word cloud generated did not produce any meaningful insights and is omitted from this analysis. There were some distinct themes that immediately emerged from the generation of the cluster diagram (see figure 15.0).

Items clustered by word similarity

- experience not taken into account
- ideas not listended to
- need to be listened to
- aggressive communication
- communication is negative
- need positive feedback
- too much performance management
- asked to do tasks that are too time intensive
- need to feel respected
- obstructive
- feelings of fear
- leadership need to be approachable
- not being judged
- good communication with leadership is important
- meetings with leadership are good
- need to be clear lines of communication
- changes in leadership
- leadership making want to leave
- lack of training
- leadership need to teach
- changes to school policies and procedures
- Feeling of trust
- leading by example
- poor management
- lack of autonomy
- can't whistleblow
- not listened to

Communication (featuring on the top branch of the diagram) was a theme that appeared to have a prevalent source of codes which were involving feelings of fear, being judged and negative or poor communication. With these codes being linked with experience not being considered or ideas not being listened to, two themes were generated these being 'lack of professional respect and recognition' and 'negative and non-productive communication'. The first of these themes combined that teachers feel their ideas and professional experience are not taken into consideration and that this can foster a culture of fear and judgement. The second theme captured that communication can be negative, aggressive and the non-productive aspect of the theme that communication can be deemed as adding

too much to a teacher's workload or too linked to performance management which previous thematic analysis of questions three and four regarding productive and unproductive areas of a teachers' working life had highlighted.

> *"…then they're asking you to do silly things like data collection or, you know, also they put another after school duty on somebody or something like that, then that I think it can be really frustrating for people"*
>
> (Jim)

> *"I think sometimes in schools, people are sometimes afraid to say things you know, to mean are afraid to feedback through whether rational irrational fears of kind of repercussions."*
>
> (Paul)

> *"I've seen colleagues in tears. I've worked with Students, teachers, with teachers who are inexperienced, and they're under pressure because they are on performance management, for the school for whatever reason, and it just, I just do notthink it works"*
>
> (Rosie)

> *"I would never ask you to do something which is going to take far more time than it's worth"*
>
> (Margaret)

At the bottom of the diagram not feeling listened to and not being able to whistleblow were linked on the same branch as poor management and lack of autonomy. However, they were part of the main branch which also featured that school leaders had a lack of training, needed to lead by example and that changes in leadership (linked with changes to school policies and procedures) could impact the attrition of teachers. From these the next themes were developed of 'pace and communication of change' and 'leadership competency'.

> *"…feel that you cannot do anything and even though they've got a little whistle blowing policy and they've got a complaints procedure and they've got you cannot say a word"*
>
> (Karl)

> *"…change in leadership that basically usurped this head teacher and got them out. Straight away, that caused a negative impact on wellbeing."*
>
> (Karl)

> *"…I will not repeat for the two kind of sets of points you made before but but I will confirm that you have I've experienced those exactly has had been described to being wrapped in policies, you cannot move and you cannot leave."*

"I think an hour of teaching on a headteachers timetable would do wonders if every head teacher had an hour of teaching"

(Margaret)

"I think it depends how in touch leadership are, how well they remember being, you know, a classroom teacher"

(Jim)

"And I think, unfortunately, and some leaders of schools, when they go into senior leader positions, do not have the skill set, because they haven't been trained to manage or lead a team of adults."

(Paul)

Step Three – further analysis

The word cloud diagram generated featured words such as 'tears' and 'pressure' highlighting the negative sentiment that was expressed during the sessions regarding what was deemed as poor leadership.

Figure 16.0: Word cloud diagram generated by Nvivo – leadership and workplace wellbeing

Having inexperienced leaders also featured as did 'approachable' which represented the latent meaning of lots of content that was used to generate codes. Further analysis from this word cloud allowed for the refinement of the remaining codes to 17 total.

Step Four – reviewing the analysis

The final four themes that were derived from this analysis are detailed below.

- Lack of professional respect and recognition
- Negative and non-productive communication
- Pace and communication of change

- Leadership competency

Negative and non-productive communication was the most referenced theme and featured as part of all five sessions held with the teachers. This was closely followed by lack of professional respect and recognition.

4.23 Area Three: Work-life balance

When work-life balance has been reported as lacking, it has been linked lower wellbeing in the form of being less physically healthy, lower job satisfaction and lower commitment to remaining in the job (Butt and Lance, 2005; Kinman and Jones, 2008). With the current retention crisis facing the secondary education sector (Support, 2023) and workload being the most cited reason for wanting to leave (Allen et al., 2019; Biggam, 2010; Gibson et al., 2015; GOV.UK, 2016; Ming, 2005; Mulholland et al., 2013; Sellen, 2016), work-life balance is an important area to explore with the participants as to if and how it impacts upon their wellbeing.

There were four themes developed from thematic analysis of the responses for this question. These are:

- Can achieve a work-life balance
- Teachers have a poor work-life balance
- School leadership, culture and interventions add to lack of work-life balance
- Workload negatively affects work-life balance

Step one – familiarisation

The first round of coding for this area resulted in 40 codes and 130 references. These were distinctly split by positive or negative responses about work-life balance. Certain codes were then merged and re-named to be more representative. This left 39 refined codes and

the top five with the most content were 'parental commitments are affected', 'causes stress', 'accountability culture and processes', 'school interventions' and 'unrealistic expectations'.

Step Two – examination

A cluster analysis was produced using Nvivo 12 to start to see where links existed between codes (see figure 17.0). When looking at the diagram it was apparent that school culture, processes and leadership had an impact on work-life balance and that also on this main branch were (although part of a subbranch) were 'school interventions' and 'school schemes do not work' so these were merged into the overarching theme of 'school leadership, culture and interventions'.

Figure 17.0: Nvivo Cluster Analysis by word frequency – work-life balance and effect on workplace wellbeing

Items clustered by word similarity

laughable
hard to manage a worklife balance
poor work life balance
school dependent
accountability culture and processes
good management helps
too much admin
unrealistic expectations
workload too high
Emails outside of working hours
parental commitments are affected
School interventions
school schemes don't work
is achieveable
gets better with experience
strength to say no
leadership expect extra hours
hard for early career teachers
take work home
Working outside of school hours
early starts and late finishes
work during school holidays
lack of balance at certain times
work intensive then time off
pressure to say yes
temporary contracts force people to say yes
exhaustion and burnout
marking causes high workload
unncessary tasks
wasting time on admin
cause stress
go against school procedures to lighten workload e.g cancel meetings
commitment to out of work hobbies
need autonomy
staff are trusted to do work
causes relationships breakdowns
lose PP lessons to other lessons
less meetings
had to take time off due to poor balance
workload caused moving schools

The top branch was merged to form 'poor work life balance'. The cluster diagram below (see figure 17.01) was from the fourth round of examination which aimed to refine the codes generated. At this point there were enough distinct branches to start developing themes.

Figure 17.01: Nvivo Cluster Analysis by word frequency – work-life balance and effect on workplace wellbeing 2

Items clustered by word similarity
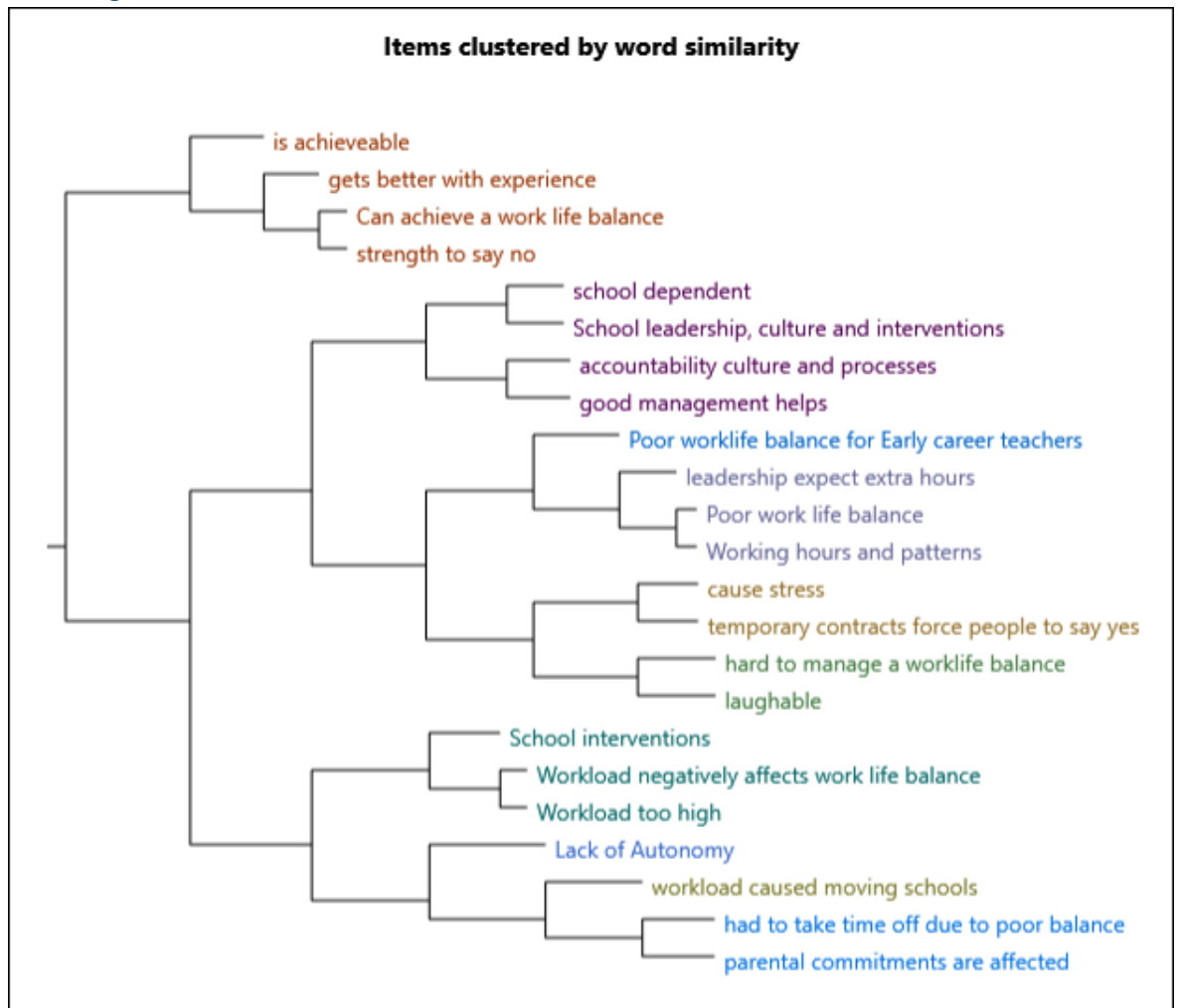
From the cluster diagram in figure 17.01 we can see that teachers associated workload and the tasks they were expected to complete linked to school leadership and culture and ECTs were linked in with this too.

"I had the new head teacher, he was like, I want you to come in the summer holidays and half terms. I said, you've got no chance. Well, I will not repeat what I said."

(Karl)

"it's an expectation that you will do work at home."

(Rosie)

"…And I know that my school kind of forces the issue with that a bit sometimes on Wednesday afternoons, they'll be like, oh, we're going to have a staff wellbeing session and everybody's going to spend an hour together doing yoga. And I'm they're going I'd rather just get on with my marking so that I can spend another hour with my kids tomorrow"

(Jim)

"…And so that often means I'm working well into an evening. But the reason that I left so I qualified in 2018, I took a year out. The reason that I left teaching was because I felt it wasn't compatible with having a young family and the hours that I work that I was working, were completely unreasonable"

(Emily)

Important to note, is that the code 'Early Career Teachers' was found applicable for all four Zoom sessions even though the median years teaching for the sample population was ten years demonstrating that all teachers, no matter their length in teaching recognised the extra work their ECT colleagues are completing.

(In relation to ECTS) …."I know that they work until three, four in the morning, planning, their you know, their lessons, and marking, and coming up with all sorts of things. Their work life balance is appalling"

(Karl)

"People end up taking too much work home and burning out you know, and I do feel particularly younger teachers there's a new when you're a new teacher, the the pressure to say yes to everything means that then all of the nuts and bolts of planning then falls into the time that you really do need to look after yourself and have some kind of downtime"

(Paul)

Whereas on the bottom branch (see figure 17.01) school interventions and lack of autonomy were linked to a poor work life balance and this branch also featured that teachers stated this was leading to them having to take time off or move schools – linking with the reports of poor work-life balance leading to greater attrition and absenteeism. However, it was not all negative and the top branch clearly displayed that teachers thought it was achievable to strike a work-life balance, and with being in the top half of the diagram linked back to leadership and accountability as explained by Mo who had a different type of marking policy in their school.

"….and like I said, it's a light monitoring touch. And that's actually what what kind of makes our work life balance easier because it also means it will regularly having somebody come in for five or 10 minutes."

Work, time, planning and home were prominent within the word cloud diagram (see figure 18.0). What also featured in this diagram, echoing the participant responses and the cluster diagram was that of 'holidays', 'home' and 'Ofsted'.

Figure 18.0: Word cloud diagram generated by Nvivo – work-life balance and workplace wellbeing

Participants often stated they were required to take work home, but it was for tasks such as marking or administrative tasks to do with monitoring processes. Where Ofsted was mentioned, it was not only with negative connotations. Participants felt they were completing administrative tasks for leadership, but that Ofsted would not be interested in them or not take them into account. The code of 'working patterns and hours' included content describing that teachers felt that certain times of the year put additional pressures on them with one teacher commenting they had to give up their 'life' in the April (due to GCSE preparations).

Nowhere in this diagram is 'learning' or 'students' featured moving issues with workload away from the learning of students and more to do with the tasks that are associated with

the teacher's role in terms of administration such as lesson planning and marking. This supports the findings from question four which explored what teachers thought in their everyday working lives was unproductive (see page 119).

Step Four – reviewing the analysis

Ultimately there four overarching themes that were able to contain all content in a succinct and representative manner. By far the most prevalent theme was 'workload negatively affects work-life balance' with 66 references taken from the transcripts contained with 15 codes. The final four themes derived from thematic analysis of the transcripts are:

- Can achieve a work-life balance
- Teachers have a poor work-life balance
- School leadership, culture and interventions add to lack of work-life balance
- Workload negatively affects work-life balance

4.24 Area Four: Relationships with colleagues

Have positive and reciprocal relationships with colleagues can help mediate job demands that impact stress (Haines et al., 1991) however, they can also add to workload and impact on psychological wellbeing and commitment to staying in the profession were judged as negative (Bakar, 2013; Hobfoll, 2001; de Wet, 2010; Neto et al., 2017). Participants explored relationships with colleagues and often returned to examples of colleagues in leaderships or those with less experience than themselves. Overall, teachers are part of this analysis valued their colleagues and felt that strong relationships could have a positive impact on their wellbeing.

There were four themes that emerged from the analysis these being:

- Community and collaboration
- Environment to build relationships
- Relationships can be stressful

- Workplace bullying and lack of support

Step one – familiarisation

By this point in the thematic analysis the transcripts were very well known. One round of coding resulted in 63 references being contained with 20 codes. The codes represented the importance of professional relationships with codes containing content that showed relationships with colleagues could increase wanting to stay within teaching and be a catalyst to leave. The teachers' expressions of needing more time to build relationships were also prevalent in this stage of code generation.

Step Two – examination

A cluster analysis was then generated to look at relationships and where refinement and merging of codes could occur.

A clearly defined branch at first sight was that which contained 'can share expertise' and 'collaborative relationships. This was assessed to represent a theme even at this early stage and was re-named as the theme 'Community and Collaboration'.

Figure 19.0: Nvivo Cluster Analysis by word frequency – relationships with colleagues and effect on workplace wellbeing

Items clustered by word similarity

- Can make you want to stay at the school
- really important
- can be stressful
- hard to cope with sometimes
- feel isolated
- feeling of being judged
- can cause long term sickness if relationships are poor
- sometimes frustrating
- Can share expertise
- being a team
- collaborative relationships
- good relationships make job easier
- need a sense of community
- some people are difficult to work with
- bullying
- can add to the stress of the job
- more support is needed
- feeling that nothing is done to help
- need space and opportunities to build relationships
- can affect wanting to stay as a a teacher
- turnover affects building relationships

The branch recoded as 'community and collaboration' contained content which was overwhelmingly supported of the positive impacts relationships with colleagues can have on workplace wellbeing.

> *"everybody works together in a co-op with a common goal and supporting and, you know, time management, work life balance, and even like, and that was really good because you can have a really, really pants lesson, and you just go to your mate that just didn't work. What, what, what did I do? Or you could even do? Look, I'm going to try something I've never done before. I saw that. I'm going to magpie that from your lesson"*
>
> (Karl)
>
> *"So I've always maintained professional, you know, conductive and collaborative relationships"*
>
> (Rosie)

Further examination and coding allowed for branches that were more clearly defined and 'environment to build relationships' and 'emotional and physical stress' were created.

> *"…stepping down from a certain position to go into another position in school, just because of the relationship or relationship breakdown or not building all up in the first place. And that can take away from you know, that that is very stressful"*
>
> (Rosie)

> *"…if staff do not know each other very well, or if there's an opportunity for staff to get to each other, the turnover is too quick. I think you've entered a lot of inconsistency in how that behaviour is managed. And then people do not feel an attachment to the school. So when something is tough, you know, when something goes wrong or when someone feels in a difficult situation, they're more likely to leave more quickly than if they felt they can have a chat to their colleagues or have the support of their colleagues. I think it's massively importa't."*
>
> (Paul)

It was assessed that feeling isolated and the feeling of being judged could be merged with 'environment to build relationships'. The final branch to code was that which featured bullying. The code of bullying only featured in one session, focus group two, but was discussed by 3 participants within that session. As it was linked with some 'people are difficult' which was mentioned in interview one as well as focus group two, the theme decided for that branch was 'workplace bullying and lack of support'.

Step Three – further analysis

Following generation of a word cloud diagram (see figure 20.0), staff, colleagues and relationship all featured prominently within the cloud diagram. Support was explained in two ways in the sessions, that it was good when you felt supported but that in some areas, especially to do with dealing with difficult people and workplace bullying, more support was needed with one participant talking about the lack of mediation in education settings when relationships were difficult. This could explain for 'bullying' and 'stress' and 'support' being so close with one another in the diagram.

Step Four – reviewing the analysis

Following all stages of analysis, the themes and codes generated were reviewed and four

themes decided upon. Having a sense of community and how that then afforded culture of

collaboration was the most referenced theme followed by having the space, time and

opportunities to build relationships with colleagues. These had an overall sense of positivity

but also frustration by teachers wanting to build in these areas.

The four themes developed were:

- Community and collaboration
- Environment to build relationships
- Physical and emotional stress
- Workplace bullying and lack of support

4.25 Discussion – Teacher wellbeing

The findings from the interviews and focus groups allow for the following discussion of the

research question *what do secondary teachers in England consider to affect their wellbeing*

in the workplace? The discussion of the findings will be based around the definitions provided by Anttonen and Räsänen (2009) as what to workplace wellbeing is.

4.26 Physical environment and workplace wellbeing

The first area that participants explored was that of 'physical environment'. The way these discussions progressed was somewhat surprising. Whilst it was expected, due to literature, there to be areas of their physical environment they felt contributed to their workplace wellbeing, the importance, and clear impacts that they expressed were much greater than anticipated.

Having access to the correct and timely IT and physical resources was the greatest referenced theme. Teachers stated that they could spend time planning lessons but then they would not have the correct number of books, science equipment would be broken, there was a shortage of musical instruments and even a pen shortage, all of which did not foster a positive learning environment. What the teachers in my study reported is supported by other published literature – some going back 40 years which shows this is a long-standing issue that has yet to be fully addressed and corrected. McGrath et al. (1989) reported that for teachers in Northern Ireland the scarcity of resources was the most cited cause of stress. Chaplain (1995) conducted a study with English primary school teachers and found that their greatest source of job dissatisfaction was that of lack of resources – they also found that where their study had teachers from the same school sometimes the responses given were in opposition to each other – highlighting that even within the same school, some teachers may not have access to the same quality and level of resources as others. More than fifteen years later Kyriacou (2011) reported that working conditions – including facilities and resources was a source of stress for teachers. So, there are clear

links in previous literature with what was found as part of the thematic analysis of this research. What the teachers said also links to the definition previously generated as part of this study – *what you do that contributes to the learning and enriches the lives of your students*. Without properly resourced classrooms teachers cannot proactively ensure that their classroom environment is set up for a positive learning experience. Also, the lack of control that teachers seemed to have in being able to secure resources could contribute to feelings over lack of autonomy or of their professional value – all areas that contribute to stress and workplace wellbeing.

When looking at the other themes generated in this study 'space' as a concept is important. The physical working conditions that teachers said they were expected to teach in were quite shocking in parts. Comments ranged from classrooms with no natural light, no temperature control or adequate ventilation (too hot in the summer but very cold in the winter), having broken desks and stools, and generally feeling that their workspace was in a state of disrepair. There is much literature on how physical learning environment affects student outcomes (Uncapher, 2016; Woolner, 2014), but literature focusing purely on teachers and the impact on their wellbeing and / or productivity is harder to find. There is literature available that discusses the impact of noise and air quality on teacher wellbeing but any references to these factors were absent in responses from the sample participants. Generally, research into other sectors supports the argument that the quality of the physical environment impacts on worker wellbeing. Campos-Andrade et al. (2013) found that higher quality physical environments increased the job satisfaction of nurses, however, they also commented that reported stress levels were so high that their study had found that improving the physical environment would do little to lower the workplace stress of the participants. The findings of this study were supported by Summers et al. (2020) who

again focused on healthcare professionals – they found when developing a new scale that the quality of the physical environment impacted feelings of wellbeing.

Access to natural light was deemed to impact the workplace wellbeing of my participants. A study of 1,614 employees in North America found that where employees had access to natural light and a 'view' they felt less tired, felt more fulfilled, engaged, and felt there was an increase in their performance at work (Meister, 2018). The impact not only on wellbeing but also of performance was echoed in multiple studies conducted by Hedge. He found that natural light increased productivity, improved sleep, and increased job satisfaction (Hedge, 2000; Hedge, 1984; McKee and Hedge, 2022). Lighting also effects student outcomes, Heschong (1999) found that students with the most daylighting achieved maths and reading test scores which were 7-18% higher than students with less access to natural light. Workplace wellbeing, in all definitions provided by Anttonen and Räsänen (2009) makes reference to 'safe' and 'healthy'. The poor physical conditions the teachers in this study reported would not lead to a safe or healthy environment and therefore it is not surprising there was such emphasis on this during the interviews and focus groups.

Finally, regarding physical environment, another theme was that teachers did not have a designated works or communal space, and where they did, they felt they had a lack of autonomy over it. For example, teachers commented they did not have their own classroom which meant they struggled to set up their learning environment. Most participants did not have a staff room or anywhere they could congregate away from the students. And finally, they felt that where they did have their own classroom, they were subject to strict and mandated rules about classroom displays. The cause of schools now frequently not having staffrooms can be traced back to the School Premises Regulations

that were published in 1996 but amended in 1999 and 2012. The amendment in 2012 saw the removal of the obligation that schools should provide teachers with accommodation 'for work or social purposes' (this amendment does not apply in Wales – only England). Slawson (2018) when interviewing teachers about this subject found that some teachers were having to eat their lunch standing up and felt like they could 'never escape' so even designated break times were interrupted. The removal of staffrooms has also bred a culture of mistrust been school leaders, multi-academy trusts and unions. As part of the interviews conducted by Slawson (2018), Kevin Courtney (joint General Secretary of the NEU at the time) stated

> *"While some schools are desperate for space, we suspect that some school managements just do not want teachers talking together. It seems some of the new academies are anti-union, and union discussions can begin easily in a staffroom. It's short-sighted, because schools with good union relations are generally happier schools. We think every school should have [a staffroom]."*

In the literature school staffrooms, where present, have been found to increase engagement, whole school collaboration, provide informal CPD and increase self-efficacy, especially in early-career teachers (Yamasaki, 2016; McGregor, 2003; Maynard, 2000; Meyer et al., 2009; Oberski et al., 1999). By removing staffrooms work communities are bound to be impacted, and having a feeling of being part of a collective community at work is part of workplace wellbeing. As part of the question about the impact of 'relationships with colleagues' on wellbeing, teachers again commented on needing to have the space to build relationships with their colleagues, supporting the idea of needing a staff room. They felt that a communal space fostered a school community and positively impacted upon their wellbeing. Teachers being able to discuss students, their behaviours, and behaviour management and learning strategies amongst each other would help support them in their practice and therefore enhance the learning that they are able to facilitate in their classrooms. This is one area of research for the future that would be of great use to the

research community. A dedicated study to compare the workplace wellbeing of teachers who have and do not have a communal space to gather away from students as this is currently lacking in literature but seems to be of importance to teachers themselves.

4.27 Leadership and Relationships with Colleagues

Discussions around leadership and professional relationships were very enthusiastic and teachers were able to articulately describe and explain how situations or approaches impacted upon their wellbeing. Although posed as a separate question, relationships with colleagues had much cross over with leadership and therefore they will be discussed alongside one another. By far the most referenced theme was that of negative or non-productive communication. This included break downs in the communication chain due to hierarchical structures, lack of clarity in messaging, lack of approachability of school leaders, being instructed to do (what were deemed) non-productive tasks and a culture of fear or of each interaction being negative. It is important to note when discussing the findings that all participants were middle management or non-management level and as previously discussed in studies school leaders have been found to also be 'stressed' and therefore their insight was lacking as part of the analysis. Leadership is a central tenet of contributing to workplace wellbeing (Konu et al., 2010). Other studies that have interviewed teachers such as Cann et al. (2020) have found that those who had high levels of wellbeing commented that their leaders were accessible and that they felt heard, and their voices were taken into account into whole school decisions. They also found that those teachers who were found to have lower levels of wellbeing said that there was a lack of recognition for the work that they did, and the pressures being put on them by leaders were due to being instructed to complete tasks that were unrealistic demands on their

time. This directly supports what participants said. Konu et al. (2010) found that secondary school teachers in their study had lower levels of wellbeing than primary school teachers but also had the lowest opinions on leadership practices. 60% of participants in the Konu et al. study claimed they were not included in decisions and less than 50% had ever received praise from school leaders for the work that they did. This further reinforces the lack of professional recognition that participants in the focus group and interviews for this thesis had experienced. Not being involved in decisions, but ultimately having to implement those decisions could be seen as teachers in this study to be unproductive – they were not doing tasks that contributed to the learning or enrichment of their students. A review of literature conducted by Gómez-Leal et al. (2022) found that effective leadership in schools was found where the leader had high emotional intelligence and was self-aware, reflective and empathetic. The impact of these skills and attributes were that trusting relationships could be built which contributed to levels of job satisfaction as well as performance. All the experiences that teachers relayed during the focus groups and interviews can be supported by other research and highlight the need for competent and 'good' leadership within a school to maintain staff wellbeing and performance. After searching literature for what professional development senior leaders can undertake to help them develop good practice, the Headship National Professional Qualification (NPQH) seemed to be the most common source. What is lacking from the content of this 18-month course is any module designated and leading people. The modules listed by Gov.uk are:

- curriculum and assessment
- behaviour
- professional development
- governance and accountability
- implementing school improvements

The module list above shows that the only inclusion of people management is regarding accountability, further supporting the surveillance and scrutinous practices that are well explained in terms of increasing teacher stress and lowering their workplace wellbeing.

Within the teaching standards there are no criteria that talk about people management or any human resources practices either. With leadership, or more the quality of, being so prevalent in literature and commented on by teachers themselves in terms of wellbeing there seems to be a clear lack of any formal training that senior leaders receive as they progress in their career. An answer to how supported senior leaders are in developing their people management skills could not be found in literature, but it would be interesting to investigate if there is a correlation with senior leaders who have undertaken people management specific training, those that have not, their self-reported levels of stress and the self-reported stress of those they lead.

During the focus groups and interviews teachers also commented on how workplace bullying had been witnessed or aimed at them personally. By looking back at the NPQH there is no module that deals with a human resource or people management. In a NASUWT study in 2019, 80% of teachers surveyed had been subjected to bullying. This is a higher reporting instance that participants in the focus groups and interviews. 70% of those surveyed by NASUWT stated they had experienced workplace bullying and said that the source was a headteacher or senior leader. When consulting the Advisory, Conciliation and Arbitration Service (ACAS) the following examples were provided as workplace bullying of teachers:

- headteacher repeatedly subjects the teacher unnecessary unannounced observations and criticises teaching methods unfairly.
- head of department assigns unreasonably heavy workload compared to that of colleagues.
- line-manager unjustly overlooks the teacher for promotion or training opportunities.
- senior leadership team change the teachers' job which results in that teacher getting a great proportion of challenging classes compared to others and which could cause difficulties in establishing an environment conducive to learning or forcing the teacher a subject that is not familiar to them or that they believe they do not hold expertise in, be that subject knowledge or pedagogy.

These specific examples were not all included in the accounts of teachers in this study, though their statements resonate with the criticism, workload and lesson observations included above. A study by de Wet (2010) concluded that teachers were bullied by various methods including

> *"principals ignore teachers' thoughts, needs, feelings and accomplishments; non-support of teachers; verbal abuse and public ridicule of teachers; unwarranted and unfair criticism; principals set victims up to fail; social and professional isolation; lack of empathy; unwarranted written reprimands; favouritism and forcing teachers out of their jobs; and reassignment or threatening victims with dismissal"* (pp.1453).

This quote mirrors the findings from the focus groups and interviews. The lack of professional recognition, negative communication, unrealistic demands on teacher time for non-productive tasks, not having spaces where teachers can congregate or have a break have all been discussed. Although participants only numbered two when talking about workplace bullying, if all participants had been given the examples provided by Acas and de Wet at the start of the conversation, they could have expressed instances where this had occurred. Again, having effective leadership that builds relationships would help reduce the frequency of workplace bullying and training for senior leaders should be put into place.

The impact that developing certain skills of leaders could have on their staff could be of great importance and as literature shows, with better wellbeing comes better job satisfaction, commitment to stay and productivity. Student outcomes would improve, the teacher retention crisis could be eased and there would be a healthier and happier workforce saving the UK economy a large sum each year.

4.28 Work life balance

The literature review as part of this thesis placed a focus on the workload and working hours of teachers in terms of their wellbeing. As previously discussed, the number one reason teachers give when they leave the profession is that of workload. Heavy workloads have been shown to cause burnout, emotional exhaustion, lower attrition, and lower life fulfilment. However, the Teacher Workload Survey (2019) did demonstrate that had been a reduction in working hours for teachers. the most referenced theme for participants was that of working hours and of school leadership, culture, and interventions. Although the Teacher Workload Survey found that working hours had reduced, Ofsted, in the same year, 2019 reported that there were increased levels of low occupational wellbeing caused by long hours, excessive workload, excessive marking, not feeling supported by leaders as well as experience continuous and fast paced change on which they were not consulted. It is important to include that although teacher work hours had decreased as a whole, in the Workload Survey, 25% of respondents worked more than 60 hours per week term time, 40% stated that they worked in the evening and 10% claimed that they worked during their weekend. Allen et al. (2019) who looked at the Teacher Workload Survey, and three other data sets exploring the same subject stated that they had not found 'notable change' in the working hours of teachers, that policy introductions that attempted to deal with the issue had had little impact and that radical action was needing to be taken. Given this, it is not

surprising that teachers in the focus groups and interviews also felt that their working hours and patterns were negatively contributing to their workplace wellbeing. An important finding from exploring the issue of workload with these participants was the references to early career teachers. There was one newly qualified teacher as part of the sample yet early career teachers and their workload demands were mentioned in four out of the five sessions. Research quotes differing numbers but using DfE numbers then it can be stated that 12.8% of teachers left the profession within their first year in 2021/2022. This represents over 4,000 teachers leaving within the first year. As the literature review states, ECTs say that they expect a high workload when they enter the profession, but the reality of the workload is much greater than they anticipated and unmanageable. Other teachers in my study showed clear empathy for ECTs and although not ECTs themselves, included about the higher workload that ECTs would face due to lack of experience and the extra evidence they are required to gather to 'pass' their first-year teaching. The statements made by teachers in this study are well supported by the literature and add to the evidence that teacher workload is still too high and is having negative consequences for their workplace wellbeing.

4.29 Conclusion – Teacher wellbeing

This final part of stage one of this thesis sought to answer the research question of what secondary teachers in England consider affecting their workplace wellbeing. Following a qualitative phenomenological research design, thematic analysis was conducted using the transcripts produced from the five Zoom sessions.

All areas of workplace wellbeing that were probed during the focus groups and interviews gave rise to accounts of experiences that the teachers in the sample had themselves experienced or witnessed in others. Workload and other demands being asked of them due to government and whole initiatives are contributing to a poor work-life balance which seems especially severe for those early in their teaching career or with caring responsibilities for a young family. Leadership was said to exacerbate issues with workload, and this is where issues with relationships with colleagues were also found, in the most part, to originate. Daily job demands seemed to be magnified by poorly resourced schools, with teachers lacking the most basic of equipment such as pens. Buildings being in disrepair was also a recurrent theme. The lack of a central meeting space for teachers, or even space away from students seemed to increase their stress and take away from them developing their practice by not providing them with any opportunities to converse with colleague and share pedagogical approaches for subject matter, or strategies for classroom management. Overall, teachers are wanting more opportunities to collaborate with one another, in a safe and private space. They want school leaders to pay them more respect and where assigning workload, as much as possible, keep work requests to those that impact directly on the teachers' students rather work being generated for accountability measures.

4.30 Next steps

As per the research design, the next stage of this thesis addresses the construction of the TPAT. Exploratory and confirmatory factor analysis is presented and findings from the unvalidated 52-item TPAT and the final 16-item validated version are discussed.

5.0 Stage Two – Teacher Productivity Assessment Tool Construction

One of the main aims of this thesis is to produce a tool that measures the self-perceived productivity of secondary school teachers in England.

This chapter details the method that was implemented to achieve this. Following several stages of development, a 16-item, 5-point Likert scale questionnaire containing six distinct dimensions was produced which was then assessed to be a reliable tool in the assessment of self-perceived teacher productivity.

Findings included significant relationships between performance management, behaviour management, communication, and extra-curricular tasks with feelings of productivity.

5.01 Method

The following process of tool development and testing was used as the basis for the method employed, which was adapted from Streiner et al. (2015) a tool which could be used to assess self-perceived productivity of secondary teachers was developed due to there not being one available that addressed this. Without this tool, explorations into possible relationships between teacher productivity and stress could not be undertaken, the purpose of this thesis. Findings on types of work and feelings of productivity towards this work could not be made without the development of a new tool and therefore, no insight into what could be causing the increased levels of stress, burnout and low retention rates reported of the secondary teacher workforce in England could be provided.

Figure 21.0 Tool development and process chart, (Streiner et al., 2015) pp.4
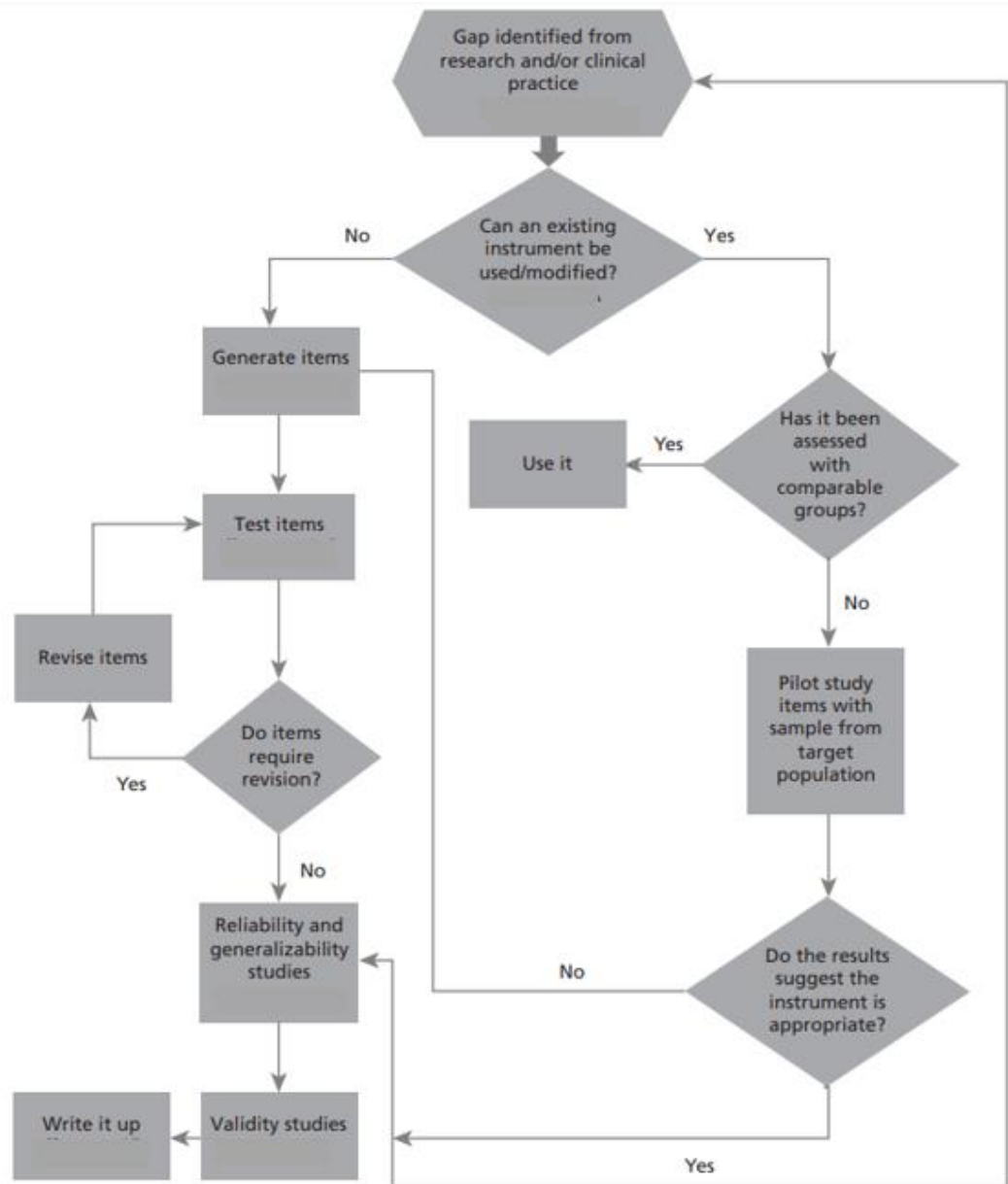
Software programmes Nvivo 12, IBM® SPSS® 27 and IBM® Amos® 27 were used as part of item development, exploratory and confirmatory factor analysis for the productivity assessment tool as well as to perform tests for validity and reliability such as Cronbach Alpha, Harmans Single Factor Test, and construct validity (including tests for convergent and discriminant validity).

5.02 Item Generation

The development of the TPAT was imperative to meet the research aim:

- To develop a tool that measures the productivity of secondary teachers in England

And to address the questions

1. What do England based secondary teachers consider as 'productivity' in terms of their everyday job role?
2. Is there a relationship between self-reported levels of stress, the frequency of task completion and feelings of productivity scores among secondary teachers?

When developing the items to be included, to be the empirical indicators, the analysis

from stage one and tasks, duties and responsibilities teachers had commented upon

used.

When looking at the themes and the tasks, duties and responsibilities contained within the

transcript excerpts that formed them, it was clear that the codes within 'communication'

were linked to the pastoral care of students such as having meetings with parents and

carers or making phone calls, so these sections were combined to be 'pastoral care and

communication'. Going back to the stage one analysis and transcript excerpts resulted in

26 core empirical indicators of teacher productivity.

The responses for frequency of task completion were measured on a 5-point Likert scale of

never, rarely, sometimes, often, very often. These words of measurement were decided

upon rather than a scale of 'never' to 'always' as it was clear that a teachers list of tasks,

duties or responsibilities was vast and they could not 'always' complete one task as that

would imply that their time was taken up with the singular rather than plural. Phrasing of

'very often' allowed them to provide the information that it was an aspect of their role that

had more prominence without detracting from other areas. Where a teacher answered 'never' an additional free text answer field was included to gather information as to why. For example, 'I plan/deliver after school clubs', this featured heavily in some of the transcripts but for some teachers was not a part of their role. Also, for the 'performance management', one of the participants did have lesson observations but these were not linked to performance management procedures and purely for feedback and professional development purposes, so it was necessary to have the option of 'never' (although this was the only instance of this, for other participants they were). The need to include how often a task was completed was due to wanting to determine in the analysis of the results from the questionnaire if these tasks were representative of the teaching community. For example, if 'I assist in the planning of schemes of work' had a response of more than never for just 10% of the sampled population perhaps this operation was not representative of a teacher's role but more specific to the teachers within my sample. Also, the rate of task completion could be linked to the responses for the Teacher Stress Inventory e.g., did a lower rate of certain task completion results in a lower stress manifestation or vice versa. Including frequency of task completion would also allow for a direct comparison with the feeling of productivity associated with it – did a teacher do it a lot and did it make them feel productive? If not, this could imply that teachers are spending more of their time on tasks that do not contribute to the learning or life enrichment of their students. Also, frequency was referring to the act of 'doing'. From the stage analysis teachers felt that 'doing' things more or less often could be reflective of their productivity. At the start of the tool the first section had a short introduction to help participants with their answers for that section this was;

"These questions relate to your productivity in your everyday role as a Teacher 'things you do that contribute to the learning and enrich the lives of your students'
An example...

'I assist in the planning of schemes of work' If your school / department have schemes of work do you take part in the planning of these? If you have been but not often select the option most appropriate to you."

The 26 empirical indicators formed are:

Teaching related tasks

1. I provide oral feedback to my students
2. I provide written feedback to my students
3. I plan each of my classes' lessons for the week ahead using a standardised pro forma
4. I plan each of my classes' lessons for the week ahead using my own method
5. I assist in the planning of schemes of work
6. I prepare worksheets / handouts for each of my lessons
7. I prepare physical activities for my lessons where appropriate (e.g., sporting activity, science experiment)
8. I prepare differentiated tasks for learners in my classes
9. I prepare my classroom environment prior to my lessons
10. I prepare tasks for my learners that allow for graded feedback
11. I prepare tasks for my learners that are designed to actively engage them

Wider school and extra-curricular

12. I plan and/or deliver a school club(s)
13. I plan and/or deliver a school trip(s)
14. I perform a morning/break/after school duty shift(s)
15. I attend meetings about new whole school initiatives
16. I implement new whole school initiatives

Performance Management

17. I have classroom observations linked to my performance management
18. I have reviews of the feedback I give to my students linked to my performance management
19. I have reviews of the grades my students achieve linked to my performance management
20. I attend meetings about my performance management

Pastoral care and communication

21. I speak to and/or meet with parents and carers outside of parents evening
22. I speak to and/or meet with parents and carers as part of parent evenings
23. I complete written reports on student progress and behaviour
24. I follow my school's behaviour management policy

25. I complete tasks associated with my school's behaviour management policy (e.g. logging behaviour incidents)
26. I attend meetings about the pastoral care of my / whole school students

It was also important to gather information as how completing each of these operations contributed to a teacher's 'feeling of productivity'. This was explicitly linked to the previously derived definition *'things you do that contribute to the learning and enrich the lives of your students'.* The same 5-point Likert scale was included of never to very often so as not to confuse participants and it was appropriate for the following reasons. Using 'always' for these questions would have implied that every task had the possibility of 'always' being productive but it was clear from the transcripts that in some instances, for example, speaking with parents or carers could be seen as productive but there were also instances where the opposite was, and this was a common narrative, so the highest point of the scale being 'very often' allowed for that flexibility within the responses of participants.

The same items were used but this time were worded slightly differently to make the distinction between rate of task completion and 'feeling' of productivity that it gave the teacher. Again, an example was provided for the first section of questions, and the definition of productivity was featured in bold font at the start of each section to keep that at the forefront of respondents' minds. Examples of the change of wording are provided below.

- Providing oral feedback to my students versus I provide oral feedback to my students
- Providing written feedback to my students versus I provide written feedback to my students
- Planning each of my classes lessons for the week ahead using a standardised pro forma versus I plan each of my classes' lessons for the week ahead using a standardised pro forma

- Planning each of my classes lessons for the week ahead using my own method versus I plan each of my classes' lessons for the week ahead using my own method

Items that formed the TPAT totalled 52.

Demographic Questions

As well as the productivity questions, items to gather data about the demographics of participants was also collected. This was gathered to be able to compare the sample of the general teacher population data reported by the UK government.

Demographic questions included were:

1. How many years have you been teaching? Slider style format of 0 to 40 years
2. What is your current profession level? Multiple choice format
3. What region of England do you currently teach in? Drop down format
4. What type of school do you teach in? Multiple choice format
5. What subject(s) do you teach? Multiple choice – tick list to allow for multiple subjects to be selected
6. What is the percentage of pupil premium students in your school? Slider format
7. What is the percentage of students in your school with English as an additional language? Slider format
8. What is the percentage of students in your school with special educational needs? Slider format
9. What is your average class size? Slider format
10. Which gender do you identify as? Drop down format
11. Which best describes your ethnic group? Drop down format
12. What is your age? Free answer text field
13. Do you have dependents? Drop down format
14. What is your current relationship status? Drop down format
15. What is your highest education level? Drop down format

Limitations of the questionnaire

There are general limitations that all researchers face when using a questionnaire (Beiske, 2007). One of these is explained as one not being able to necessarily explore the underlying reasons for a response. However, as there has been completed a first qualitative phase and an extensive literature review, this negates the inability to use the findings in the exploration of relationships and underlying reasons.

A possible limitation of the tool is the number of items that it contains – being too many. However, links between number of items and reductions in response rate are ambiguous. Kost and da Rosa (2018) found that shorter length questionnaires did have a higher response rate. However, Bolt et al. (2014) found that reducing the length of a questionnaire did not increase response rate. The risk with more questions is that satisficing occurs meaning that participants could lose the meaning of questions by speeding up and giving inaccurate responses.

De Vaus and de Vaus (2013) recommend splitting up a questionnaire into distinct sections to prevent respondent fatigue and boredom and this recommendation was followed to construct the TPAT. To reduce response time, question formats such as sliders, drop down menus and tick lists were also used. Free answer text fields were only used where necessary.

To reduce the length of the Teacher Productivity Assessment some could suggest issuing the TPAT 52 items and the Teacher Stress Inventory (discussed later) separately. However, a homogenous sample was needed to draw out any significant relationships between empirical indicators in the TPAT and the Teacher Stress Inventory.

Following the processes of exploratory and confirmatory factor analysis it is assumed that some items are removed, and this reduces the overall length. Once analysis of response rate, time etc have been completed then the limitations of the questionnaire can be retrospectively discussed in relation to the above.

Inclusion of the Teacher Stress Inventory

To explore the workplace wellbeing of teachers in England a pre-existing measurement tool was chosen – this being the Teacher Stress Inventory (TSI) created by Fimian (1984) . A pre-existing tool was selected as one was available that addressed the research aims and questions. This test (the TSI) has also been used repeatedly which would increase the validity of any correlational findings. The TSI, originally developed in 1984, has now been tested and trialled around the world. Kourmousi et al. (2015b) translated the TSI for testing with 3,447 teachers in Greece. All Cronbach Alpha Coefficients were above 0.70. Following confirmatory factor analysis, they were able to conclude that the TSI does have validated psychometric properties for measuring stress in teachers (comparative fix index = 0.0956; root mean square error of approximation = 0.079; goodness of fit index = 0.951). Boshoff et al. (2018) tested the TSI in South Africa with 409 teacher and found significant correlations between all measures of psychological and physical health and validated the criterion detailed in the scale. Lasebikan (2016) used the TSI with a representative sample of 471 Nigerian teachers and was able to conclude that the subscales of the TSI were supported by all ten factors have Cronbach Alpha coefficients of 0.7 and above. Fimian and Fastenau (1990) revisited the TSI that Fimian themselves had devised to test the validity and reliability again. Again, they found that all five sources of stress and all five stress manifestations were significantly related to each other. The global and repeated use of the TSI and the confirmative results from previous research support its inclusion in my research to measure teacher stress.

A test with a focus on stress was chosen due to worldwide concerns regarding teacher stress (Lemerle and Stewart, 2005). A study conducted in Northern Ireland in 2002 to

investigate teacher wellbeing found that job related stress and anxiety placed highest in reasons why teachers called a national helpline to seek support (DfE, 2002). Similarly, a report on the wellbeing of teachers in Scotland stated that 25% reported their jobs to 'very stressful' and this was also correlated with how they scored their physical health with most being in 'fair' or 'poor' general health (Dunlop and Macdonald, 2004). The Teacher Wellbeing Index (2023) reported that over 80% of teachers are experiencing work-related stress.

The TSI also uses a 5-point Likert scale, but this scale ranges from 'no strength/not noticeable' to 'major strength/extremely noticeable'. There are 49 items contained within nine dimensions these being the five stress sources of time management, professional distress, professional investment, work-related stressors, discipline and motivation and the five manifestations of gastrointestinal, cardiovascular, behavioural, emotional and fatigue.

5.03 Sampling

For the pilot of the questionnaire to gather feedback social media was used to recruit participants. This results in 25 participants being recruited between 18 December 2019 and 04 January 2020. Eleven of the responses were fully completed. 46% of teachers were in the Northwest of England. The average number of years teaching was 15.8 with 62% of those responding having additional responsibilities than that of a classroom teacher. The average age was 40.7 years with 73% of those taking part identifying as female and 82% describing their ethnicity as 'white British'.

For the nationwide rollout, as with Stage one, sampling employed a non-probability snowball technique and advertisements were placed on multiple social media platforms including Twitter and Facebook (including ten teaching related Facebook groups).

A list of every state maintained secondary in England was requested along with the contact details via a 'Freedom of Information Request' to the Department for Education. This resulted in the receiving the direct contact details for 24,598 schools all of which were contacted using an email mail merge. Regional union representatives (226) at the NEU, were asked to forward on the request for participants to all members in their region.

5.04 Detailed Sample Demographics

Demographical data was collected from participants to determine if the sample formed a representative picture of the secondary teacher workforce in England, but also to allow for later multivariate analysis regarding teacher characteristics and self-reported stress.

The sample recruited was compared against government data gathered from the Department for Educations 'School Workforce in England' report (GOV.UK, 2021) wherever possible. Where 'prefer not to say' was selected, this data was omitted.

Table 2.0: Teacher demographics of sample vs national data

Demographic	N	Mean	Categories	Sample %	National population %
Age of Teacher	127	38.91	Under 25	5.3	4.9
			25-29	14.9	15.3
			30-39	35.3	33.2
			40-49	25.0	27.5
			50-59	16.4	16.5
			60 and over	3.1	2.6
Gender	128	NA	Female	74.2	64.7
			Male	25.8	35.3
Ethnicity*	129	NA	White British	89.1	85.1
			White Other	7.0	3.8
			Asian British	< 1	4.8
			White & Asian	< 1	1.3
Years Teaching	159	12	5 years or less	25.7	Not reported
			6-10 years	23.2	
			11-15 years	21.3	
			15 + years	30.0	
Profession Level**	152	NA	Non-Management	44.0	50.5
			Low Management	12.5	Not reported
			Middle Management	30.0	38.3
			Senior Management	12.5	11.2
Level of education***	125	NA	Undergraduate	11.2	***
			PGCE	62.0	
			Masters	24.8	
			PhD	2.0	
Region of England	158	NA	Northeast	5.6	4.6
			Northwest	23.6	13.1
			Yorkshire and The Humber	3.7	9.6
			East Midlands	6.8	8.5
			West Midlands	12.4	11.3
			East of England	11.2	11.3
			Southeast	16.1	15.7
			Southwest	12.4	9.2
			London	4.3	16.6

Type of school	159	NA	Academy	60.3	60.9
			LEA	16.0	
			State maintained faith	6.0	
			Special	4.0	
			Other	7.0	
Subject Taught****	113	NA	Bucket 1	26.0	****
			Bucket 2	18.0	
			Bucket 3	40.0	
			Bucket 4	16.0	
Dependents	129	NA	Yes – 1 or more	24.8	Not reported
			Yes – 1	24.0	
			No	84.5	
Relationship Status	135	NA	Married/Civil Partnership	52.6	Not reported
			Cohabiting	19.2	
			Non-cohabiting	5.0	
			Single	11.8	

*Nationally 85.1% of teachers identify as 'white British' (GOV.UK, 2021). My sample had 89.1% of teachers identifying as 'white British' which is above the national picture. My study had no participants who identified as 'black British' but nationally this demographic accounts for 2.4% of the workforce.

** Low management = assistant head of department; Middle management = head of department, head of year; Senior management = assistant and deputy headteacher and headteacher

***Education level below that of undergraduate degree was not included as it is a statutory requirement for teachers in England to hold a degree of 2:2 or above. It was not possible to compare like for like in terms of national picture for teachers in England due to different methods of recording the information, but the report published by GOV.UK (2021) showed that 96.6% of teachers held a bachelor degree, PGCE or higher. 88.8% of participants in my study held a postgraduate qualification.

****The original data captured from teachers was not manageable due to the large number of different subjects taught and the number of teachers teaching one or more subjects. Therefore, the subject taught was recorded into the different 'bucket' classifications as part of the EBaccalaureate qualification classifications. The buckets are outlined below (teachers were classified by the highest-ranking bucket where they taught two or more subjects).

- Bucket 1 – English Language and English Literature
- Bucket 2 – Mathematics
- Bucket 3 – Sciences, Languages, History, Geography, Computer Science
- Bucket 4 – Art, Drama, Psychology, PE, RE, Business Studies, Engineering, ECDL, etc

5.05 Data Collection

Data were collected by online completion of the tool which was designed and hosted on Qualtrics[XM] platform. The TPAT also included items of the 'Teacher Stress Inventory' (TSI) (Fimian, 1984). To obtain an original copy (with no adaptations) of the TSI, as it was not readily available in online library catalogues, Dr Fimian was contacted directly on 22 October 2020 who then kindly provided an original copy the TSI 27 October 2020. Items from this document were transposed to the online designed questionnaire to form the final section of the productivity questionnaire.

Data were collected between 14 January 2021 and 9 April 2021 with a total of 315 responses being received. Data were examined before each stage of analysis to remove responses with three or more missing data that would affect the analyses involving those items. For analysis of the unvalidated 52-item TPAT before undergoing exploratory and confirmatory factor analysis the whole sample was used. Following this, data cleansing resulted in further deletion of participant responses as exploratory and confirmatory factor analysis must be performed with no missing data leaving 118 responses to inform exploratory and confirmatory factor analysis.

5.06 Results of unvalidated 52-item Teacher Productivity Assessment Tool

Before exploratory factor analysis was conducted to examine the construction and content of the questionnaire and determine the final question set to explore the relationships between teacher productivity and teacher stress, examination of the crude results from all questions that were initially included was conducted to see if any patterns were present

that supported the findings from phase one regarding what tasks teachers completed and how productive these made them feel. This was done by constructing charts for the mean of each item in terms of frequency of answer. This allowed visual comparison of the responses for 'frequency of task completion' to 'feelings of productivity' to examine, at a basic level if there were any differences apparent immediately. This was also conducted to determine if the questions with the highest frequencies, or the questions with the largest differences in terms of frequency and feeling were supported in literature and also, if these questions would remain as part of the final question set following exploratory factor analysis.

5.07 Results

Table 3.0: Top 10 Tasks by mean rate of completion across all themes of task

Task	Frequency Average
follow BM policy	4.7
complete tasks associated with BM policy	4.7
speak / meet with parents and carers at parent evenings	4.6
Oral Feedback	4.4
Prepare tasks designed to actively engage	4.3
Attend meetings about new WSI	4.3
I attend meetings about the pastoral care	4.1
Perform shift(s)	4.1
Assist in planning SOW	4.0
Own method lesson plan	3.9

The most frequently completed tasks were that of 'following behaviour management policy' and 'completing tasks associated with behaviour management policy' with a mean rate of 4.7 demonstrating a response of 'very often'. The lowest rate of any task being completed with a mean rate of 2.0 was 'using a set pro forma' to plan lessons.

Table 4.0: Top 10 Tasks by mean rate of feeling of productivity across all themes of task

Task	Feeling Average
Prepare tasks designed to actively engage	4.3
Oral Feedback	4.2
follow BM policy	4.0

Assist in planning SOW	3.9
Own method lesson plan	3.9
Differentiate	3.8
complete tasks associated with BM policy	3.7
speak / meet with parents and carers at parent evenings	3.7
I attend meetings about the pastoral care	3.7
prepare worksheets	3.7

The top-rated task in terms of making teachers feel productive in relation to completing it was 'preparing tasks designed to actively engage'. The lowest ranked task in terms of feelings of productivity was again 'using a set pro forma to plan lessons'.

Teaching Related Tasks

Figure 22.0: Graph demonstrating mean of responses to each question for frequency versus feeling
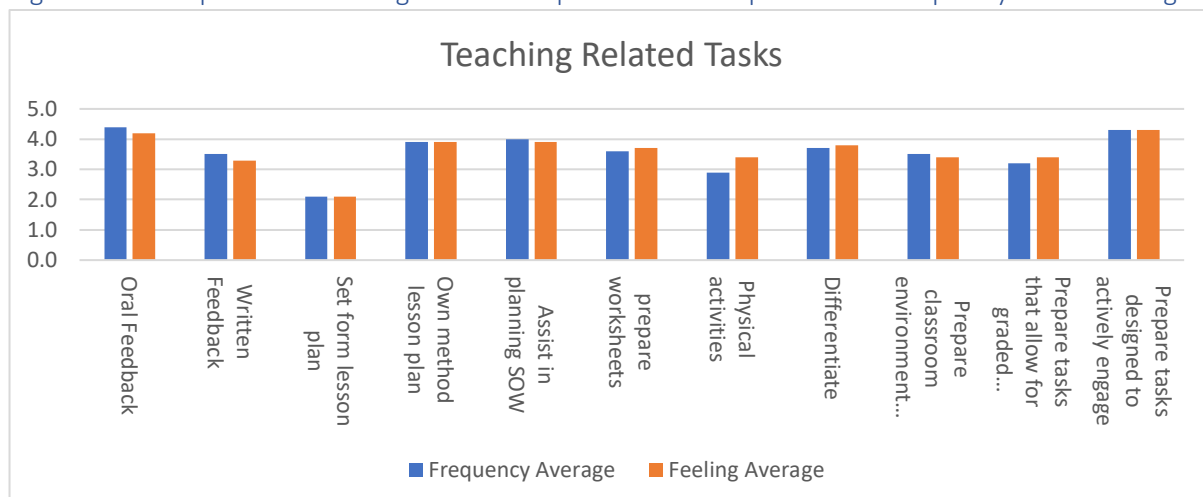
There were no substantial differences in the frequency of completing teacher related tasks and the feelings of productivity surrounding them. Lesson planning use of a set pro forma had the lowest frequency of completion and feelings of productivity. Preparing engaging activities had the highest frequency of completion and feelings of productivity. Preparing physical activities had one of lowest rates of frequency but had largest difference in terms of making feel productive. Providing oral and written feedback both had a score difference of -0.2 in terms of frequency of completion and feeling productive.

Wider School and Extra Curricular

Figure 23.0: Graph demonstrating mean of responses to each question for frequency versus feeling
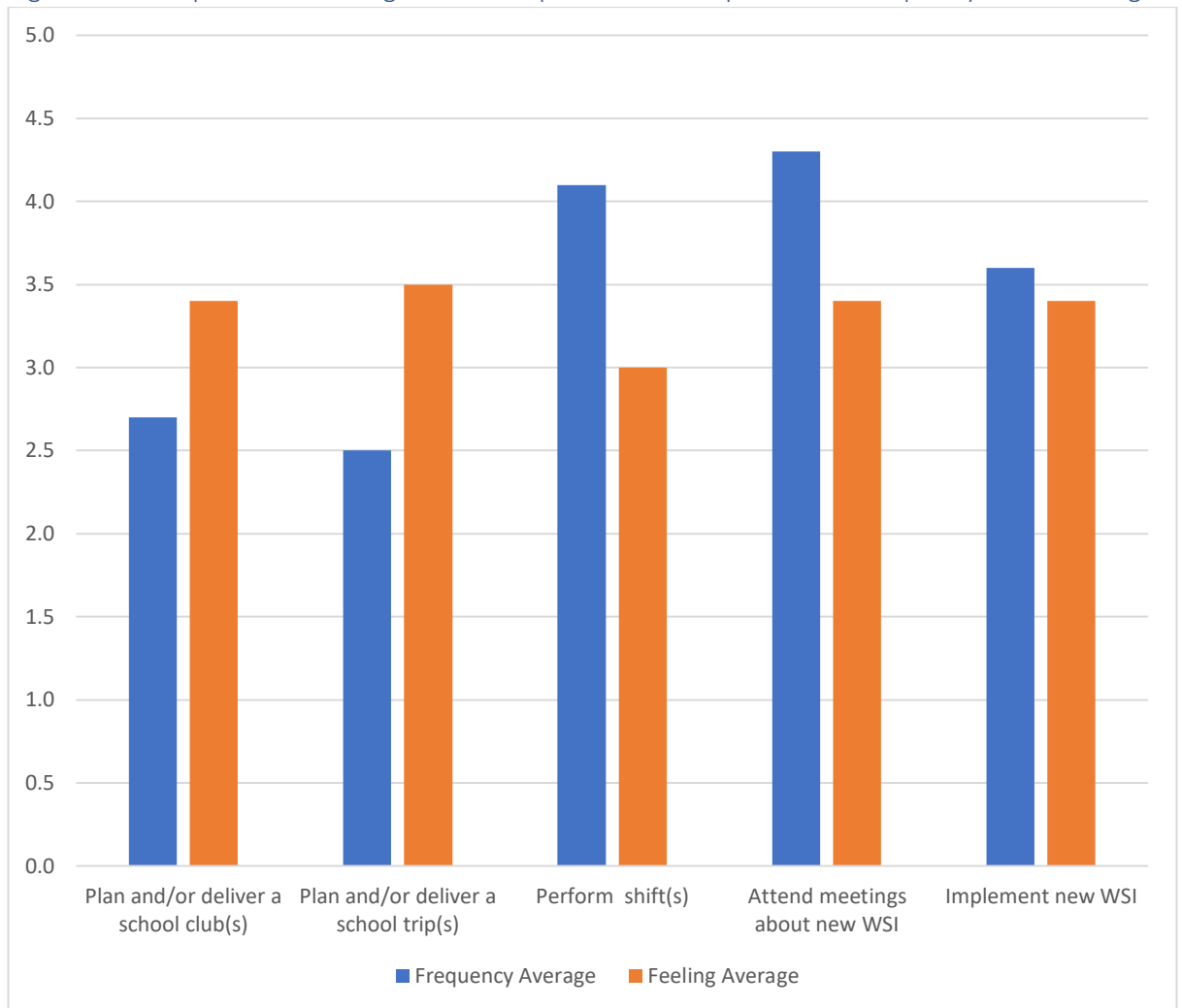
Although the least frequently performed, planning and delivering after school clubs and school trips made teachers feel the most productive. These also had the only positive difference in this set of questions. Performing duty shifts and attending meetings about whole school initiatives had the largest negative difference between frequency and feelings of productivity.

Performance Management

Figure 24.0: Graph demonstrating mean of responses to each question for frequency versus feeling
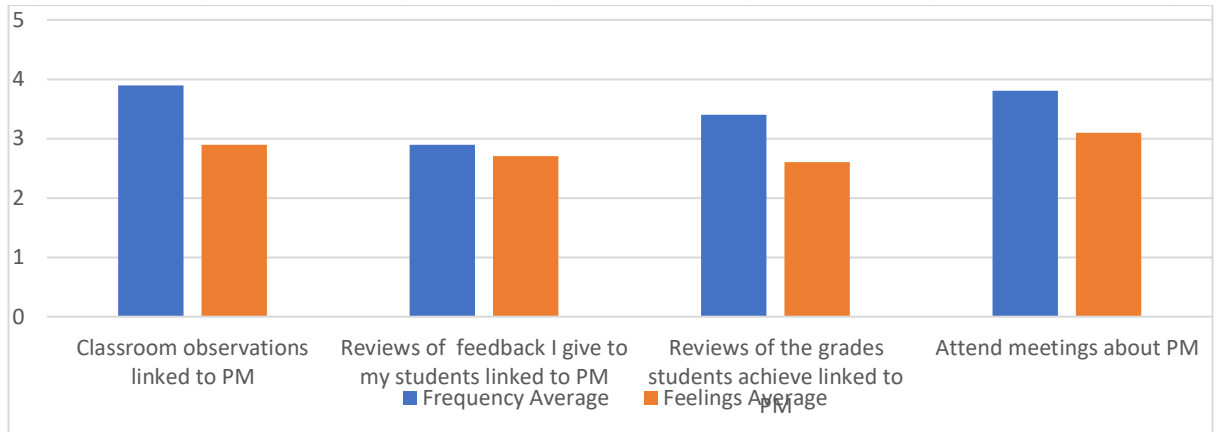
All activities completed as part of performance management had lower associated feelings of productivity. The largest negative difference was for classroom observations (-1.0) and reviews of student grades (-0.9) linked to performance management. This represents teachers responding they 'sometimes' have classroom observations linked to their performance management but 'rarely' feel productive after them. The mean for feelings of productivity in these responses represent 'rarely' or 'sometimes' in all cases.

Behaviour Management

Figure 25.0: Graph demonstrating mean of responses to each question for frequency versus feeling
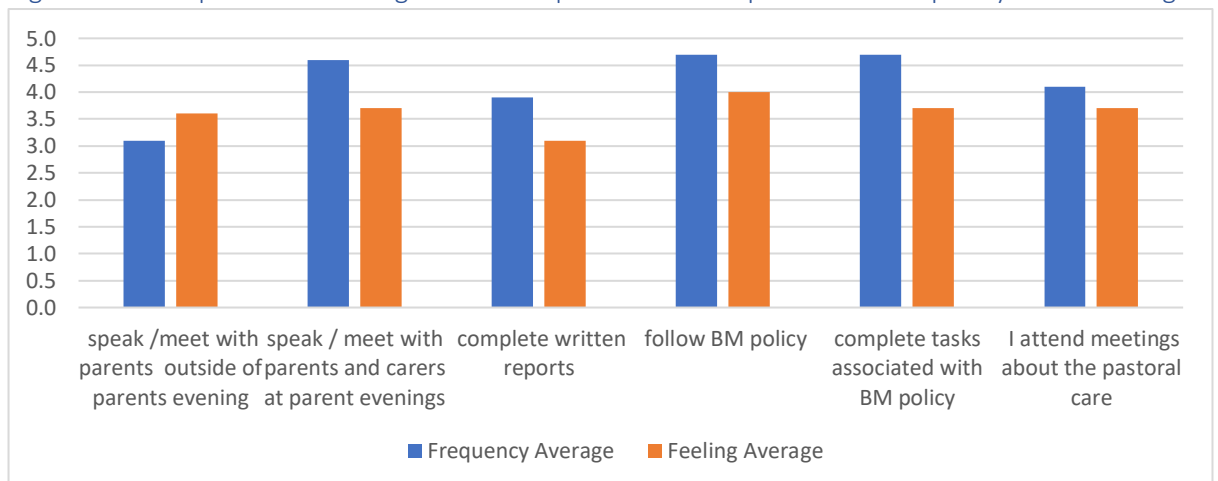
There was only one task which gave greater feelings of productivity than frequency when it was completed – speaking with parents outside of parents evening. Completing tasks associated with a behaviour policy was a whole average point below the frequency in terms of feelings of productivity. The tasks in this section only make teachers feel productive 'sometimes' when they complete them except following the behaviour policy which is classed as 'often'.

5.08 Discussion

The findings from the original format questionnaire add to what was learned in stage one of this study regarding what the productive teacher is and what the productive teacher looks like in their everyday job role. There are areas of similarity and of difference each of which will be discussed in turn.

Tasks related to performance management had the lowest frequency overall, however, they also had the lowest feelings of productivity associated with them as well. Literature would support this and is highly critical of performance management practices (Page, 2015) and instead of driving up standards has been stated to now be a 'millstone' to teachers (Forrester, 2011) which do not ultimately raise the quality of teaching and learning (Gleeson, 2011). This would support the low feelings of productivity for the teachers taking part in my study both in the interviews and focus groups and in the questionnaire. The only result to score lower was found in 'teaching related tasks' which was 'using a standard pro forma' for lesson planning. These results may be linked. It is often the case that teachers are required to complete standardised lesson plans as part of the lesson observation process. During Stage one teachers did not comment negatively on lesson observations

however, the results from the questionnaire show that teachers rarely felt productive when taking part in them. The difference between the rate of completion and feeling of productivity was also the joint highest with a difference of -1.0 in mean scores. A study by Page (2015) supports the low feelings of productivity found in my results. Although having pre-arranged lesson observations were found to lower anxiety and help teachers demonstrate their 'best practice', the value in terms of a real indicator of performance were limited These findings could suggest that these are not perceived to reflect performance and therefore productivity by teachers themselves. By looking at the definition I provided to teachers the low feelings of productivity can also be explained. The definition explicitly asked teachers to judge their feelings against 'the things you do that contribute to the learning and life chances of your students'. It could be posited that lesson observations are perceived to detract from, rather than improve their practice and in turn represent a drain on their time. These explanations could support what is documented in literature about monitoring and scrutiny within the teaching profession as well as previously mentioned MARRA procedures that add to teacher workload and as stated by teachers impact upon their 'time' but do not improve practice (Ball, 2011; Butt and Lance, 2005; Forrester, 2011; Gleeson and Husbands, 2003). Although classroom observations had the largest difference between frequency and feeling, it is important to note that taking part in classroom observations was not the lowest scoring in terms of feeling of productivity. The task that scored the lowest within performance management for feelings of productivity was reviews of the grade's students achieve. The literature review details extensively the issues with using test scores as a basis for judging teacher performance. Walberg et al. (1986) found that out of nine variables student motivation rather than quality of instruction had the largest impact on student attainment. Schalock et al. (1993)

found that the socio-economic status of the student played the largest part in their attainment. The differences in the progress made by students across different regions of England was also discussed with students in the Northeast of England making on average half a grade lower progress than their London counterparts. With extraneous factors affecting student attainment being multiple and well documented, the results found in this study, that reviewing the grades that a teachers students achieve does not make them feel productive, are not surprising – they do not feel that these reviews contribute to the learning or life chances of their students.

Behaviour management tasks were the most frequently completed by teachers from the questionnaire and demonstrated some of the largest negative differences in feelings versus frequency. In the coding of the transcripts 'behaviour management' was the second highest referenced theme supporting this finding that tasks related to behaviour management are a frequent part of a teacher's everyday job role. Literature also supports the findings from the questionnaire and transcripts. Research has demonstrated that dealing with behaviour management is time consuming for teachers (Yassine et al., 2020; Cains and Brown, 1996) in fact, a study by Gormley et al. (2021) found that on average teachers were spending 2.4 hours per week of their classroom time managing the 'off-task' behaviour of their students. Speaking with parents and carers outside of parent evenings had the largest positive difference between frequency and feelings, this could imply that although teachers do this 'sometimes' the impact of it is greater on how they feel following those conversations. Could these conversations lead to better behaviour management and classroom environment? The literature available to support this is limited and amongst the research community there is believed to be little empirical evidence on the impact of teacher-parent

relationships and teacher productivity (Laluvein, 2006). However, there is some evidence that by parents being more involved in their child's schooling (of which teacher-parent communication could play a role) then there is an increase in student aspirations, learning, academic achievement of the child and also, importantly, less off-task behaviour (DePlanty et al., 2007; Fan and Chen, 2001). It has also been found that when there is effective communication with parents an increase in teacher morale and self-efficacy can be found (Hoover-Dempsey et al., 2002; Risko and Walker-Dalhouse, 2009). Completing written reports had the lowest mean rate of feeling of productivity which supports the negative feelings towards administrative tasks documented in my focus groups and interviews.

One area of great similarity between the teachers in phase one of my study and those that completed the questionnaire was that of planning and delivering school clubs and trips. They had some of the lowest frequency but at least a +0.7 difference in mean score in regard to feelings of productivity. Teachers within the interviews and focus groups had commented how delivering activities outside the classroom helped them improve engagement and build relationships as well as contribute to the future life chances of their students. The findings of the questionnaire are supported by the statements made by the teachers in the focus groups and interviews. Moran (2017) found that teachers who took part in, or supervised, extra-curricular activities had higher levels of job satisfaction, organisation commitment, job performance and longevity in the profession. This finding is also supported by Brady and Wilson (2020) discussed in the literature review – that teachers in the private sector who were able to spend more time with students, had a greater sense of fulfilment whereas teacher time in state schools was taken by more administrative tasks that took them away from interacting with students reducing this.

Overall, the highest ranked task in terms of feelings of productivity was that of 'planning tasks that actively engage students. This supports the theme of 'teaching related tasks' having the most coded references and that teachers classed tasks that directly impact on the learning that happened in their classrooms as the most productive tasks they could complete.

5.09 Stage Two: Tool Construction Procedure

Following qualitative thematic analysis from phase one of this research, 56 core items were created, 26 focusing on frequency and 26 on feelings of productivity which formed the unvalidated 52-item TPAT.

To produce the tool, exploratory factor analysis (EFA) was the accepted method as this is widely acknowledged in the development of Likert Scales (Atchley, 2019) and is also a method that allows the researchers to infer meaning from data and drive theory development (Zhang et al., 2010). This was done using IBM® SPSS® 27. Exploratory Factor Analysis (EFA) is a multivariate statistical method that reduces data into condensed smaller summary variables by recognising inherent factors that account for patterns of collinearity between the variables (Watson, 2017; Watkins, 2018). EFA is frequently selected and used within in the social sciences as part of research design that seeks to validate scales of items that have been created for a questionnaire (Goretzko et al., 2019; Samuels, 2017). It was first used by Spearman in 1904 and is now considered the fundamental and most common tool in evaluation of measurements instruments (Mundfrom et al., 2005; Watkins, 2018; Baradaran and Ghorbani, 2020). There are multiple studies across disciplines that have employed EFA to validate the scales of a newly constructed or adapted questionnaire. This is also the case within educational research Chen (2019) developed a five factor Teacher Emotion Inventory due to no there being no pre-existing test that could be selected. They also used the EFA method of maximum likelihood with an oblique rotation. This process for EFA is also recommended by Goretzko et al. (2019) if confirmatory factor analysis is to be performed. Iwu et al. (2018) developed a 5-point Likert scale (the same as my scale) to explore teacher motivation. They took questions from pre-existing validated scales and

combined them in order to be able to answer their research questions. De Smul et al. (2018) developed their own self reporting instrument – the 'Teacher Self Efficacy' scale in Belgium. They were able to provide statistically robust results that validated their scale. Like my tool, theirs also used a 5-point Likert scale and maximum likelihood. Their sample was also very similar to mine in terms of gender, age and number of years teaching (38 years average age; 81.3 female; average 16.4 years teaching).

Confirmatory factor analysis following EFA was conducted to provide an indication of the construct validity of the tool using IBM® Amos® 27. Performing both types of factor analysis in tool construction is well documented and has been used in the development of many scales including by Abbott (2003) in the development of their professional opinion scale and Simonsen et al. (2020) in the development of the classroom management observation tool plus many others (Benschop et al., 2020; Chen and Raab, 2016; Erdem, 2020; Sung et al., 2019).

Data used for EFA were gathered from 118 secondary school teachers in England who currently work in state-maintained schools and delivered Level 2 qualifications (GCSE). The average age of teachers in the sample was 38.9 years, mean time in teaching was 12 years and 67.0% of teachers identified as female. Most participants were not managers within the school (44.0%). All regions of England had representation with the Northwest (23.6%) region having the most representation. 60.3% of teachers worked in academy school and the sciences, languages, geography, history, computer science and English and/or English Literature accounted for 83.6% of subjects taught. The average class size was 26.0 (SD=6.03) and teachers taught on average 31.4% pupil premium (SD=18.28), 15.2% English

as an additional language (SD=17.88) and 24.9% special educational needs and disability students (SD=20.42) students.

Multiple rounds of factor analysis were conducted to identify where cross loadings or loadings below the threshold were present to allow for item reduction and to measure the relationships between variables to identify categories, or factors, that represented a distinct concept of self-perceived teacher productivity.

5.10 Limitations within procedure

Confirmatory Factor Analysis

As discussed above the use of EFA and CFA for the purposes of tool construction are well documented. However, there is still much debate about whether both or only one should be included and in which order (Abbott, 2003; Chan and Idris, 2017; Fabrigar et al., 1999; Goretzko et al., 2019; Hurley et al., 1997; Marsh et al., 2020; Orçan, 2018; Samuels, 2017; Watkins, 2018). It is also documented that if conducting CFA and EFA then a split sample strategy should be employed (Shrestha, 2021; Hox, 2021). However, due to my sample size not allowing for a split sample strategy (n=118), CFA was conducted on the same data set. The pitfalls of this are that ultimately, I could have been confirming the constructs already made during EFA. However, Zhou (2022) found when conducting an investigation into split versus whole sample strategies in SEM that the split-data strategy was less effective in the evaluation of cross-loadings and number of factors in all of their simulation conditions. They concluded that performing a split-data strategy was not necessary and only acceptable to validate a structure identified during EFA when there was a large sample – over 1,000, and the model is of good quality e.g. no cross loadings or large primary loadings.

Therefore, although I recognise that much literature does state that the same data set should not be used, I have included the analysis and findings from the CFA performed. Ultimately, the tool produced would have the same questions if relying purely upon EFA due to the findings from the reliability analyses performed during those stages, and EFA within tool construction is a legitimate method when used in isolation – with no CFA phase preceding or following (Baradaran and Ghorbani, 2020; Chan and Idris, 2017; Fabrigar et al., 1999; Goretzko et al., 2019; Lloret et al., 2017; Watkins, 2018).

Common Method Bias

Common method biases have been a problem discussed in behavioural research for the past 60 years (Podsakoff et al., 2003) and are deemed to be a main source of measurement error which can ultimately threaten the validity that is drawn between relationships when exploring underlying constructs. The biases account for variances and therefore these are referred to as 'common method variance'. Bagozzi and Yi (1991) give a clear and succinct distinction of common method variance.

> *"Method variance refers to variance that is attributable to the measurement method rather than to the construct of interest. The term method refers to the form of measurement at different levels of abstraction, such as the content of specific items, scale type, response format, and the general context. At a more abstract level, method effects might be interpreted in terms of response biases such as halo effects, social desirability, acquiescence, leniency effects, or yea- and nay-saying".* (pp. 426)

There are four main areas that can cause common method biases and those relevant to this research are discussed below.

Common methods biases caused by the source or the participant(s)

Participants will want to appear to rational in their responses given and therefore might start to establish relationships between certain questions so that their responses seem in line with what they have given previously. This can lead to responses that lead to relationships being developed in data that are not occurring in a real-world setting. This is referred to as the *consistency motif* (Podsakoff et al., 2003). This could have occurred with each method chosen for data collection in my research – focus groups, interviews, and the questionnaire. However, the strength of this bias would be less for the online questionnaire due to there being no personal interaction between myself and participants. Participants can have their own ideas of relationships in certain situations, for example Smither et al. (1989) found that participants responses to scale ratings in terms of their job performance were affected by what they were told their job satisfaction was. Therefore, it is possible to assume that responses surrounding performance management could be biased in my research if participants believe they have not had favourable performance management outcomes – rating the feeling of productivity scores lower. This bias effect is referred to *'implicit theories and illusory correlations'* (Podsakoff et al., 2012).

Another bias which can be caused by participants is that of '*Social desirability'* which is explained as the "*need for social approval and acceptance and it being attained by means of culturally acceptable and appropriate behaviours*" (Crowne and Marlowe, 1964)(pp.109). This source is particularly applicable to the focus group sessions where participants could have responded with bias in reaction to what others in the group had said. However, the opportunity to collect data that was supported by the views of others, to provide more credence to factors those teachers felt contributed to their productivity outweighed this risk. I also found that during the focus groups, where consensus was

reached amongst participants, it was, overall, supported by examples of their own practice or that of their colleagues.

Finally, the mood state, including transient mood state could have caused bias in the method used (P. M. Podsakoff et al., 2012). As data were collected during the Covid-19 pandemic it could be argued that there was an environment that could have been causing a negative mood state. My questionnaire data were collected during and shortly after the second lockdown in the UK in 2021. The literature surrounding teacher stress and workplace wellbeing published prior to my research also suggests that some of my teachers were in a negative mood state due to their work pressures. Low mood was found in my findings from the Teacher Stress Inventory (Fimian, 1988) however, the findings were in line with pre-Covid-19 pandemic published literature.

Common method biases caused by the characteristics of items in the measure

Biases caused by the item characteristics themselves are defined by Cronbach (1946) as

> "a *psychological test or educational test is constructed by choosing items of the desired content, and refining them by empirical techniques. The assumption is generally made, and validated as well as possible, that what the test measures is determined by the content of the items. Yet the final score of the person on any test is a composite of effects resulting from the content of the item and effects resulting from the form of the item used. A test supposedly measuring one variable may also be measuring another trait which would not influence the score if another type of item were used.*" (pp.475–476).

In terms of my research this bias could be caused by item complexity, scale format and negatively worded items. I made a conscious effort to remove jargon and unfamiliar words from the questionnaire and from the questions posed in the semi-structured interviews. The definition for productivity was also featured prominently for each set of questions to keep the focus on the content of the items. By not doing this, issues with item complexity could have been found to increase implicit theories coming into play with participant

responses (Gioia and Sims Jr, 1985). The necessity for use of a scale meant that this potential for bias could not be removed from the research, and although surveys using scales have shown to reduce the level of cognition that participants dedicate to items (Tourangeau et al., 2000) by putting items into distinct sections so as not to present a long continuous string of items it was hoped that this would negate this affect. Whilst most questions posed in the questionnaire itself were neither positive nor negative in terms of wording, during the qualitative phase I did include the word 'unproductive'. This was also used alongside 'productive' with the aim of balancing this effect. The Teacher Stress Inventory (Fimian, 1988) does include negative phrasing and due to the extensive use of this tool and its repeated proof of validity and reliability the inclusion of the question set from this can be deemed to cause minimal bias in terms of items.

Common method biases caused by item context

Wainer and Kiely (1987) state that effects caused by the context of items

> *"refer to any influence or interpretation that a subject might ascribe to an item solely because of its relation to the other items making up an instrument" (*pp. 187).

As previously discussed as part of the limitations of my survey construction the scale length can cause response fatigue (Timothy R Hinkin, 1995) although I tried to alleviate this with different sections for each question. The context of the questions can also be seen to induce a 'particular mood' in the participants meaning that they carry this forward in their ratings or responses. Whilst questions posed during the focus groups and interviews were aiming for reneging on influencing a mood by including positive and negative language, as a participant worked through the questionnaire it is not possible for me to rule out that certain items contained within it could have induced a certain mood.

Common method biases caused by measurement context

The time and location of a study can cause some method bias. As previously explained my study took place during the global Covid-19 pandemic which cannot be neglected as a particular context for the study. However, the TSI and focus group/interview data were collected over a 10-month period and statistical relationships found in the TSI data were supported by responses from the first phase qualitative phase and published literature. This could help support that the constructs were not heavily biased by the context in which the tool was 218relevant218. Finally, the use of interviews as a medium for gathering data as part of my method could have introduced measurement context bias. Richman et al. (1999) found that methods involving interviews increased the 'social desirability' of participants increasing bias in the source.

Procedural solutions

To control for common method bias in how I obtained my measures, I included my items from different sources (P. M. Podsakoff et al., 2012). I consulted various teachers of various levels of management, age, and years in teaching as well as subjects taught and from a cross section of schools across England. I also ensured that participants in the focus groups and interviews were to be kept anonymous. Only when I was provided explicit consent by a focus group or interview participant (as they wanted to 218be kept up to date on the outcomes of the research) did I keep their name and email address on record, and this was not matched to their record in the sample as each participant was given a pseudonym. This was also the same for responses gathered from the questionnaire as these were anonymous and I did not collect email addresses or any other identifying data.

5.11 Exploratory Factor Analysis – Results

The exploratory factor analysis (EFA) with a basic dimension reduction using varimax was conducted with a suppressed significance of below 0.32 as is standard and the eigenvalue set to greater-than-one (Kaiser, 1958). This would not produce a pattern matrix, but the output from this showed it was possible to get to 62% total variance explained with 12 factors (see appendix one). The rotated factor matrix included loadings onto specific factors showing some level of correlation and therefore the rotation was changed to direct oblimin as it allows for correlation between latent factors and interpretation (Fabrigar et al., 1999; Thompson, 2004).

The test was re-run using direct oblimin as the rotation. This did result in a pattern matrix being produced however, there were cross loadings on factors. Keriser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.643, below the ideal 0.70, although the *p*-value for Bartlett's Test of Sphericity (BtoS) was significant at 0.00. The Goodness-of-Fit Test (GoF) was significant at 0.00 which was not acceptable. Total Variance Explained (TVE) was still at 62.9% loading on to 17 factors. This analysis also resulted in cross loadings and values above one which should not be present. Some questions also did not meet the threshold and did not show their factor loading so were deleted including providing oral feedback, preparing actively engagement tasks and producing written reports. Before further analysis the significant level was set 0.50. This was done due to the sample size being 118. Hair et al. (2019) state that 0.40 confidence needs 200 participants and 0.50 needs 120, therefore at 118 participants, the significance was changed 0.50.

Further analysis resulted in a KMO of 0.643 and the TVE was 62.9%, however, there were no cross loadings. Multiple questionnaire items had shown no loading value, and these were deleted including using own method lesson plan, preparing tasks that allow for graded feedback (assessments) and preparing tasks to actively engage. Out of the eleven questionnaire items that were deleted, eight were from the questionnaire section 'teaching-related tasks'.

Further analysis which aimed to reduce the number of factors items was not successful and a pattern matrix was not produced. Therefore, the number of factors was increased back to 17 (going by the TVE value) and the delta value was changed to -0.80 to restrict the degree of obliqueness and have less correlated factors. Communalities were inspected before the next test was conducted and four items that were ≤0.31 were deleted including preparing worksheets and assisting in the planning of schemes of work.

There were now 22 TPAT items remaining and analysis of these resulted in a KMO of 0.693 but the TVE had decreased to 57.8% which was not acceptable. Again, communalities were inspected, and two questionnaire items were deleted which were ≤0.31 these being preparing physical activities and implementing whole school initiatives (see appendix one).

Table 5.0 shows that the 18 remaining items were loading on to just five factors (KMO=0.704; BtoS= 0.000). However, TVE was still at only 56.35% and the GoF was still significant. A pattern had now started to emerge with loadings for items regarding performance management consistently loading on to the same factor.

Table 5.0: Rotated factor loadings and reliability indices for 5-factor model with no factor loadings included

Pattern Matrix[a]					
	Factor				
	1	2	3	4	5
FLGreviewsoffeedbackIgivetomystudentslinkedtoPM FLG reviews of feedback	.874				
FLGclassroomobservationslinkedtoPM	.842				
FLGreviewsofthegradesstudentsachievelinkedtoPM	.790				
FLGattendmeetingsaboutPM	.719				
FLGimplementnewWSI					
FLGfollowBMpolicy		.906			
FLGcompletetasksassociatedwithBMpolicy		.885			
FLGspeakmeetwithparentsoutsideofparentsevening		.489			
FLGspeakmeetwithparentsandcarersatparentevenings					
FRQSetformlessonplan			-.912		
FLGSetformlessonplan			-.739		
FRQOwnmethodlessonplan			.587		
FLGplanandordeliveraschoolclubs				.790	
FRQplanandordeliveraschoolclubs				.774	
FRQplanandordeliveraschooltrips				.592	
FLGplanandordeliveraschooltrips				.525	
FRQattendmeetingsaboutPM					.717
FRQclassroomobservationslinkedtoPM					.690
FRQreviewsofthegradesstudentsachievelinkedtoPM					.655
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM					.606
Extraction Method: Maximum Likelihood.					
Rotation Method: Oblimin with Kaiser Normalization.[a]					
a. Rotation converged in 10 iterations.					

The two items from table 5.0 were deleted that had no factor loading. However, when 'FLG speak meet with parents and carers at parents even' was deleted a pattern matrix could not be produced. The next analysis, limiting to six factors, produced a pattern matrix with no cross loadings, all loadings being ≥=+/-0.40 and all communalities being above 0.40. All loadings being ≥+/-0.40 means that the factors now produced explained more than 20% of the variance observed within it. KMO (0.747), BToS (1187.045; p=<0.001), GOF (0.107) and TVE (65.45%) were all within acceptable parameters as demonstrated below and therefore this was the final round of exploratory factor analysis which resulted in a total of 17 items remaining out of the original 52 being included which loaded on to six factors. This matrix was now ready for reliability analysis.

Table 6.0: Rotated factor loadings and communality estimates for 6-factor model

Pattern Matrix[a]							Communalities
	Factor						
	1	2	3	4	5	6	
FLG plan and or deliver a school trip	.997						.445
FRQ plan and or deliver a school trips	.639						.999
FLG follow BM policy		.958					.977
FLG complete tasks associated with BM policy		.736					.682
FLG reviews of feedback I give to my students linked to PM			.855				.811
FLG classroom observations linked to PM			.815				.754
FLG reviews of the grades students achieve linked to PM			.777				.674
FLG attend meetings about PM			.735				.699
FRQ Set form lesson plan				.904			.835
FLG Set form lesson plan				.747			.594
FRQ Own method lesson plan				-.595			.403
FLG speak meet with parents and carers at parent evenings					.831		.810
FLG speak meet with parents outside of parents evening					.807		.740
FRQ attend meetings about PM						.739	.558
FRQ classroom observations linked to PM						.712	.530
FRQ reviews of the grades students achieve linked to PM						.649	.442
FRQ reviews of feedback I give to my students linked to PM						.584	.252
Extraction Method: Maximum Likelihood.							
Rotation Method: Oblimin with Kaiser Normalization.[a]							
a. Rotation converged in 10 iterations.							

5.12 Reliability Analysis

Cronbach Alpha – consistency reliability

Now the final factors had been determined, they needed to be tested for reliability using Cronbach's Alpha. The value for each of the tests should have been ≥0.70 (Chan and Idris, 2017). The Cronbach's Alpha test helps to demonstrate whether the items loaded onto each factor consistently measure the same characteristic, put simply, do they belong together.

Following Cronbach α analysis one TPAT item was deleted from factor four, this being 'FRQ own method lesson plan' as otherwise the value would have been 0.407 outside of the acceptable range (see appendix one). The internal consistency reliability coefficient for all other factors ranged from 0.788-0.909 with the overall TPAT coefficient being 0.808.

Harman Single Factor Test – common method variance

Harman Single Factor Test was conducted. It is a test of the common method variance when conducting EFA. The Total percentage of variance was 24.59%. As this was below 50% this was within the acceptable range and demonstrated that common method bias was very unlikely.

It is promoted in literature that the Harman Single Factor Test should not be used in isolation in measuring common method variance (Aguirre-Urreta and Hu, 2019; P. M. Podsakoff et al., 2012; Podsakoff et al., 2003) and therefore further testing was conducted using confirmatory analysis.

The final factors with communalities and Cronbach α values are given below in table 7.0.

Table 7.0: Rotated factor loadings and reliability indices for the final 6-factor model

Pattern Matrix[a]							Communalities	Cronbach α
	Factor							
	1	2	3	4	5	6		
FLG plan and or deliver a school trips	.997						.445	.788
FRQ plan and or deliver a school trips	.639						.999	
FLG follow BM policy		.958					.977	.889
FLG complete tasks associated with BM policy		.736					.682	
FLG reviews of feedback I give to my students linked to PM			.855				.811	.909
FLG classroom observations linked to PM			.815				.754	
FLG reviews of the grades students achieve linked to PM			.777				.674	
FLG attend meetings about PM			.735				.699	
FRQ Set form lesson plan				.904			.835	.807
FLG Set form lesson plan				.747			.594	
FLG speak meet with parents and carers at parent evenings					.831		.810	.862
FLG speak meet with parents outside of parents evening					.807		.740	
FRQ attend meetings about PM						.739	.558	.790
FRQ classroom observations linked to PM						.712	.530	
FRQ reviews of the grades students achieve linked to PM						.649	.442	
FRQ reviews of feedback I give to my students linked to PM						.584	.252	
Extraction Method: Maximum Likelihood.								
Rotation Method: Oblimin with Kaiser Normalization.[a]								
a. Rotation converged in 10 iterations.								

Following the completion of the reliability tests the number items was reduced from 17 to 16. There was a large reduction in the number of items from the original TPAT which featured 52 questions – 26 relating to frequency of task and 26 relating to feelings of productivity. However, there were some clearly defined factors that could be linked back to their original section of the questionnaire that had been designed.

5.13 Interpretation of Factors

Factor one featured the operation of planning and/or deliver school trips as well as the feelings of productivity question for this. Both were originally under 'Wider School and Extra-Curricular' and so this factor was themed as 'Extra-Curricular'.

Factor two had two separate operations loaded however, they were both to do with 'feelings' of productivity in terms following a behaviour management policy and completing tasks associated with a behaviour management policy. Logically these factors would appear to have some relationship as if you follow a policy, there must be some tasks associated with that. They were originally part of the 'Pastoral and Communication' section of the questionnaire, but they now formed 'behaviour management'.

Factor three never changed throughout the final phases of the analysis and featured all operations that were to do with performance management. They were also all regarding feelings of productivity with performance management tasks not frequency. This factor formed 'Feelings of Productivity in Performance Management'.

Both questionnaire items, the use of a standardised lesson plan, on factor four were originally part of the 'Teaching Related Tasks' section of the questionnaire. They are regarding the same operation but incorporate both the frequency and feeling. This factor formed 'Lesson Planning'.

Both items of factor five were originally part of 'Behaviour Management and Communication' however, due to them both focusing on communication this factor formed 'Communication with Parents and Carers'.

Like with factor three items on factor six were repeatedly loaded on to the same factor throughout the stages of analysis. This factor includes all the items that were asked to participants in terms of frequency for performance management tasks. This factor formed 'Frequency of Task Completion in Performance Management'.

The final factor model and correlation matrix are provided below.

Table 8.0: named factors with questionnaire items and factor loading values

Factor	Questionnaire items	Factor Loading
1. Extra-Curricular	FLG plan and or deliver a school trips	.997
	FRQ plan and or deliver a school trips	.639
2. Behaviour management	FLG follow BM policy	.958
	FLG complete tasks associated with BM policy	.736
3. Feelings of productivity in performance management	FLG reviews of feedback I give to my students linked to PM	.855
	FLG classroom observations linked to PM	.815
	FLG reviews of the grades students achieve linked to PM	.777
	FLG attend meetings about PM	.735
4. Lesson planning	FRQ Set form lesson plan	.904
	FLG Set form lesson plan	.747
5. Communication with parents/carers	FLG speak meet with parents and carers at parent evenings	.831
	FLG speak meet with parents outside of parents evening	.807
6. Frequency of productivity in performance management	FRQ attend meetings about PM	.739
	FRQ classroom observations linked to PM	.712
	FRQ reviews of the grades students achieve linked to PM	.649
	FRQ reviews of feedback I give to my students linked to PM	.584

Table 9.0: Correlation matrix of 6-factor model with named factors

Factor Correlation Matrix						
Factor	EC	BM	FLG PM	LP	CWPC	FRQ PM
EC	1.000					
BM	.148	1.000				
FLG PM	.134	.245	1.000			
LP	-.048	.102	.146	1.000		
CWPC	.181	.332	.163	-.008	1.000	-.009
FRQ PM	.113	.039	.215	.166	-.009	1.000
Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization.						

Now the factors have been interpreted, although weak, the correlations between factors three and two, five and two and six and three can be explained. Feeling productive in

performance management tasks such as classroom observations has a weak correlation with behaviour management (0.245). One can understand that if having a lesson observation then following a behaviour management policy to deal with behaviour and completing tasks to do this could be related. Likewise with communication with parents and carers factor five. If dealing with more behaviour and completing tasks to do with it, then speaking with parents and carers (0.332) more would naturally align itself. Finally, feelings of productivity and frequency for performance tasks, factor three and factor six do show a correlation, which although weak (0.215) would be in line with the questionnaire items contained within each and what they address, as one increases, so does the other.

5.14 Construct Validity – Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is a tool that is used in the development of new scales to consider the structure of the questionnaire and structural equation modelling (SEM) is one procedure that is used as part of CFA (Lewis, 2017; Brown, 2015) and is performed using IBM® SPSS® Amos 27 to provide more accurate results (Byrne, 2016). It forms part of an important process to analyse scale reliability (Raykov, 2001). SEM looks at the connections between dependent variables (such as test scores) and of latent variables. Therefore, by conducting SEM one can gain an understanding of item-construct relationships (Brown, 2015). In this study, for example, that would be testing if the construct of 'performance management' is supported by data collected from questions within that section (Brown, 2015). Simply put SEM as a process of CFA looks at what the new test measures and how well it does it. By using Maximum Likelihood (ML) global tests could be performed to determine the fit of the model as ML is considered an unbiased and efficient method to get precise estimates of the model parameters. ML was applicable for use as data consisted of multivariate continuous variables.

IBM® SPSS® Amos 27 statistical software was used to conduct confirmatory factor analysis (CFA). This was conducted to determine if the six-factor model produced as part of EFA was reliable and if it could be validated. The potential issues when using the same sample data with the CFA and EFA phase of tool construction have been discussed previously and therefore the limitations of the following model are understood.

5.15 Model Fit

The model was constructed to run validity analysis featuring six latent exogenous variables and 16 endogenous observed variables forming a recursive model. Through model identification tests, it was determined that it was 'over-identified', and structural equation modelling could be used for maximum likelihood tests as the value produced would be suitable in the assessment of model fit. One variable within each factor had a fixed loading of '1' which could be transferred to a different variable within the factor if the model was deemed not of good fit.

To determine model fit several values were used including chi-quare, Comparative Fit Index (CFI), the Standardised Root-Mean-Square Residual (SRMR) and root-mean-square error of approximation (RMSEA). The model fit was assessed against values deemed acceptable in the social sciences and supported by literature; $p \leq 0.001$, CFI ≥ 0.90, RSMEA ≤ 0.05 close model fit, a range of 0.05-0.08 being reasonable fit and SRMR ≤ 0.05 (Sung et al., 2019; Byrne, 2016).

The model constructed was deemed of good fit for all tests (p=0.004, CFI =0.961, RSMEA =0.058) except for SRMR which was 0.0503 and not acceptable.

To improve model fit relationships between variables were examined. The modification indices for the model featured several values above 4.0. However, all relationships were with a variable outside of their factor so including covariances being added between them was not possible. There were no standard residual covariances above two for the model

and therefore the model fit could not be improved this way. Finally, the Squared Multiple Correlations were examined and three variables within factor six 'frequency of task in performance management' and two within factor three 'feelings of productivity in performance management' had estimates ≤0.70. Covariances between these were added to the model and a new analysis performed.

The model now constructed was deemed of good fit for all tests p=0.004, CFI =0.961, RSMEA =0.05 and SRMR = 0.0486. The standardised regression weights (0.639-0.939) were above the minimum criterion of 0.40 (Kim and Jang, 2019) supporting that the observed variables did have a relationship with their observed variable.

Common Latent Factor Test

The common latent factor test is heavily recognised in being able to control for common method bias, especially where a researcher foresees that their study design may be subject to it (Podsakoff et al., 2003; P. M. Podsakoff et al., 2012; Shevlin and Miles, 1998). My study may be subject to various instances of common method bias as previously discussed and due to the small sample size and the same sample being used for CFA and EFA.

To test for CMB a 'latent' factor was added which formed a directional path to each observational path as demonstrated in Figure 26.0. Tests for convergent and discriminant validity were conducted to determine if the model could provide a satisfactory degree of confidence in its construct validity.

The values generated for composite reliability (a measure of convergent validity) ranged

from 0.736-0.912 which passed the threshold with each value of CR being above 0.50

demonstrating that the items loaded onto the latent variable are a measure of the same

construct. Average Variance Explained (AVE) values were not taken into consideration as

they are now thought too strict and that in reliability and validity tests CR can be used alone

(Maholtra and Dash, 2011). Figure 26.0: Common Latent Factor Model
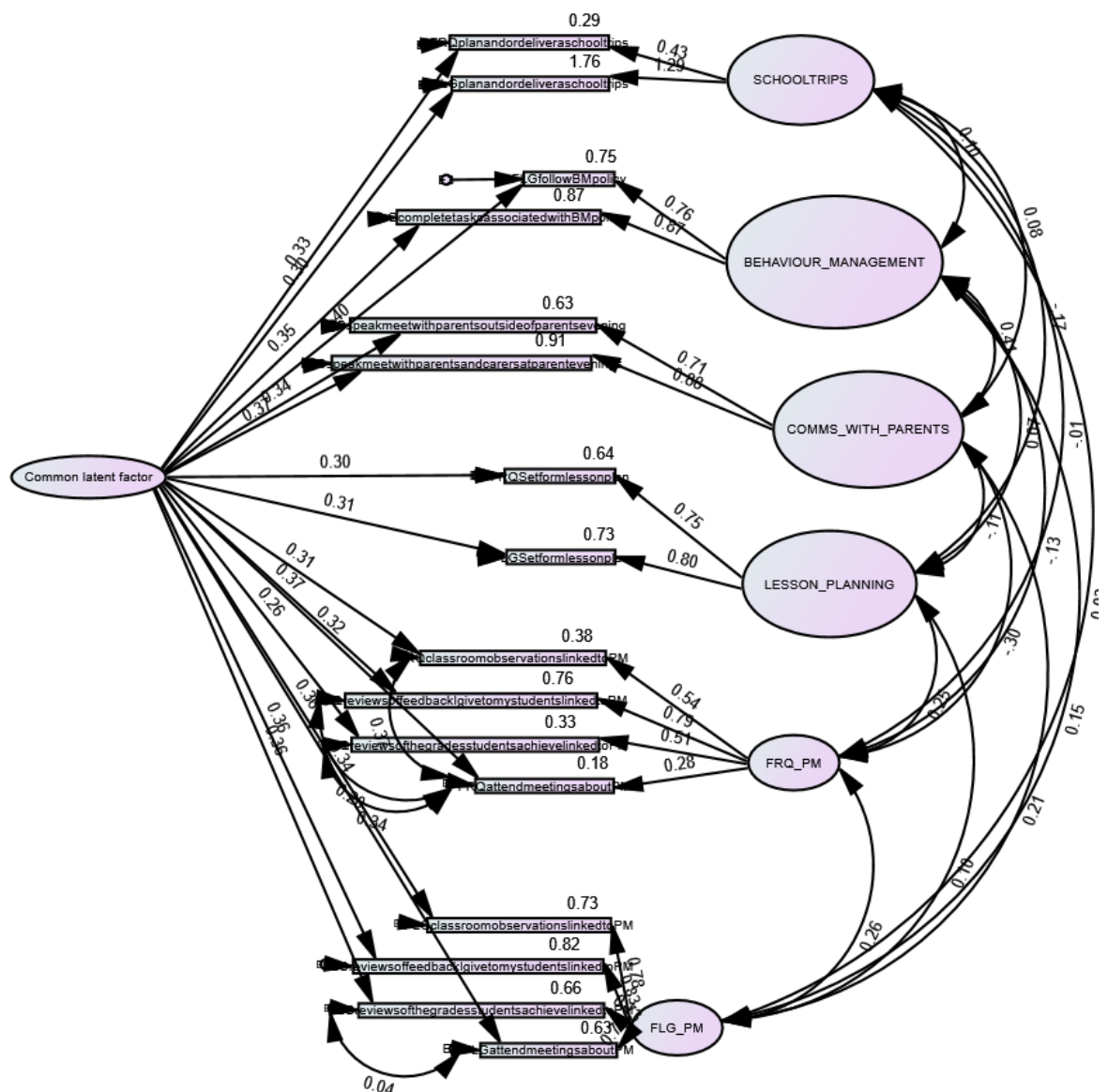
To determine if the model achieved discriminant validity, the Hetero-Monotrait ratio of

correlations (HTMT) test was conducted and is outlined in the table below. The HTMT

analysis resulted in values between 0.148-0.393 and as all were ≤0.850 the threshold provided by Gold et al. (2001) was not exceeded.

The values produced for model fit tests were also within acceptable ranges (p=0.012, CFI =0.968, RSMEA =0.053, SRMR = 0.0475) and had improved in all areas. The validity of the model in relation to the assessment of self-perceived teacher productivity was also evidenced in the relationships between latent variables. Covariance (p) and correlation I values were examined. The six-factor teacher productivity model resulted in three covariances where p≤0.05 and five that were p≤0.010.

Table 10.0: HTMT Analysis

	Extra-Curricular	Behaviour Management	Communications	Lesson Planning	FRQ in performance management	FLG of productivity in performance management	CLF
Extra-Curricular							
Behaviour Management	0.235						
Communications	0.301	0.558					
Lesson Planning	0.065	0.170	0.035				
FRQ in performance management	0.148	0.053	0.023	0.284			
FLG of productivity in performance management	0.200	0.330	0.319	0.228	0.364		
CLF	0.393	0.545	0.512	0.380	0.598	0.776	

Table 11.0: significant covariance and correlation relationships in the six-factor teacher productivity model

Latent Variable (factor)		Latent Variable (factor)	*p*	*R*
BEHAVIOUR MANAGEMENT	←>	COMMS WITH PARENTS	***	0.530
FLG_PM	←>	FRQ_PM	***	0.410
FLG_PM	←>	COMMS_WITH_PARENTS	0.001	0.351
LESSON_PLANNING	←>	FRQ_PM	0.007	0.346
FLG PM	←>	BEHAVIOUR MANAGEMENT	0.003	0.309
EXTRACURRICULAR	←>	COMMS WITH PARENTS	0.039	0.252
EXTRACURRICULAR	←>	BEHAVIOUR MANAGEMENT	0.047	0.234
FLG_PM	←>	LESSON_PLANNING	0.035	0.224

With multiple analyses to test the construct validity of the model meeting published standards, the final version was produced and is displayed in figure 27.0. The new TPAT features 16 items contained within six categories each with its own distinct   concept for the tasks that secondary teachers in England perceive as contributors to their productivity as part of their everyday job role.

Figure 27.0: Confirmatory Factor Analysis of the six-factor teacher productivity model
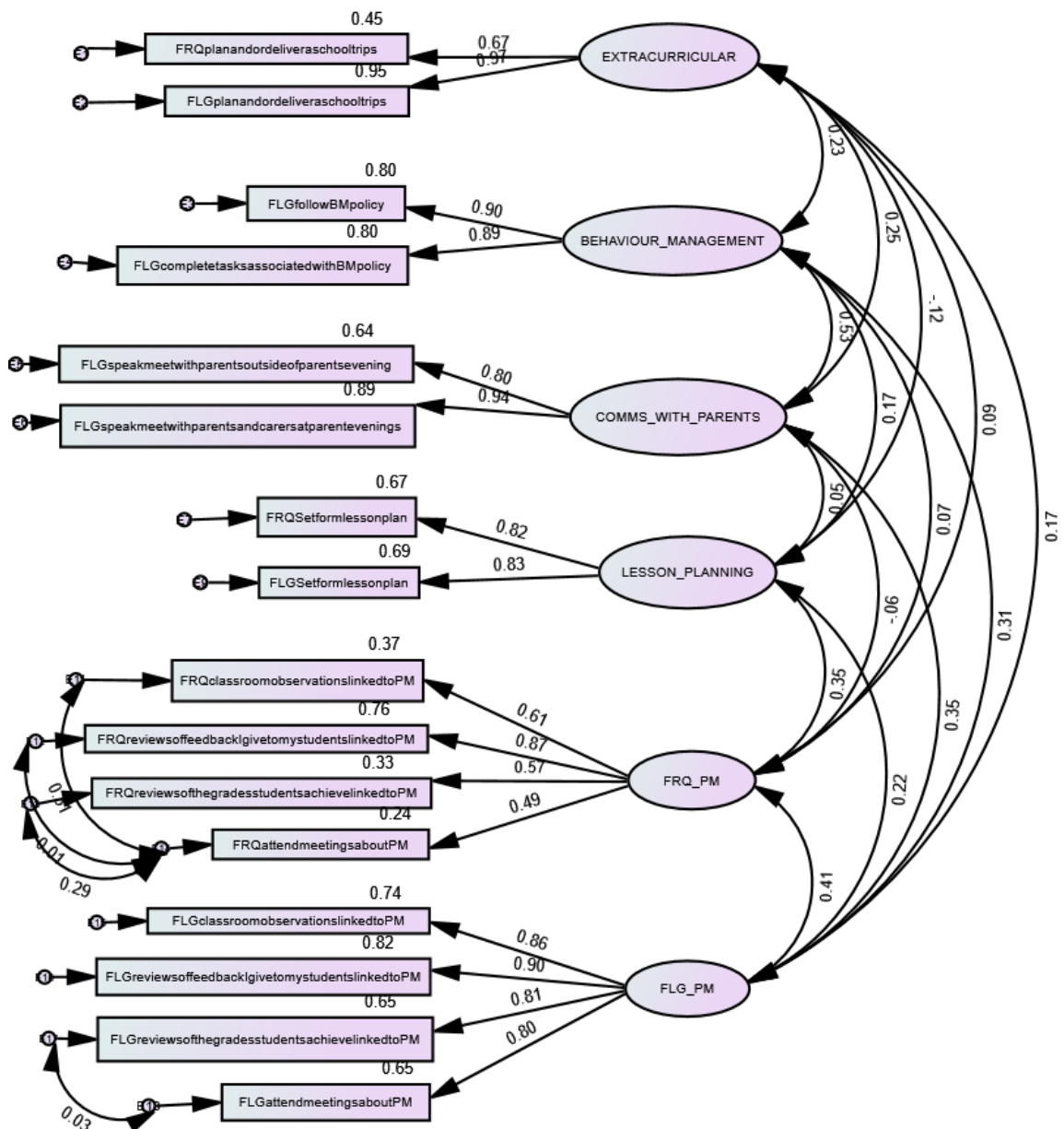
5.16 Exploring relationships between latent variables

Behaviour management has a positive relationship with communication with parents. This seems a logical link as both items measuring communication with parents involved speaking with parents and carers and both latent variables are regarding feelings of productivity rather than frequency. So, when teachers are speaking with parents and/or carers, and they're finding this productive, they are also experiencing positive feelings of productivity for following a behaviour management policy and completing tasks to do with it – of which speaking to parents and/or carers must feature. A cyclical nature to these variables would make sense, the more they follow the policy, the more they speak to parents.

Communication with parents also has a positive relationship with feelings of productivity regarding performance management. This relationship is not as explicit as the first but may be linked to speaking with parents and carers about the students' progress. If a teacher is being assessed against student progress, then speaking with parents and/or carers in instances where the student needs motivating, or where the student is being praised, could impact on how productive they feel. Talking about student progress would also form part of parents evenings which one of the items in this category was regarding. This correlation could also link with speaking to parents or carers regarding behaviour as behaviour management had a significant relationship with feelings of productivity in performance management as well. During classroom observations students may need disciplining due to disruptive behaviour which entail speaking with their carer to try and remedy the situation. Managing behaviour by following a policy and completing tasks associated, would contribute to the learning of students as it would provide an appropriate learning

environment. This could also provide the children they are educating with examples of appropriate behaviours, how to have positive relationships with adults, and provide boundaries they learn from, all this could contribute to them as they grow – enriching their lives in the long term.

Frequency of task completion in performance management and feelings of productivity in performance management have a clear relationship. These items were consistently loaded onto the same factor also during the EFA and it is not surprising that they show a strong relationship. Each question as part of these two factors was matched in terms of task and all participants reported how often they did the task, and how doing that task made them feel. What is interesting is the direction of travel for the relationship. The positive correlation indicates that an increase in frequency can lead to greater feelings of productivity. From literature, you might assume that an increase in performance management activities would decrease feelings of productivity due to scrutiny, extra administrative work and time demands. However, there are ways in which this relationship can be explained. For example, if a teacher had more frequent classroom observations, and after these feel that they have contributed to the learning and life enrichment of their students[10] then they would report greater productivity. They may also receive feedback from these they believe contributes to their practice enhancing the learning of their students. It may also be that having reviews of students grades more often could make the teacher feel more productive as either their students are making good progress and they feel they are contributing to learning, or they are able to identify where they need to place

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[10] Definition of teacher productivity derived as part of this thesis

interventions to improve student progress – increasing their self-perceived productivity overall.

Lesson planning, which represents frequency and feelings towards using a standardised pro forma, interplays with frequency of performance management tasks. This is a logical relationship to be shown statistically. As part of a lesson observation, teachers are often required to complete a standard lesson plan so an increasing frequency of classroom observations would lead to needing to produce more lesson plans. This would also impact having to attend meetings, as to receive feedback on the lesson then a meeting between the parties involved would need to be conducted. Feelings of productivity were also significantly correlated with this lesson planning. If planning a week ahead using a set format, the teacher may feel that they've been productive as their planning will be aimed at contributing to the learning of their students in a demonstrable way this could impact student grades of which they have reviews. Producing a strong lesson plan which they receive positive feedback on as part of a lesson observation could also increase feelings of positivity as they would be receiving affirmation that they their practice is in principle contributing to the learning of their students.

Speaking with parents and carers more, during and outside of parent's evenings, is shown to increase with the category of extra-curricular activities. The items within extra-curricular activities are in reference to planning and/or delivering school trips. The questions relate to both frequency and feelings. In terms of frequency, if planning school trips, then teachers may have to communicate with parents and carers more in terms of logistics. In

terms of feelings, they may feel that having these conversations is productive as they are getting to enrich the lives of their students through providing the school trip opportunity which could also contribute (dependent upon the trip) to their learning. Extra-curricular also enhances feelings of productivity in terms of behaviour management. Could the student-teacher interactions, that take place during extra-curricular activities, involve following behaviour management protocols with these ultimately contributing to more positive relationships? Improved relationships could contribute to the learning of the student as well enriching their lives in other ways.

The links between these categories and how they could all Interact with one another are supported both statistically, and in terms of applying to a teacher's everyday practice. Tasks to do with managing behaviour that involve speaking with parents appear to have the strongest positive impact on teachers' feelings of productivity. Performance management tasks seem to have the potential to support teachers in their everyday role by increasing their self-perceived levels of productivity, increased feelings of which could impact them in other ways. The possible consequences and opportunities for these relationships will be explored through the lens of occupational sources of stress and how they are manifested later in this thesis.

5.17 Conclusion

There were several stages of the research that led to the construction of the Teacher Productivity Model. The first stage employed a qualitative methodology underpinned by phenomenological principles to gather data from the lived experiences of secondary teachers in England. This data was thematically analysed and following multiple rounds of

coding and examinations data visualisations, 26 tasks were identified which formed part of a teacher's everyday work life they perceived contributed to their productivity. This stage also led to the new definition of productivity for teachers being developed which teachers measured themselves against when reporting against each task. In total, a questionnaire of 52 questions, 26 regarding frequency of task completion and 26 regarding feelings of productivity within four separate categories was produced. The second stage of this research moved to a quantitative methodology and following a national distribution of the 52-item questionnaire, data gathered was used to determine if the original four categories with 52 items questionnaire was an appropriate measure for teacher productivity. This quantitative stage, outline in the previous sections, resulted in a 16-item questionnaire with six categories, the content of which is clear, the tasks are clearly defined in each and with distinct characteristics. These robust categories were achieved by in-depth and repeated reviews of the data so that items with low factor loadings, cross loadings or no loadings were removed, ensuring that each category had its own conceptual essence. Items were also removed if they impacted on the internal consistency of the model.

Tests for reliability returned coefficients between 0.788-0.909 with the overall coefficient being 0.808. The Total percentage of variance for the Harman Single Factor test was 24.59%, an indication that common method bias was very unlikely. Within literature, it has not been possible to locate a TPAT that allows for a direct comparison regarding internal consistency coefficients, but literature regarding scale development does feature ranges within which the results for this model fit (Abbott, 2003; Benschop et al., 2020; S. C. Chen and Raab, 2016; Erdem, 2020; Timothy R. Hinkin et al., 1997; Simonsen et al., 2020; Sung et al., 2019).

Tests for validity within this scale development process relied upon the same dataset as for EFA and therefore conclusions, due to the ambiguity of literature surrounding doing this, are tentative. All tests that could be employed to measure construct validity were. All model fit, convergent validity and discriminant validity analyses returned values within acceptable ranges. The number of significant covariances between latent variables also supported the model in terms of being a good measurement for self-perceived teacher productivity.

To support the findings, and the development of this tool, the 16-item questionnaire that was created during EFA should be re-distributed to a larger sample of secondary school teachers in England. CFA should then be conducted to establish if the same patterns in data emerge to support the construct validity findings already reported. Once additional evidence to the construct validity of the TPAT is provided, this tool has multiple applications that could impact the working lives of teachers and the education system. This tool could be distributed to teachers within a school to ascertain, at a base level what tasks are they doing the most often, and how productive does completing those tasks make them feel. This could help senior leaders address issues with workload or low job satisfaction. This tool could also provide support to current performance management practices or show that staff cohort feel that performance management activities employed by senior leaders are not contributing to their productivity – they are not helping them contribute to the learning, or enrichment of their students. If not anonymous, the tool could also identify differences in reported levels of productivity across profession levels and subjects within a school for example, the performing arts department may find reviews of the written feedback they give to students unproductive, whereas an English or humanities teacher

may not. This tool could also identify if the school has good relationships with key stakeholders such as parent and/or carers. With the links between behaviour management and performance management being uncovered, where teachers are feeling their efforts in these two areas are not being productive, the school may wish to adopt a new strategy as part of their school improvement plan. This tool could also be administered to those in primary and higher education as there are some clear parallels between tasks between the levels of education. This could provide extensions to the validity of the tool for use within educational settings. Finally, the methodological approach that was used in the development of this questionnaire could be adopted across any industry to develop their own productivity definition and corresponding assessment tool.

5.18 The Teacher Productivity Assessment Tool – findings and implications

Data gathered to develop the TPAT was analysed to provide insight into what secondary teachers based in England consider as productive in their everyday job role.

5.19 Method

Participants were 118 secondary school teachers in England who worked in state-maintained schools and currently delivered key stage 4 (level 2) qualifications. The average age of teachers in the sample was 38.9 years with most (35.3%) being between 30 and 39 years. The average years in teaching was 12 (25.7% less than five, 23.2% six to ten years, 46% eleven or more). 67.0% of teachers were female. Most participants held non-management positions within their school (44.0%) with 30.0% holding middle management responsibilities. Teachers worked in schools throughout all regions of England with the majority being in the Northwest (23.6%). Most participants worked in an academy school (60.3%) and taught bucket three subjects —sciences, languages, geography, history, or computer science (40.0%) followed by those that taught bucket two —English and/or English Literature (26.0%). The average class size for the sample was 26.0 students (SD=6.03) and within their class make up teachers in the sample taught an average of 31.4% pupil premium (SD=18.28), 15.2% English as an additional language (SD=17.88) and 24.9% special educational needs (SD=20.42) students.

Teacher productivity was measured using the 16-item TPAT developed as part of stage two of this thesis. This tool looks at the task's teachers complete outside of classroom teaching – the operations that support and surround their teaching practice. Teachers are reported to work 49-50 hours per week on average (Butt and Lance, 2005; Allen et al., 2019; Deakin

et al., 2010; OECD., 2020; Sellen, 2016), and with less than half of these hours being spent in the classroom delivering lessons (OECD., 2020; Sellen, 2016; Butt and Lance, 2005), the TPAT provides insight into where this time is being spent, and how productively teachers feel they are spending it.

Analysis of data was conducted in IBM® SPSS® Statistics 27 to explore descriptive statistics for items using mean, mode and standard deviation values. Analysis between groups was performed to examine if differences in frequency of feelings of productivity existed e.g. age, profession level, subject taught.   Tests for normality were conducted due to groups not having equal representation across categories when visually inspected and the Levenes test for all groups applicable (nominal groups) had significant differences between groups. Due to analysis of distribution the Kruskal-Wallis test was selected. The Kruskal-Wallis test is a powerful alternative to ANOVA when there are three or more groups being tested against a ranked variable and these groups are of non-normal distribution, as is this the case with this sample (McKight and Najab, 2010; Ostertagova et al., 2014). A p value of ≥0.05 demonstrates that the null hypothesis can be accepted and there is no difference between groups. Where rejection of the null hypothesis was found, pairwise comparison and boxplots generated were used to identify were the differences, and direction of differences within groups originated (see appendix). Spearman's Rank Correlation Coefficient was used in the analysis of ordinal data against the 16 items in TPAT. Spearman's Rank is a non-parametric test used a useful tool in exploratory data analysis and provides correlation coefficients as well as confidence levels for variables (Gauthier, 2001; Xu et al., 2013; Zar, 1972). A guide for coefficient values is that $r=\leq\pm0.40$ there is a weak or negligible correlation, $r=0.40\text{-}0.80$ moderate and $r=\pm\geq0.80$ a strong correlation (Schober et al., 2018). Where $r=\leq0.20$ these are not reported. Chi-square analysis was

employed to test between gender and items in TPAT. Tests for ethnicity versus TPAT items could not be conducted to the lack of representation in categories. No differences between groups were found for gender, type of school, subject taught, number of dependents, relationship status, education level, region or class size.

5.20 Results

Descriptive analysis of TPAT items

TPAT items that addressed frequency of task are displayed in table 12.0 in rank order with their key descriptive values. Attending meetings about performance management was the most frequently completed task with a mean of 3.88 representing 'sometimes' and close to 'often'. However, the most selected answer on the scale for this question was 'very often' showing that for many teachers, these meetings are a regular occurrence. Thinking about the different tasks associated with performance management (reviews of marking, reviews of student grades and classroom observations), they all require follow up and feedback so it would make sense that attending meetings has the highest frequency. The task with the lowest frequency was that of 'I plan each of my classes for lessons for the week ahead using a standardised pro forma' with a mean of 2.03. Most participants had selected 'never' for this task and the conclusion from this can be that teachers in this study are being allowed autonomy in the way that they plan their lessons rather than this being mandated by the school or trust through a specific form / procedure. Frequency means ranged from 2.03-3.88 for all items demonstrating that no task had a frequency above 'sometimes' and all tasks were within ±2SD so were close to the true value, however, have reviews of student grades had the largest at SD=1.457. Three tasks did have a frequency mode of '5' —very often and were to do with performance management. These results

differ to those that were found in the original 52-item TPAT which was used to construct the validated 16- item TPAT, as frequency of performance management related tasks were amongst the lowest scoring. However, the findings are consistent with what has been found in previous government and international studies regarding performance management related activities. The TALIS (The Teaching and Learning International Survey) Survey (OECD., 2020) reported that 94% of teachers in England were subject to having reviews of their students grades and classroom observations. Sellen (2016) found that 77% of teachers felt accountability measures were adding to their workload and in real terms this has been reported as up 11 hours per week (QA_Education, 2013). The time teachers are spending on tasks in this area was further supported by the Workload Challenge published in 2015 by Gibson et al. This reported that a third of teacher's time was being spent on tasks that were based around monitoring their practice, with 24% of this time being spent on reporting pupil progress and 56% on recording, monitoring and analysing pupil data in order to do this.

Table 12.0: Frequency TPAT items ranked

TPAT item	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
I attend meetings about my performance management	118	0	3.88	5	5	1.347
I have classroom observations linked to my performance management	118	0	3.58	4	5	1.386
I have reviews of the grades my students achieve linked to my performance management	118	0	3.41	4	5	1.457
I have reviews of the feedback I give to my students linked to my performance management	118	0	2.97	3	2	1.402
I plan and/or deliver a school trip(s)	118	0	2.52	2	2	1.299
I plan each of my classes lessons for the week ahead using a standardised pro forma	118	0	2.03	1	1	1.374

Moving to feelings of productivity, the task which gave teachers in this study the greatest feeling of productivity was 'following schools behaviour management policy' which resulted in feeling productive 'often', displayed in table 12.0. The most selected option for this question was 'was 'very often' and with the deviation being below 1.0, little variation was shown in answers from participants (SD=0.974). Increased feelings of productivity in this area mean that teachers are feeling like they contributing to the learning and enriching the lives of their students through this task. This could be due to an improved learning environment with less disruption, or it could be due to better student teacher relationships. Unsurprisingly, speaking with parents and carers at and outside of parents evening and completing tasks to do with behaviour management all feature next in the ranking and with a small difference between means (0.14). All these tasks made teachers feeling productive 'sometimes' when looking at the mean, but the mode demonstrates that for most teachers sampled doing these tasks made them feel productive very often. These results were also found the in the unvalidated 52-item TPAT. Although there is limited research at present regarding the impact of teacher-parent interactions and relationships, there is some evidence that increased engagement between parents and teachers can increase student aspirations and improve behaviour (DePlanty et al., 2007; Fan and Chen, 2001). The greater level of feelings of productivity was the same for planning and/or delivering school trips. These top five items are all to do with extracurricular, pastoral communication and behaviour management – the wider role of the teacher. These are student focused actions with high levels of student interaction and these results show that teachers perceive these to have a real impact on the learning and life enrichment of their students. The five tasks at the bottom of the feelings of productivity rankings show a stark contrast. All tasks for performance management have a mean and mode that represent teachers rarely feel productive undertaking them – this was also reported as a finding for the little evidence

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that they impact pedagogy in a positive way (Page, 2015; Forrester, 2011; Gleeson, 2011; Gleeson and Husbands, 2003).Reviews of students' grades was the second lowest score in making teachers feeling productive and this was the lowest ranked task in the unvalidated 52-item TPAT showing some continuity in responses. Student grades have repeatedly been reported to not be reflective of a teacher's contribution to the learning of their students learning as outlined in previous chapters of this thesis. Student grades have been found to be dependent upon many extraneous factors outside of the teachers control including (but not limited to) the geographical region the student lives in, the socio-economic status of the student, family and community and student motivation (Walberg et al., 1986; Schalock et al., 1993). Planning using a standardised pro forma is rarely completed when referring to table 13.0 and this may be a positive for teachers as the evidence from this study shows that doing this is rarely productive to them, and for most teachers who took part in this study, never productive. In previous studies teachers have commented that planning in this way is burdensome due to the level of detail that is required and is only required due to a culture of fear and overplanning caused by Ofsted (Gibson et al., 2015; Butt and Lance, 2005). Looking at the difference in nature of these tasks, the bottom three tasks have zero interaction with students and are also data and administrative work focused. Reviews of feedback relates to marking; review of grades is data related, and planning using forms is further administrative work. When looking at the tasks overall, it is posited that as tasks decrease in student interaction and move towards more data, reporting and administration, the value that teachers' places on these in relation to their contribution to the learning and life enrichment of their students also decreases.

There were 12 items of TPAT that were about the same task but measured both frequency and feelings of productivity. For example, there were four items that comprised frequency of performance management and feelings of productivity in performance management and the tasks within each were the same. Table 14.0 displays the differences for all TPAT matched items.

Table 13.0: Feelings of productivity TPAT items ranked

TPAT Item	N		Mean	Median	Mode	Std. Deviation
	Valid	Missing				
Following my school's behaviour management policy	116	2	4.09	4	5	0.974
Speaking to and/or meeting with parents and carers as part of parent evenings	116	2	3.76	4	5	1.139
Completing tasks associated with my school's behaviour management policy (e.g. logging behaviour incidents)	116	2	3.72	4	5	1.198
Speaking to and/or meeting with parents and carers outside of parents evening	117	1	3.62	4	4	1.188
Planning and/or delivering a school trip(s)	118	0	3.60	4	5	1.385
Attending meetings about my performance management	118	0	3.11	3	2	1.218
Planning and completing classroom observations linked to my performance management	118	0	2.84	3	2	1.184
Having colleagues review the feedback I give to my students linked to my performance management	118	0	2.74	3	2	1.165
Having colleagues review the grades my students achieve linked to my performance management	118	0	2.65	2	2	1.143
Planning each of my classes lessons for the week ahead using a standardised pro forma	118	0	2.09	2	1	1.314

Table 14.0: differences in frequency vs feelings tasks – mean, mode and standard deviation

TPAT Item	N	FRQ Mean	FLG Mean	Diff.	FRQ Mode	FLG Mode	Diff.	FRQ Std. Deviation	FLG Std. Deviation	Diff.
								Descriptive statistic comparisons		
Planning and/or delivering a school trip(s)	118	2.52	3.60	1.08	2	5	3	1.299	1.385	0.086
Attending meetings about performance management	118	3.88	3.11	-0.77	5	2	-3	1.347	1.218	-0.129
Planning and completing classroom observations linked to performance management	118	3.58	2.84	-0.74	5	2	-3	1.386	1.184	-0.202
Having colleagues review feedback given to students linked to performance management	118	2.97	2.74	-0.23	2	2	0	1.402	1.165	-0.237
Having colleagues review the grades students achieve linked to performance management	118	3.41	2.65	-0.76	5	2	-3	1.457	1.143	-0.314
Planning each classes lessons for the week ahead using a standardised pro forma	118	2.03	2.09	0.06	1	1	0	1.374	1.314	-0.060

Some interesting differences are those found in the tasks related to performance management. For the tasks attending meetings, having classroom observations and reviews of student's grades, the mode values demonstrate that although most teachers are taking part in these activities 'very often', they 'rarely' feel that they are productive. Findings from the unvalidated 52-time TPAT also found that there was a negative difference between the frequency of completing classroom observations and how productive teachers felt when doing them. These findings in difference for performance management related tasks will be interesting when relationships between productivity and stress are explored later in this thesis.

A consistent finding in tasks was between planning using a set pro forma. This was one completed rarely, with most teachers never doing this, and this also was rarely or never productive for them – positive in terms of teachers not having to spend their time on tasks that they see no merit in when it comes to the learning or life enrichment of their students. The greatest positive difference was found between planning and/or delivering school trips and how productive this made teachers feel, this was also found in the unvalidated 52-item TPAT. Although teachers are doing these rarely, when they do, they feel productive at least sometimes, with most teachers feeling productive very often. The findings from TPAT regarding school trips are supported in literature. The time teachers have reported to spend involved in extra-curricular activities is often the lowest (Allen et al., 2019; OECD., 2020) but teachers that take part in and deliver more extra-curricular activities have been found to have increased job satisfaction, a sense of job fulfilment, increased job performance and greater longevity in the profession (Moran, 2017; Brady and Wilson, 2020).

Differences in TPAT items between groups

Table 15.0 displays the significant results from Kruskal-Wallis analysis of groups. Profession level was the only group to return a difference in the frequency of completing tasks and their feelings of productivity regarding them.

Table 15.0: Kruskal-Wallis analysis of demographic versus TPAT items

Hypothesis Test Summary					
Demographic	Null Hypothesis	Test	Sig.[a,b]	Decision	Pairwise comparison (p)
Profession level	The distribution of FRQ plan and/or deliver a school trip(s) is the same across categories of Management Level.	Independent-Samples Kruskal-Wallis Test	<.001	Reject the null hypothesis.	Non-management-Lower management 0.057 Non-management-Senior Management 0.029 Non-management-Middle Management 0.000
	The distribution of FLG plan and/or deliver a school trip(s) is the same across categories of Management Level.	Independent-Samples Kruskal-Wallis Test	.011	Reject the null hypothesis.	Non-management-Middle Management 0.018 Non-management-Lower management 0.006
	The distribution of FRQ attend meetings about PM is the same across categories of Management Level.	Independent-Samples Kruskal-Wallis Test	.041	Reject the null hypothesis.	Non-management-Senior Management 0.045 Non-management-Lower management 0.015

The Kruskal-Wallis test found that teachers who were non-management (who were purely classroom teachers) planned has significant differences in regard to school trip and following examination of the means for each group (see appendix) classroom teachers deliver less school trips than their low and middle management colleagues. This could be due to time demands on classroom teachers with less protected time in their timetables and more lessons to teach. However, they also felt that planning and delivering school trips was less productive than any group with managerial responsibilities. An explanation for this could again be linked to time, and the management of it. Arranging or delivering a school trip would take them away from the classroom and they may feel their time is better spent in school planning lessons, marking students work or completing administrative tasks. In fact, The Working Lives of Teachers and Leaders report (2023) found that 55% of classroom teachers felt they were spending too much time on this supporting this finding.

Unsurprisingly classroom teachers (non-management) attend less meetings about performance management than senior managers, however, middle managers did not differ in this group and therefore may attend the same amount. With senior management being responsible for reporting student progress, and being accountable to Governors, parents and Ofsted, as well for the everyday running of the school, you would expect that they have more meetings than a colleague whose focus is their pedagogy and time spent in the classroom. This may also be the case with middle managers – heads of departments and heads of year – they have reporting and accountability responsibilities in their year groups and for their subjects as well as teams to lead. This finding, of senior managers finding attending meetings more productive, is supported in literature as they are reported to

spend up to 5 hours per week in meetings and appraising others – considerably more than

classroom teachers (Deakin et al., 2010).

Table 16.0: Spearman's Rank Correlation Coefficient analysis of demographic versus TPAT items

Demographic		FRQ Set form lesson plan	FLG Set form lesson plan	FRQ reviews of feedback I give to my students linked to PM	FRQ reviews of the grade's students achieve linked to PM	FLG classroom observations linked to PM	FLG reviews of feedback I give to my students linked to PM	FLG reviews of the grade's students achieve linked to PM	FLG follow BM policy	FLG complete tasks associated with BM policy
						TPAT Item				
Years teaching	Correlation Coefficient					-.218*	-.202*			
	Sig. (2-tailed)					0.019	0.032			
	N					116	114			
Age	Correlation Coefficient					-.239*				
	Sig. (2-tailed)					0.010				
	N					114				
% PP	Correlation Coefficient	.383**	.374**	.368**	.279**		.203*	.284**		.202*
	Sig. (2-tailed)	0.000	0.000	0.000	0.003		0.031	0.002		0.034
	N	114	111	114	114		113	113		110
% EAL	Correlation Coefficient								.251**	.252**
	Sig. (2-tailed)								0.009	0.009
	N								107	107
%SEND	Correlation Coefficient							.222*		
	Sig. (2-tailed)							0.019		
	N							111		

Table 16.0 shows the coefficients that were significant within groups for years teaching, teacher age, and percentage of pupil premium, EAL and SEND students taught.

Years teaching decreased feelings of productivity in relation to having classroom observations and reviews of marking, demonstrating that teachers find these performance management related tasks less productive as they move through their careers. An explanation could be that as they are being exposed to more accountability practices over time, the merit they see in these diminishes due to the ever-changing ways in which their performance is judged (Forrester, 2011; Gleeson and Husbands, 2003; Page, 2015). These findings could also support that of increasing age decreasing feelings of productivity for classroom observations – one can posit that older teachers are more likely to have been in the profession for longer, and therefore feelings of productivity diminish over time. Another explanation for this finding is found in literature where teachers self-efficacy in their classroom practices has been found to decrease as they progress through their career – the longer they teach, the less they believe in the quality of their classroom instruction and management which could be why more experienced teachers are experiencing lower levels of productivity in this study (Poulou et al., 2018).

Increasing numbers of pupil premium students within classes saw the most effects on TPAT items, and strongest. Teachers with more pupil premium students are planning use standardised forms more often, however, they also find this more productive. This may be due to them needing to plan, in detail, how they are going to contribute to the learning of their students in the knowledge that pupil premium students are shown to make lower

progress nationally and therefore, require more interventions (Andrews, 2017; Datalab, 2022; DfE, 2001). Frequency of reviews of marking, and feelings of productivity are also higher. This links back to the previous point of premium pupil students being known to make lesson progress. By teachers having their marking reviewed more frequently and being provided feedback, they may be having their practice reinforced that they are contributing to the learning of their students by improving the students work through their written feedback. Having more reviews of student's grades would also fit the narrative of pupil premium students making less progress nationally. These students may require more monitoring so that progress gaps can be identified early, this may also explain why teachers are feeling more productive about these – they allow them to put in place supportive strategies to boost the students learning and outcomes. Finally, teachers who teach more pupil premium students are feeling more productive when completing tasks to do with a behaviour management policy. Off-task behaviour could result in less learning on the part of the student and therefore by following through with consequences, and with praise procedures, they may be improving the learning environment of their classroom allowing for greater learning to take place.

Following and completing tasks associated with a behaviour management policy showed to have increased feelings of productivity when English as an additional language students' percentage increased. It has been reported that due to lack of knowledge and understanding surrounding the background of EAL students, and therefore them not being stretched or supported appropriately, that their motivation levels, and behaviour can deteriorate. Some schools also have a policy where only English is allowed to be spoken in class / on the corridors unless the student is in a foreign languages class (Arnot et al., 2014;

Hutchinson, 2018). By correcting students and promoting them to speak using English the teacher would be helping the student learn the language – enriching their lives. By dealing with behaviour, following a behaviour management policy, the teacher could build relationships and a greater understanding between themselves and the student, making the teacher feel they are contributing to the learning and life enrichment of their student.

For teachers who have higher percentages of students with special education needs and disability, they found reviews of grades more productive (see table 16.0). Students with SEND are known to have an attainment gap double that of pupil premium students and are also twice more likely to be pupil premium than other students (Cullen et al., 2020). With the attainment gaps for pupil premium students known, and with SEND students being shown to make lesson progress, having reviews of student's grades could make the teacher better equipped to spot gaps in progress and adjust their practice, accordingly, therefore contributing to the learning of these students.

5.21 Implications

A key finding from TPAT has been that teachers are often involved in tasks to do with performance management, and that these tasks are deemed unproductive to them – and that as years in teaching increases, the productivity value that teachers assign to these decreases.

The potential consequences of teachers being involved in high rates of low value work of this nature are severe. Accountability measures and a target driven culture have been shown to decrease job satisfaction, and intention to stay in the profession (Bümen, 2010;

Hill and Jones, 2020; Lynch, 2016; Perryman et al., 2011; Perryman and Calvert, 2020; Worth et al., 2017). The impact of teachers leaving the profession, as they are in high numbers at present, are a loss of school culture and that a student's overall experience of education, and their quantitative outcomes, are negatively affected. Teachers leaving also places more pressure on remaining teachers who have to cover more lessons and cover the workload of missing staff (McCarthy et al., 2009). Performance management activities increase pressure for teachers to report better student scores and the plethora of accountability measures they are held to are documented to increase stress, anxiety and burnout (Attick, 2017; Skinner et al., 2019; Smith and Kovacs, 2011; Travers and Cooper, 1993). If frequency of these tasks could be reduced, or the design of them reimagined so that teachers see merit in them, they deem them as productive, then this would reduce instances of stress caused by these tasks. Decreasing stress would not only lead to better quality student-teacher interactions, student behaviour and student attainment (Briner and Dewberry, 2007; Virtanen et al., 2019; Jennings and Greenberg, 2009; Caprara et al., 2006) but would also increase the levels of job satisfaction and commitment to staying within teaching. At the time of writing there are currently 3,300 unfilled teaching vacancies (GOV.UK, 2023d) and the need to retain teachers has never been greater.

5.22 Conclusion

From using TPAT and multivariate regression analyses, the findings demonstrate that secondary teachers in England are spending most of their time outside of teaching on performance management tasks. However, such tasks are not considered by very many in the sample to constitute a productive use of their time as they do not contribute to the learning and life enrichment of students. It should be noted though, that teachers with higher proportions of pupil premium students do find these activities more productive and

this provides an opportunity for policy to shift from reporting pupil progress for scrutiny purposes, to purposes intended to identify where interventions can be put in place to support student learning and empower the teacher. The results also highlight that where tasks are focused on students, and student interactions, feelings of productivity increase. Productivity was also felt to be greater when teachers are involved in extra-curricular activities and opportunities for this should be increased.

This study does have limitations. The first being that the findings are reported against a new tool which requires further validation from repetition to confirm that construct validity is sound. Secondly, the sample tested was only 118 teachers, and although largely representative of the teaching population in England, the study would be strengthened by a larger sample population. Finally, TPAT measures a limited number of tasks that teachers complete outside of classroom teaching. The tool can only speak to the tasks contained within and therefore, the findings cannot discount that other non-teaching tasks may be of greater or lesser value to teachers, or frequent in their occurrence.

To further the findings of this study, the specific tasks will be tested against the Teacher Stress Inventory. Findings from this will discover if certain tasks, such as performance management tasks, do contribute to stress and workload which as discussed above are factors in teacher retention and burnout.

The results from this study are the first to employ TPAT and the first to specifically address feelings of productivity, the definition of which was built by the lived experiences of

teachers themselves, in relation to task completion. These findings have contributed to knowledge that accountability measures are being increasingly applied in schools, and that the negative feelings documented towards these are prevalent. The findings also show that TPAT can produce results in line with published literature therefore adding value to the new instrument which can provide an insight into why and how teachers perceive they are being productive, or as found in some cases, unproductive.

6.0 Stage Three – Teacher Stress

The final stage of this thesis seeks to provide an answer to the research question regarding current levels of self-reported stress for secondary school teachers in England, and, if there are relationships with teacher perceived productivity. The findings from looking at the overall stress scores of teachers will provide a basis for comparison when items from the TPAT .

6.01 Method

Participant data used were the same as in the previous stages of this thesis. There were 118 participants who are currently employed secondary school teachers in England, the average age of which was 38.9 years, with the average length of teaching experience being 12 years. 33.0% of teachers were male and most were classroom teachers with 30% being middle managers, and 12.5% being in low or senior management. All regions of England were represented in the sample with 60.3% of participants working in an academy school. Bucket three subject teachers —sciences, languages, geography, history, or computer science were the most represented (40.0%) followed by those that taught bucket two — English and/or English Literature (26.0%). The average class size was 26.0 students (SD=6.03) and an average of 31.4% pupil premium (SD=18.28), 15.2% English as an

additional language (SD=17.88) and 24.9% special educational needs (SD=20.42) students were taught.

To measure the self-reported stress of teachers in England the Teacher Stress Inventory (TSI) was used, a tool developed by Michale J. Fimian (1984) . The TSI is a 5-point Likert scale, with a range of 'no strength/not noticeable' to 'major strength/extremely noticeable'. There are 49 items contained within ten factors —five factors which measure sources of stress and five which measure stress manifestations these being time management, work related stressors, professional investment, professional distress, discipline and motivation, emotional manifestations, fatigue manifestations, cardiovascular manifestations, gastrointestinal manifestations and behavioural manifestations. The TSI has been used extensively in academic research and the construct validity and reliability re-affirmed (Kourmousi and Alexopoulos, 2016; Kourmousi et al., 2015a; Boshoff et al., 2018; Lasebikan, 2016; Fimian and Fastenau, 1990). Each factors mean score was summed and then divided against the total number of factors (ten) to provide a 'Total Stress Score'. The Total Stress Score is measured against the cut-off points provided by Fimian (1988) to determine if the participants in this study are experiencing weak, moderate, or strong levels of stress as a population. The cut-off points provided by Fimian are ≤1.95 significantly weak, 1.96-3.22 moderate and ≥3.23 significantly strong. Within Fimian (1988) deciles are provided for each factor of the TSI instead of mean cut-off points. Fimian (1988) explains in their 'Test Norms and Interpretation' chapter (pp.14-38) that using deciles allows identification of where interventions may be needed if the mean score for that factor subscale places in the higher deciles. Therefore, to evaluate the strength of stress in each factor of the TSI for the sample in this study, the mean value of participants is placed within these decile ranges to allow for normative comparison. Any

mean factor subscale score that places participants in a decile of 60-69 or higher (meaning they are experiencing that stressor more than 60% of the normative population) is reported. Subscales mean scores that placed in a decile of 60-69 or higher were further examined to find the specific source and manifestation items of stress contained within the factor.

Analysis of data was conducted in IBM® SPSS® Statistics 27 to explore the descriptive statistics for TSI Total Score, TSI subscales and TSI individual items. The mean, mode and standard deviation values for each was examined.

Following analysis of the entire sample population, analysis of each teacher characteristic was conducted e.g. age, profession level. Tests for normality were conducted due to groups not having equal representation across categories when visually inspected (see appendix). These tests resulted in the Kruskal-Wallis test being selected. The Kruskal-Wallis test is a powerful alternative to ANOVA when there are three or more groups being tested against a ranked variable and these groups are of non-normal distribution, as is this the case with this sample (McKight and Najab, 2010; Ostertagova et al., 2014). When analysing the results from performing the Kruskal-Wallis test, a p value of ≥0.05 demonstrates that the null hypothesis can be accepted and there is no difference between groups. Where differences were found in mean TSI subscale scores, further analysis was conducted to test each item contained within that subscale for example, each question that comprised 'time management' was tested separately. Means for the groups for the item(s) were placed into the corresponding TSI subscale decile and differences in decile placements between groups are reported. For groups where data was ordinal, such as age, Spearman's Rank Correlation Coefficient is employed. All TSI subscale mean scores that demonstrated significant

correlations were further examined. Each item within each subscale was tested and from the mean score for the Item a decile range assigned. A guide for coefficient values is that $r=\leq\pm0.40$ there is a weak or negligible correlation, $r=0.40\text{-}0.80$ moderate and $r=\pm\geq0.80$ a strong correlation (Schober et al., 2018). Where $r=\leq0.20$ these are not reported as they are assumed to have a negligible relationship.

Due to the lack of and disproportionate representation in most categories of the ethnicity demographic, it was not possible to explore the mean score for each TSI subscale or specific sources and/or manifestations of stress. Age, class size and percentage of English as an additional language students taught had no significant correlations and are not reported. Region, education level, type of school, subject taught and number of dependents returned no p values ≤0.05 and are not reported.

6.02 Results – whole population

Table 17.0 provides the overview of how this sample places against the cut-off points for total stress score provided by Fimian (1988). 19.5% of participants are experiencing significantly strong stress, with 80.5% of the total population experiencing moderate to strong stress. Previous studies have shown for example that only 2.0% of teachers report have low / no work related stress (Mazzone and Miglionico, 2014) and for those who are 'highly stressed', comparable to the strong category in this study, the proportion ranges from 30.0-33.0% (von der Embse and Mankin, 2020; Bender et al., 2017; Education, 2019). However, the most recent Teacher Wellbeing Index (2023) found that 83% of teachers were stress, comparable to the 80.5% found in this sample, and 21.5% were experiencing acute stress, again comparable to the 19.5% found in this study.

Table 17.0: Overview of TSI total scores and strengths for sample

TSI Total Score Strength	Frequency (*n*)	Percent	Cumulative Percent
Weak	13	11.0	11.0
Moderate	82	69.5	80.5
Strong	23	19.5	100.0
Total	118	100.0	

Table 18.0 displays the descriptive statistics for each subscale of the TSI and TSI total stress score. The highest means are found within time management (M=3.69) and work-related stressors (M=3.88), both factors relating to sources of stress. The mean for time management falls within the 60-69 decile with the mean for work-related stressors being in the higher decile of 70-79. The weakest stress manifestation found is behavioural manifestations with a mean of 1.49 however, this still places respondents in the 60-69 decile. The deciles for professional distress and investment are low at 30-39 with gastrointestinal manifestations placing as the highest stress manifestation factor in the 70-79 decile.

Table 18.0: descriptive statistics and TSI category for subscale and overall score for TSI

TSI Factor*	N		Mean	Median	Mode	Std. Deviation	Strength	Decile
	Valid	Missing						
TM_AVE	118	0	3.6907	3.8000	3.30	.67659		60-69
WRS_AVE	118	0	3.8802	4.0000	4.17	.72325		70-79
PD_AVE	117	1	2.6256	2.6000	1.80	1.10969		30-39
DM_AVE	116	2	2.8469	2.8300	2.33	.91900		40-49
PI_AVE	116	2	2.3384	2.2500	1.50	1.02377		30-39
EM_AVE	116	2	2.9121	2.8000	2.40	1.15429		60-69
FM_AVE	116	2	2.8793	2.8000	3.80	.94653		60-69
CVM_AVE	116	2	2.3248	2.0000	1.00	1.17354		60-69
GM_AVE	116	2	2.0143	1.6700	1.00	1.18565		70-79
BM_AVE	116	2	1.4914	1.2500	1.00	.63838		60-69
TOTAL STRESS SCORE	118	0	2.7110	2.7000	2.60[a]	.61014	Moderate	50-59
a. Multiple modes exist. The smallest value is shown								

*TM_AVE = Time Management Average; WRS_AVE= Work related stressor average; PD_AVE=Professional Distress Average; DM_AVE=Discipline and Motivation average; PI_AVE=Professional investment average; EM_AVE=Emotional manifestations average; FM_AVE=Fatigue manifestations average; CVM_AVE=Cardiovascular manifestations average; GM_AVE=Gastrointestinal manifestations average; BM_AVE=Behavioural manifestations average

Table 19.0 gives the items for each subscale of the stress source factors time management and work-related stressors which not only have the highest means but are also placed in high deciles. The item 'there is not enough time' within the subscale time management places highest, (decile=90-100). Participants in this study are also more stressed due to overcommitment, having to do more than one thing at once, having little time to relax and feeling uncomfortable wasting time. For every subitem in the work-related stressors subscale, participants place in a 60-69 or higher decile. Having too much work to do, having their personal priorities shortchanged due to time demands and too much administrative work in their jobs is all prevalent as sources of stress.

Considering the items in table 19.0 the relationship between stress sources in time management and work-related stressors is apparent. Within time management, participants have multiple subitems that place them in deciles of 60-69 and higher, the highest being 'there is not enough time to get things done'. Zafarullah and Pertti (2017) describe time as '*critical for providing human beings opportunities to think about their status, conditions and environment and to make, change, create and maintain various systems*' (pp.214). Therefore, not having enough 'time' could affect a teacher's ability to maintain their effectiveness at work but also reduce their opportunities to be creative and improve their practice – shown by them feeling that there is not enough time for them to prepare for their lessons and/or responsibilities. Not having enough time in table 19.0 directly relates to workload, having too much work, and too little time would result in a high workload. This is shown by teachers reporting that there is too much work to do, especially administrative work.

Table 19.0: TSI Subscale item and descriptive statistics with decile placement

TSI Subscale Item	N		Mean	Median	Mode	Std. Deviation	Subscale Decile
	Valid	Missing					
TIME MANAGEMENT – I easily over-commit myself	118	0	3.85	4.00	4	1.026	70-79
TIME MANAGEMENT – I have to try doing more than one thing at a time	118	0	3.82	4.00	5	1.122	70-79
TIME MANAGEMENT – I have little time to relax/enjoy the time of day	118	0	3.99	4.00	5	1.202	80-89
TIME MANAGEMENT – I feel uncomfortable wasting time	117	1	3.81	4.00	5	1.174	70-79
TIME MANAGEMENT – There is not enough time to get things done	118	0	4.29	5.00	5	.962	90-100
WORK-RELATED STRESSORS – There is little time to prepare for my lessons/responsibilities	118	0	3.84	4.00	5	.995	70-79
WORK-RELATED STRESSORS – There is too much work to do	118	0	4.21	4.00	5	.914	80-89
WORK-RELATED STRESSORS – The pace of the school day is too fast	118	0	3.52	4.00	4	1.084	60-69
WORK-RELATED STRESSORS – My caseload/class is too big	118	0	3.67	4.00	5	1.125	60-69
WORK-RELATED STRESSORS – My personal priorities are being short changed due to time demands	118	0	4.04	4.00	4[a]	.991	80-89
WORK-RELATED STRESSORS – There is too much administrative paperwork in my job	117	1	4.00	4.00	5	.938	80-89
a. Multiple modes exist. The smallest value is shown							

The Teacher Workload Survey (Allen et al., 2019) reported that 25.0% of teachers surveyed were working more than 60 hours per week, 40.0% spent their evenings working, with 10.0% of respondents continuing to work at the weekend. This time spent working may be why participants are also reporting 'there is little time to relax' and that their own personal priorities are being short changed. These results are also supported by comments made by participants in focus groups and interviews conducted during stage one of this thesis. Rosie commented about the expectation from school leaders that she would complete work at home, with Emily saying that she repeatedly worked well into the evening. A further comment was made by Rosie about workload, she said this was the reason she left teaching before returning, it just was not conducive to having a young family due to the number of hours she was being expected to work. The word cloud produced (see figure 18.0) from asking focus group and interview participants about their work life balance featured the words 'time' 'work' and 'planning' most prominently, supporting the results of the TSI in this study. Other studies using the TSI have repeatedly reported the stress sources of time management and work-related stressors as ranking highest, or within the top four categories of the TSI. When looking at the results of these studies in more detail, the highest ranking stress sources are not having enough time, overcommitting themselves, having too much work (especially administrative work) and having little time to relax (Vance et al., 1989; Hanif et al., 2011; J. Richards, 2012; Austin et al., 2005; Perryman and Calvert, 2020) the same as with this sample. If teachers in this study, and as a population as evidenced in literature, are all experiencing time management sources of stress, could it be that teachers are not managing their time effectively which gives false impressions of workload? A study, which contradicts this theory conducted by Meister and Melnick (2003) found that although 84.0% teachers in their sample reported being overwhelmed by time constraints and workload, 85.0% considered themselves to be well organised and 84.0%

said that they felt they were managing their time effectively. These results are supported in other literature such as Kayode and Ayodele (2015) who reported that 86% of teachers had moderate to high time management skills and Khan et al. (2016) who found that teachers were using effective techniques when it came to planning for their lessons. If lesson planning is not the source of time demands or the source of having too much work, this could be accounted for by the 'too much administrative work' stress source. The OECD (2014) report discussed as part of the literature review found that teachers blamed administrative work for their high workloads, and a further report published five years later, The Teacher Wellbeing Index, saw 71.0% of teachers say that their workload was too high to due to unnecessary paperwork (Education, 2019)– a direct comparison to these findings.   There may also be extraneous factors at play which are adding to workload and time demands. Zafarullah et al. (2016) found that in some cases time demands were increased due to mismanagement of schools and staff by headteachers which is referenced to in the anecdotal evidence of Emily and Rosie as part of the focus group and interviews about how they were being expected to manage their time by school leaders – by working during evenings and weekends. The impact of poor leadership on time stress sources is also supported in the Teacher Wellbeing index (Education, 2019) where poor management and government interference were cited as reasons for time pressures and high workload. These stress sources are also shown to be caused by the surveillance and scrutiny that teachers are subject to due to accountability measures within English schools (Skinner et al., 2019; Attick, 2017; Smith and Kovacs, 2011; Travers and Cooper, 1993) which provides evidence for the stress source of teachers in this study having too much administrative work to complete. Although there are only two out of five sources of stress placing in high deciles, every factor that relates to stress manifestations places 60-69 or higher, detailed in table 20.0.

Table 20.0: TSI subscale items which a decile placement of at least 60-69

Statistics							
	N		Mean	Median	Mode	Std.	TSI Decile
	Valid	Missing				Deviation	
EMOTIONAL MANIFESTATIONS I respond to stress by feeling insecure	116	2	2.97	3.00	1[a]	1.450	60-69
EMOTIONAL MANIFESTATIONS I respond to stress by feeling unable to cope	116	2	2.85	3.00	2	1.287	60-69
EMOTIONAL MANIFESTATIONS I respond to stress by feeling anxious	116	2	3.34	3.00	5	1.313	70-79
FATIGUE MANIFESTATIONS I respond to stress by becoming fatigued in a very short time	116	2	3.19	3.00	4	1.338	70-79
FATIGUE MANIFESTATIONS I respond to stress with physical exhaustion	116	2	3.19	3.00	4	1.278	70-79
FATIGUE MANIFESTATIONS I respond to stress with physical weakness	116	2	2.35	2.00	1	1.334	70-79
CARDIOVASCULAR MANIFESTATIONS I respond to stress with feelings of increased blood pressure	116	2	2.28	2.00	1	1.323	60-69
CARDIOVASCULAR MANIFESTATIONS I respond to stress feeling of heart pounding or racing	116	2	2.61	2.00	1	1.388	60-69
CARDIOVASCULAR MANIFESTATIONS I respond to stress rapid and/or shallow breath	115	3	2.07	2.00	1	1.289	60-69
GASTRONOMICAL MANIFESTATIONS I respond to stress with stomach pain of extended duration.	116	2	2.03	1.00	1	1.357	70-79
GASTRONOMICAL MANIFESTATIONS I respond to stress with stomach cramps	116	2	2.01	1.00	1	1.315	70-79
GASTRONOMICAL MANIFESTATIONS I respond to stress with stomach acid	116	2	2.00	1.00	1	1.351	70-79
BEHAVIORAL MANIFESTATIONS I respond to stress by using over-the-counter drugs	116	2	1.33	1.00	1	.800	60-69
BEHAVIORAL MANIFESTATIONS I respond to stress by using prescription drugs	116	2	1.50	1.00	1	1.153	70-79
BEHAVIORAL MANIFESTATIONS I respond to stress by using alcohol	116	2	1.85	1.00	1	1.144	80-89

Teachers in this study are reporting greater manifestations of stress than at least 60% of the normative population across multiple factors. The symptoms participants are experiencing can be classified as either physical or emotional, however, an argument can be made that all the stress manifestations represent the teachers in this sample are experiencing, or are susceptible to start experiencing, burnout. When teachers are exposed to prolonged work related stress, which can be due to work demands and workload, chronic depletions in their emotional and physical states can be incurred, referred to as burnout (Wright and Cropanzano, 1998; De Vente et al., 2003; Aronsson et al., 2017; Erdiller and Doğan, 2015). Within burnout physical symptoms such as fatigue, changes to the way pain is felt, gastrointestinal issues and cardiovascular symptoms can occur (Kahill, 1988; Salvagioni et al., 2017). These symptoms are all represented in the manifestations of stress present in table 20.0. Previous studies have shown that not having enough time or being able to have autonomy of how you manage your time can result in somatic symptoms of stress (Macan, 1994; Claessens et al., 2007), and symptoms are clearly being manifested for this sample with regard to their cardiovascular and gastrointestinal health (see table 20.0). Teachers in this study report higher blood pressure and feeling like their hearts are racing (an increased heart rate) both of which are supported by literature (De Vente et al., 2003; Traunmüller et al., 2019). Their experiences of cardiovascular symptoms of stress are also supported by psychophysiological research and known biological interactions with stressors. The experiences of raised heart rate and blood pressure are an autonomic response to stress caused by the sympathetic-adreno-medullar (SAM) axis which releases certain neurotransmitters that act to provide an immediate response to a stressor (De Vente et al., 2003) for example raising blood pressure. So, if they are experiencing a work-related

stressor such as too much work to do, reporting this physiological reaction is in line with scientific knowledge and understanding, supporting their claims.

Participants are also reporting manifestations of stress in terms of their emotional health, these include feelings of anxiety, being unable to cope and feeling insecure. All these emotions can lead to emotional exhaustion known to be a symptom of burnout (Jerrim et al., 2020; Toropova et al., 2020; Shin et al., 2014; Deguchi et al., 2018; Male and May, 1997). These symptoms can also warn of a longer term impact on health as feelings such as 'being unable to cope' activate the hypothalamic-pituitary-adrenal axis (HPA) which causes immunosuppression in the long term (De Vente et al., 2003; Henry, 1993; Linden et al., 1997; Peters et al., 1999). This activation of the HPA and long-term effect on health could be an explanation towards the reports of using 'prescription drugs' as a behavioural manifestation. Of course, prescription drugs may not just be being used to alleviate physical symptoms of stress, they could also be being used to buffer the effects of stress on mental health. Burnout has been shown to correlate with increased use of antidepressants and other psychotropic drugs (Salvagioni et al., 2017). Jerrim et al. (2020) found that 3.9% of teachers in their survey (of a population of 5,943) used anti-depressants, 3.4% had a lasting mental health illness and that there was only a 0.2% difference in the number of teachers reporting they had a lasting mental health illness with those that said the illness had been caused by their job. Fimian et al. (1985) found that one in 20 teachers reported using prescription drugs if they were experiencing a stressor to a great or major strength. This figure was the same was for over-the-counter drugs. Participants in this study also report greater instances of using over the counter drugs as a behavioural response to stress, these could be being used to combat the symptoms of stomach pain, cramps and acid. One

behavioural response to stress which is of note is that of 'using alcohol'. Using alcohol is a form of disengagement that is considered a dysfunctional coping strategy (Carver et al., 1989). Participants in this study are placed in the 80-89 decile, the highest decile of any subitem for stress manifestations showing its prominence within the results (see table 20.0). Anxiety, a feature of the emotional symptoms of burnout, is known to increase the risk of hazardous alcohol consumption and has been shown in previous studies to be a coping mechanism adopted by teachers (Fimian et al., 1985; Quraishi et al., 2018; Deguchi et al., 2018) which could provide an explanation for the increased use of alcohol due to the increased levels of anxiety also being reported.

There were two clear patterns that emerged regarding the self-reported stress of teachers in this study, the sources of stress– time management and work-related stressors, were manifested emotionally, physically and in their behaviour.

Having too high a workload (Deakin et al., 2010; Gibson et al., 2015; Sellen, 2016; Deguchi et al., 2018; Allen et al., 2019), too many pressures on your time and having spillover (Erdamar and Demirel, 2014) into the private life are all well documented to impact wellbeing and for teachers in this study, having too much work to do and too little time to do it in was clearly evidenced in the number of stress manifestations that were affecting them.

In conclusion, all the major sources of stress that participants in this study are experiencing are supported by literature and the qualitative data from the focus groups and interviews.

The manifestations of these stressors are also found in research as well – being underpinned by known biological responses to stress. The coping mechanisms employed to deal with the stress such as using over the counter or prescription drugs are not maladaptive, but the prevalence at which teachers in this study are using alcohol to disengage from stress are of concern.

6.03 Results – Demographics

There were five demographics that were found to have differences in their sources of stress and stress manifestations. These being management level, subject taught, years teaching, percentage of pupil premium and SEND students taught. Table 21.0 displays where significant differences were found in groups using Kruskal-Wallis test and table 22.0 displays the breakdown of TSI items within these subscales that were significantly different within the group.

Table 21.0: Kruskall-Wallis for demographic versus TSI total and subscale score

Hypothesis Test Summary				
Null Hypothesis for Demographic	Test	Sig.[a,b]	Decision	Pairwise Comparison (p)
The distribution of PD AVG is the same across categories of Management Level.	Independent-Samples Kruskal-Wallis Test	0.028	Reject the null hypothesis.	Non-management-Middle Management 0.014
The distribution of D&M AVG is the same across categories of Management Level.	Independent-Samples Kruskal-Wallis Test	0.013	Reject the null hypothesis.	Middle Management-Non management 0.015 Middle Management-Lower management 0.006 Senior Management-Lower management 0.046
The distribution of PI AVG is the same across categories of Management Level.	Independent-Samples Kruskal-Wallis Test	0.007	Reject the null hypothesis.	Senior Management-Non management 0.012 Senior Management-Middle Management 0.012 Senior Management-Lower management 0.001
The distribution of FM AVG is the same across categories of Management Level.	Independent-Samples Kruskal-Wallis Test	0.017	Reject the null hypothesis.	Senior Management-Middle Management 0.043 Senior Management-Lower management 0.019 Senior Management-Non management 0.002
The distribution of FM AVG is the same across categories of SubjectBucketCode.	Independent-Samples Kruskal-Wallis Test	0.048	Reject the null hypothesis.	Bucket 2-Bucket 1 0.020 Bucket 2-Bucket 4 0.018 Bucket 2-Bucket 3 0.003

Management level impacted sources of stress in the subscale professional distress (see table 22.0). Senior managers had the lowest mean for needing more status and respect by over one mean value compared to non, low and middle management. It is important to note that these means do not place any group in a decile higher than that of 50-59, but senior managers are in the decile of 10-19 which is considerably lower than the other groups (see table 22.0). One can take a common-sense view when looking to provide an explanation for this result. It would follow that within a hierarchical structure, such as a school, where levels of authority are so clearly defined, that a headteacher would be afforded more respect and have more status. This finding is mirrored in the stress source professional investment. Again, all participants who were not senior managers had higher means for lacking control over decisions about their classroom and school – they do not have the status or are afforded the respect. Supporting this, Agai–Demjaha et al. (2015) found that 60.7% of teachers in their study, who were classified as lower pay grade (which lower management and middle management are) reported decisions being made, such as changes in terms and conditions without consultation, were very stress inducing – compared with just 35.8% of upper pay grade teachers (senior management). From this one can deduce that senior managers are more involved in decisions as they have more status, therefore less reason to be affected by this issue. This could also be a reason as to why non managers are reporting greater stress sources of not feeling their opinions are being sufficiently aired. If they are not being involved in decision making, their knowledge or experience respected or are deemed not to have enough status to be able to contribute to school life, then this would lead to great instances of this stress source. Senior managers also report little to not stress (decile=00-09) for lacking recognition for the extra work/good teaching they do when every other profession level group places in a decile of 30-39 or higher (see table 22.0). Lacking recognition is not explained in terms of lacking promotion

opportunities as this TSI item was not significant within this group. However, one explanation can possibly be provided by Kyriacou and Sutcliffe (1979) who found that heads of department reported greater stress and had higher intention to leave the profession as they felt their salary was inadequate. Inadequate salary could be towards an explanation for the teachers not in senior management lacking recognition for the extra work that they are doing but this was not found to be a significant stress source in this thesis. Although middle managers have high means for professional distress (first and second) they were not the highest across other TSI subscales. This differs to Lambert (2023) who found that middle managers in their study were the only group that produced significant results when looking at profession level and stress. However, this study reported middle managers were often having to do extra work such as covering for staff absence, work longer hours and sacrifice their own wellbeing to fulfil the responsibilities of their role – this would link to middle managers having the second highest mean for lacking recognition for the extra work that they are doing (see table 22.0) in this thesis. This is also supported by NAHT (2021) who produced a report which included that 86.0% of middle managers felt more professional recognition and a reduced workload (70.0%) would make their job more attractive. If 70% said that improving these areas would make the job more attractive, then this could suggest that conversely nearly three quarters of middle leaders in their report felt they lacked professional recognition, and their workload is too high.

For the stress sources of discipline and motivation, low and non-management teachers had the highest means for having more problems in the classroom and feeling like their productivity is being rejected by students and/or administration (see table 22.0). A teacher with no additional responsibility will have more lessons timetabled to teach compared to

those with responsibilities. Their time is spent in the classroom delivering lessons and it would therefore fit that non-management would experience these stressors, along with low management the most – purely from increased exposure to students as more lessons to teach. This finding is supported by Munn et al. (2007) who found significant differences in the types and frequency of behaviours that classroom teachers versus headteachers were dealing with. In this study teachers reported much higher incidences of having problems in the classroom.

Table 22.0: Kruskal-Wallis and demographic TSI subscale items

Demographic	TSI Item	Test	Sig.[a,b]	Group Means		TSI Decile
Profession Level	PD – I need more status and respect on my job	Independent-Samples Kruskal-Wallis Test	0.020	Non-management	3.18	40-49
				Lower management	3.14	40-49
				Middle Management	3.46	50-59
				Senior Management	2.08	10-19
	PD – I lack recognition for the extra work and/or good teaching I do	Independent-Samples Kruskal-Wallis Test	0.040	Non-management	2.41	30-39
				Lower management	2.86	40-49
				Middle Management	2.41	30-39
				Senior Management	1.33	00-09
	D&M I feel frustrated because of discipline problems in my classroom	Independent-Samples Kruskal-Wallis Test	0.012	Non-management	2.75	40-49
				Lower management	2.50	40-49
				Middle Management	1.95	10-19
				Senior Management	2.17	20-29
	D&M I feel frustrated when my authority is rejected by pupils/administration	Independent-Samples Kruskal-Wallis Test	0.044	Non-management	3.00	50-59
				Lower management	3.14	50-59
				Middle Management	2.51	40-49
				Senior Management	2.17	20-29
	PI – My personal opinions are not sufficiently aired	Independent-Samples Kruskal-Wallis Test	0.011	Non-management	2.43	30-39
				Lower management	3.29	60-69
				Middle Management	2.38	30-39
				Senior Management	1.92	10-19
	PI – I lack control over decisions made about classroom/school matters	Independent-Samples Kruskal-Wallis Test	0.000	Non-management	2.90	50-59
				Lower management	3.71	70-79
				Middle Management	2.84	50-59
				Senior Management	1.58	00-09
	FM I respond to stress by sleeping more than usual	Independent-Samples Kruskal-Wallis Test	0.042	Non-management	2.86	60-69
				Lower management	2.21	40-49
				Middle Management	2.30	40-49
				Senior Management	1.75	20-29
	FM I respond to stress by procrastinating	Independent-Samples Kruskal-Wallis Test	0.048	Non-management	3.29	70-79
				Lower management	3.57	80-89
				Middle Management	2.78	60-69
				Senior Management	2.33	40-49

Subject Taught	FM I respond to stress by becoming fatigued in a very short time	Independent-Samples Kruskal-Wallis Test	0.017	Bucket 1	2.90	60-69
				Bucket 2	1.92	30-39
				Bucket 3	3.39	70-79
				Bucket 4	3.43	80-89
	FM I respond to stress with physical exhaustion	Independent-Samples Kruskal-Wallis Test	0.005	Bucket 1	3.14	70-79
				Bucket 2	1.75	20-29
				Bucket 3	3.32	70-79
				Bucket 4	3.43	80-89

For example, 99.0% of teachers said they were dealing with students talking out of turn compared with 35.0% of headteachers, 88.0% reported having to deal with unnecessary noise compared with 33.0% of headteachers and 81.0% of teachers reported having to apply discipline due to students getting out of their seats without permission compared with 27.0% of headteachers. These statistics show the stark differences between non/low management teachers and middle/senior managers in terms of what they are dealing with. Greenwood (2021) explains how a clear hierarchical structure within a school can help with behaviour management of students. If we follow this logic, then as issues get escalated, they would pass from non/low management through to middle management and then upwards to senior management. One can assume that as this is happening the number of behaviours decreases as they move up the chain, meaning that senior managers and middle managers would have less contact with dealing with behaviour so less sources of stress, resulting in the lower means

The Increased sources of stress for those not in senior leadership positions Is found to increase the fatigue manifestations of stress they are experiencing (see table 22.0). Non, low and middle managers all have greater manifestations of procrastination and having to sleep more. Procrastination is an avoidance coping mechanism that teachers may being reporting higher levels of due to the tasks they are avoiding inducing (or being perceived by the person to induce) negative emotions such as anxiety (Sirois, 2023). It will be interesting when TPAT items are compared with TSI scores to see if certain tasks are causing procrastination for this sample. Sleeping more is a consequence of stress that is not often cited in literature with stress normally being found to cause sleep disturbances, insomnia and overall poor quality sleep, all which mediate the potential for burnout (Gluschkoff et

al., 2016; Okamura et al., 2010; Poon et al., 2019; Waqas et al., 2015). Non-managers were the only group to have a decile 60-69 or above so finding out why this group are sleeping more when faced with these specific stress sources would be an interesting future study. In conclusion, teachers whose profession level is below that of senior management are not being given the level of respect they feel they should be, are lacking recognition for the extra work that they are doing, are experiencing more disruption in the classroom. They are experiencing greater levels of procrastination than their senior colleagues demonstrating an avoidance coping mechanism which could do more harm than good in the long term.

Subject taught showed very distinct differences in manifestations of fatigue for participants. Teachers delivering the bucket two subject of mathematics are in the deciles of 30-39, and 20-29 for getting fatigued in a short time and experiencing physical exhaustion (see table 22.0) with all other subject teachers being in at least 60-69. Bucket four subject teachers have the greatest manifestations of fatigue, and these subjects include art, the performing arts and physical education. The physical nature of performing arts and physical education could be responsible for the high levels of physical exhaustion, however, bucket one and three subject teachers (English, the sciences, geography, languages etc) which do not require as much physical movement as bucket four, are all in the deciles of 70-79 which is also high. Fatigue score, although higher for bucket four teachers, are still in the deciles of 60-69 for English teachers and 70-79 for bucket three subject teachers – again these are high. A direct comparative study which could go towards explaining this finding between mathematics and other subject teachers was not able to be located in literature, but a study conducted by Bishay (1996) found that mathematics teachers reported higher levels of happiness, involvement, feelings of success and also

lower intentions to leave the profession. Having higher scores in the factors Bishay measured could contribute to a greater overall sense of wellbeing at work, and improved wellbeing is reported in literature to lower fatigue, accounting therefore for this finding (Cham et al., 2021; A. P. Smith, 2019; Sonnentag and Zijlstra, 2006). Further study is needed to ascertain the sources of stress leading to fatigue for these subject teachers as no source of stress subscales of the TSI were found to be significant to help shed light on these findings.

Table 23.0 displays the results of Spearman's Ranks analysis for years teaching, percentage of pupil premium and percentage of SEND students where significant relationships were found in total stress and TSI subscale scores. Increased numbers of pupil premium and SEND students being taught is shown to affect the total stress score of teachers – it increases. SEND percentage is found to have the greatest effect on stress manifestations and has the most sources of stress with six subscales, plus total stress score being found significant. Table 24.0 shows the items within each subscale impacting the self-reported stress of these populations.

Table 23.0: Spearman's Rank Correlation Coefficient versus demographic for TSI subscale and total score

		TSI Subscale and Total							
		TM AVG	PD AVG	PI AVG	EMS AVG	FM AVG	GM AVG	BM AVG	TSI AVG
Years teaching	Correlation Coefficient					-.216*			
	Sig. (2-tailed)					0.019			
	N					118			
% PP	Correlation Coefficient				.208*		.329**		.223*
	Sig. (2-tailed)				0.026		0.000		0.017
	N				114		114		114
%SEND	Correlation Coefficient	.204*	.246**	.266**	.264**	.245**		.205*	.268**
	Sig. (2-tailed)	0.031	0.009	0.005	0.005	0.009		0.030	0.004
	N	112	112	112	112	112		112	112

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As years in teaching increases, the fatigue manifestations of stress the teachers experience is shown to decrease. Several reasons as to why this result has been found can be postulated. The first is that a third of teachers leave the profession within their first five years of teaching (Walker, 2023) and the most cited reasons are workload and burnout, fatigue being a symptom of burnout (Asthana and Boycott-Owen, 2018; Conley and You, 2016; Kersaint et al., 2007; McCarthy, 2019). Early career teachers (ECTs), who are specifically mentioned as part of the focus groups in stage one of this thesis, face extra pressures due to lack of experience of classroom management, lack of physical resources and the requirement to gather extra evidence aside from performance management to progress from the 'NQT' to the 'ECT' phase of their careers (Gager and Percival, 2022; Whitfield, 2019). Therefore, the converse to this, is that as a teacher progresses through their career, they are more equipped to deal with and are more familiar with the rhythm of school life and the less fatigue they suffer. However not all literature shows that as years teaching increases, stress decreases. Kinnunen and Salo (1994) found when surveying a population of teachers over a period of eight years that at the end of the time period teacher wellbeing had decreased and decreased wellbeing has been shown to increase experiences of fatigue as previously mentioned. Another reason for this finding could be that as years teaching increases, the level of responsibility could also increase. As a teacher progresses in years, and gains more managerial responsibility, the time in the classroom decreases therefore there are less opportunities to have to deal with behaviour management or the workload of planning and delivering lessons as well as in marking of students' work, reducing exposure to sources to stress so lowering the opportunity for fatigue manifestations overall. Evidence to support this theory is found in the sample demographics of Mulholland et al. (2013) where 80.0% of teachers in middle management had been teaching for 16 or more years, and no senior leader had any classroom teaching

responsibilities. Years in teaching affecting fatigue manifestations could be supported the findings for professional level. Profession level analysis found that teachers who are not in senior leadership roles have the highest means for fatigue manifestations with (see table 24.0). As profession level would increase with time in teaching, these two results are supportive of one another.

Table 24.0: Spearman's Rank Correlation Coefficient TSI item for demographic years teaching, % pupil premium, % SEND

TSI Subscale Item		Demographic		
		Years teaching	% PP	%SEND
FM I respond to stress by becoming fatigued in a very short time	Correlation Coefficient	-.225[*]		.282[**]
	Sig. (2-tailed)	0.014		0.003
	N	118		112
FM I respond to stress with physical weakness	Correlation Coefficient			.224[*]
	Sig. (2-tailed)			0.018
	N			112
EMS I respond to stress by feeling insecure	Correlation Coefficient			.311[**]
	Sig. (2-tailed)			0.001
	N			112
EMS I respond to stress by feeling vulnerable	Correlation Coefficient			.320[**]
	Sig. (2-tailed)			0.001
	N			112
EMS I respond to stress by feeling unable to cope	Correlation Coefficient		.226[*]	.214[*]
	Sig. (2-tailed)		0.016	0.024
	N		114	112
EMS I respond to stress by feeling anxious	Correlation Coefficient			
	Sig. (2-tailed)			
	N			
GM I respond to stress with stomach pain of extended duration.	Correlation Coefficient		.327[**]	
	Sig. (2-tailed)		0.000	
	N		114	
GM I respond to stress with stomach cramps	Correlation Coefficient		.313[**]	
	Sig. (2-tailed)		0.001	
	N		114	
GM I respond to stress with stomach acid	Correlation Coefficient		.226[*]	
	Sig. (2-tailed)		0.016	

				114	
TM – I easily over-commit myself	Correlation Coefficient				.214*
	Sig. (2-tailed)				0.024
	N				112
PD – I receive an inadequate salary for the work I do	Correlation Coefficient				.221*
	Sig. (2-tailed)				0.019
	N				112
PD – I lack recognition for the extra work and/or good teaching I do	Correlation Coefficient				.219*
	Sig. (2-tailed)				0.020
	N				112
PI – I lack control over decisions made about classroom/school matters	Correlation Coefficient				.242*
	Sig. (2-tailed)				0.010
	N				112
PI – I am not emotionally/intellectually stimulated on the job	Correlation Coefficient				.217*
	Sig. (2-tailed)				0.021
	N				112
BM I respond to stress by using alcohol	Correlation Coefficient				.235*
	Sig. (2-tailed)				0.013
	N				112

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Pupil premium students, when in higher numbers for a teacher's classes taught, is shown to increase emotional and gastrointestinal manifestations of stress (table 24.0). Teacher's report having extended periods of stomach pain and stomach cramps, increases in stomach acid, feeling unable to cope and vulnerable more often and having increased feelings of anxiety. The overall stress score is also significant.

Pupil premium is a grant that is awarded to schools where there are disadvantaged students with the aim of improving progress. Pupils that qualify for this premium are

- pupils who are eligible for free school meals, or have been in the past six years
- looked-after children
- previously looked-after children

(GOV.UK, 2023b)

Links between manifestations teachers are experiencing with increasing numbers of pupil premium students being taught could be explained when considering student progress and accountability measures. As discussed as part of the literature review, student progress is measured through 'Progress 8' and 'Attainment 8'. In 2017 the average point score (the measure of Attainment 8) for 'disadvantaged' students was 37, for 'non disadvantaged' students it was 49.8 (Foody, 2019). This discrepancy in progress is a national figure and the individual teacher, if teaching in a school with a higher proportion of pupil premium students, could experience lower student attainment than if teaching in a school with less disadvantaged students. Linked with the accountability measures teachers are held to, and performance linked pay progression, this could explain why teachers are experiencing strong manifestations of anxiety and feeling unable to cope – their students are statistically less likely to make progress due to their socio-economic status, regardless of the skill of the teacher. The OECD (2020) found that teachers that worked with more disadvantaged

students reported higher levels of stress and anxiety, supporting these findings. Agyapong et al. (2022) found that student type and lack of student progress had a positive correlation with teacher stress, anxiety and depression demonstrating that there is a link between these factors. Teachers in this study with higher percentages of pupil premium students also report strong gastrointestinal stress manifestations. This may not be a surprising result as anxiety has been shown to increase experiences of somatic symptoms such as stomach pain. Means-Christensen et al. (2008) reported that where participants in their study had anxiety disorders, they were 2.5-10 times more likely to state they were experiencing stomach pain. Stomach pain, in a study conducted by Garrusi et al. (2019), was found to have a significant relationship with participants who were identified as experiencing anxiety – the more anxious they reported being, the more stomach pain they said they experienced.

Where teachers have higher numbers of students with special educational needs and disability, they are shown to have the highest number of stress manifestations across all the demographics (see table 24.0). They have significant subscale stress scores for fatigue manifestations, professional distress, emotional manifestations, time management, professional investment, behaviour manifestations and their total stress score is also significant. These findings are directly supported by literature. Teachers working with students with SEND have been found to work longer hours, have larger workloads, report increased levels of emotional exhaustion, emotional stress, burnout and have to deal with more challenging behaviour (Male and May, 1997; Kersaint et al., 2007; J. Williams and Dikes, 2015). Jerrim et al. (2020) did an extensive study comparing primary, secondary, special education and Headteachers. The results showed that SEND teachers had higher

levels of anxiety, lower levels of life satisfaction, more lasting health and mental health problems as well as the highest levels of depression compared to primary, secondary and Headteachers. They also reported the highest level of believing that their job had led to lasting health and mental health problems. Amongst other professions such as healthcare workers and civil servants they also had some of the highest levels of unhappiness. There is overlap between the manifestations of stress for teachers of pupil premium and SEND students. This is an expected result due to the previous reporting that SEND students are twice as likely to be categorised as pupil premium than their non-SEND classmates. This could also explain why teachers with higher proportions of SEND students in their classes are experiencing the emotional manifestations of feeling vulnerable and unable to cope more strongly than reported for pupil premium (see table 24.0). Teachers in this group are the only group where a behavioural manifestation of stress is found – that of increased use of alcohol. Where a workforce has been found to have high strain, low autonomy jobs, they have also been reported to be experiencing chronic occupational stress leading to higher levels of alcohol consumption, alcohol related health problems and alcohol consumption disorders (Brady and Sonne, 1999; Crum et al., 1995; Seeman and Seeman, 1992) . The higher reports of lacking control, not being intellectually stimulated, lacking recognition and over-commitment would all support previous literature regarding the increase in alcohol use. Overall, it appears that where numbers of SEND students in mainstream schools' increase, the stress effect for the teachers also increases, across multiple areas.

6.04 Results – Gender

There was no significant difference found between the TSI total stress score and gender. Both male and female teachers have an overall stress strength of 'moderate' (see appendix two). Emotional manifestations of stress is the only subscale score between genders

reporting a significant difference (see appendix two). Each item of the TSI tested against gender and returned items where p≤0.05 are displayed in table 25.0. Ten items of the TSI are found to have a 296relevance in terms of gender and these are within the stress sources of work-related stressors and discipline and motivation and stress manifestations gastrointestinal, cardiovascular, emotional and fatigue.

Table 25.0: Independent samples test for TSI item versus gender

TSI Subscale			Levene's Test for Equality of Variances		t-test for Equality of Means						
			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
										Lower	Upper
Work related stressors	There is too much administrative paperwork in my job	Equal variances assumed	0.006	0.936	2.002	125	0.047	0.386	0.193	0.004	0.768
		Equal variances not assumed			2.071	56.777	0.043	0.386	0.186	0.013	0.760
Gastrointestinal Manifestations	I respond to stress with stomach pain of extended duration.	Equal variances assumed	8.227	0.005	2.398	124	0.018	0.650	0.271	0.114	1.187
		Equal variances not assumed			2.863	77.791	0.005	0.650	0.227	0.198	1.102
	I respond to stress with stomach cramps	Equal variances assumed	9.273	0.003	2.680	124	0.008	0.702	0.262	0.184	1.221
		Equal variances not assumed			3.196	77.599	0.002	0.702	0.220	0.265	1.140
Cardiovascular manifestations	I respond to stress with rapid and/or shallow breath	Equal variances assumed	17.659	0.000	2.814	123	0.006	0.718	0.255	0.213	1.223
		Equal variances not assumed			3.759	97.389	0.000	0.718	0.191	0.339	1.097

										Lower	Upper
Emotional manifestations	I respond to stress by feeling vulnerable	Equal variances assumed	5.837	0.017	2.976	124	0.004	0.831	0.279	0.278	1.384
		Equal variances not assumed			3.386	69.461	0.001	0.831	0.245	0.341	1.321
	I respond to stress by feeling anxious	Equal variances assumed	0.685	0.409	2.346	124	0.021	0.614	0.262	0.096	1.133
		Equal variances not assumed			2.465	58.770	0.017	0.614	0.249	0.116	1.113
Fatigue manifestations	I respond to stress by becoming fatigued in a very short time	Equal variances assumed	2.243	0.137	2.468	124	0.015	0.663	0.269	0.131	1.195
		Equal variances not assumed			2.305	48.012	0.026	0.663	0.288	0.085	1.241
	I respond to stress with physical exhaustion	Equal variances assumed	2.718	0.102	3.640	124	0.000	0.904	0.248	0.413	1.396
		Equal variances not assumed			3.353	47.030	0.002	0.904	0.270	0.362	1.447
Discipline and motivation	I feel frustrated because of discipline problems in my classroom	Equal variances assumed	0.024	0.878	-2.001	124	0.048	-0.503	0.252	-1.001	-0.005
		Equal variances not assumed			-2.039	55.457	0.046	-0.503	0.247	-0.998	-0.009
	I feel frustrated having to monitor pupil behaviour	Equal variances assumed	0.461	0.498	-2.799	124	0.006	-0.632	0.226	-1.078	-0.185
		Equal variances not assumed			-2.638	48.667	0.011	-0.632	0.239	-1.113	-0.150

Table 26.0: TSI Subscale item with means and TSI decile for gender

TSI Subscale	TSI Subscale Item		Mean	TSI Decile
Work related stressors	There is too much administrative paperwork in my job	1 Female	4.07	80-89
		2 Male	3.69	70-79
Gastrointestinal Manifestations	I respond to stress with stomach pain of extended duration.	1 Female	2.21	70-79
		2 Male	1.56	50-59
	I respond to stress with stomach cramps	1 Female	2.20	70-79
		2 Male	1.50	50-59
Cardiovascular manifestations	I respond to stress with rapid and/or shallow breath	1 Female	2.23	60-69
		2 Male	1.52	40-49
Emotional manifestations	I respond to stress by feeling vulnerable	1 Female	2.89	60-69
		2 Male	2.06	30-39
	I respond to stress by feeling anxious	1 Female	3.49	80-89
		2 Male	2.88	60-69
Fatigue manifestations	I respond to stress by becoming fatigued in a very short time	1 Female	3.32	70-79
		2 Male	2.66	50-59
	I respond to stress with physical exhaustion	1 Female	3.40	80-89
		2 Male	2.00	30-39
Discipline and motivation	I feel frustrated because of discipline problems in my classroom	1 Female	2.34	30-39
		2 Male	2.84	50-59
	I feel frustrated having to monitor pupil behaviour	1 Female	2.18	20-29
		2 Male	2.81	40-49

Means within these items and their decile placements are displayed in table 26.0. Female teachers have a higher mean for each item of the TSI except those items contained with the stress source factor of discipline and motivation. Although significant differences are found in means within the stress source of discipline and motivation, the mean scores for these items' places both male and female teachers in deciles of below 60-69 (see table 26.0).

Within the work-related stressors 'too much admin' shows a significant relationship with female teachers having the highest mean and this mean also putting them within the 80-89 decile – very high. Theories surrounding workload and findings from the focus groups and interviews as part of stage one of the thesis can provide insight into this finding. During stage one, the number of administrative tasks came up repeatedly with the teachers taking part such as marking, filling in forms such as standardised lesson plans and completing data. It can therefore be suggested that if a teacher had more lessons to teach, the admin involved with those lessons would increase and with more female teachers being non managerial, classroom based, this could explain this finding. Although 63.1% of the workforce in secondary schools is female, only 53.3% of senior leaders and 40.1% headteachers are. As of 2020 66.2% of 'classroom teachers' and 62.5% of 'middle leaders' were female (DfE, 2022). With the majority of those being based primarily in the classroom being female teachers then the result of them being stressed by too much administration is understandable. The proportion of female teachers being classroom based could also help explain the fatigue manifestations results that were significant. Female teachers report higher levels of physical exhaustion as well as being more susceptible to becoming fatigued in a very short time. Teaching is a physically demanding job by its nature, those

who teach more would be more likely to expend more energy throughout the day due to delivering more lessons. This finding is also supported by multiple studies where female teachers were found to be working longer hours, had more care demands on their time outside of work adding to pressures and increased levels of burnout (Erdamar and Demirel, 2014; Skaalvik and Skaalvik, 2017; Salanova et al., 2008).

Manifestations of stomach pain and stomach cramps within gastrointestinal manifestations are also higher with female than male teachers. As previously explained, this somatic symptom of stress is well supported within literature. With female teachers reporting higher levels of stress in each subscale of the TSI (except discipline and motivation) this physical expression of stress is not unexpected. Biologically, there are also factors that could affect this result. Although more research is needed in the field, it is widely accepted that females are more sensitive to pain and that pain sensitivity also fluctuates throughout the menstrual cycle with the greatest sensitivity being during the luteal phase (Bartley and Fillingim, 2013). The biological effect on this manifestation does need to be taken into consideration.

Within cardiovascular manifestations female teachers are experiencing rapid and/or shallow breath more often than their male colleagues. A study conducted by Kanene and Mushungekelwa (2016) with secondary school teachers in Zambia found no difference between male and female teachers when analysing TSI results for this stress manifestation. However, My and Juliana (2012) who conducted their investigation with lecturers found

that female lecturers were more stressed overall than male and that the most reported symptom was that of breathlessness.

It could be theorised that cardiovascular and gastrointestinal manifestations along with feelings of anxiety are inextricably linked. Pain has been shown to increase the flow and frequency of ventilations as well as increase anxiety and perceptions of pain (Jafari et al., 2017; Chaitow, 2004; Ward and Karan, 2002). This could form a cycle, where anxiety and stress cause pain, or increases sensitivity to it, pain causes breathlessness, pain also causes anxiety which then adds to the effects on breathing. If female teachers are more biologically sensitive to pain, then the cycle described above could be more prevalent for them.

Emotional manifestations is the only subscale of the TSI that has an overall significant result between the male and female mean, with female teachers having the higher mean. There are two subitems that tested significant within this these being feeling vulnerable and feeling anxious.

Feeling vulnerable at work is when an employee feels exposed, criticised, or feels like they cannot make mistakes. They feel that they are more susceptible to hurt, are unable to act like themselves and their feelings of self-efficacy are dependent upon the approval of others (Quantum and Limeade, 2015; Oc et al., 2020). Ofsted (2019) reported that lack of trust from managers was building a 'culture of fear', which could lead to feeling more vulnerable. Johnston (2018) conducted a study with multiple leaders regarding

vulnerability and the leaders themselves thought that more space for vulnerability and an increased culture of trust would increase respect, foster a learning culture, reduce burnout, and increase productivity. Feeling vulnerable was also expressed by participants in stage one of this thesis. An explanation as to why female teachers are experiencing greater feelings of vulnerability could be held within the profession level differences between the genders. If nearly three quarters of all classroom teachers are female in the secondary sector, but more male teachers hold positions of authority as senior leaders, then it would be natural to deduce that female teachers, purely by reason of them being less likely to hold a managerial position, would feel more vulnerable due to them facing more of surveillance and accountability measures daily. A specific study exploring differences in feelings of vulnerability between male and female teachers could not be found but could be interesting – especially if profession level was also a factor of investigation.

Although female teachers are experiencing more anxiety, an important note is that the male respondents mean for this subitem did place them in the 60-69 decile which is high (see table 26.0). Female teachers experiencing greater levels of anxiety is supported by some literature as female teachers have been found to be nearly 4 times as anxious as male teachers and also report greater symptoms of anxiety (Georgas and Giakoumaki, 1984; Desouky and Allam, 2017). However, Othman and Sivasubramaniam (2019) found no statistical difference in the reported levels of anxiety between male and female secondary teachers in Malaysia and Husain et al. (2016) found that male teachers were experiencing greater levels of anxiety in their study. Overall, the evidence is that the teaching population do experience greater levels of anxiety than a lot of other professions but there is no definitive answer within literature as to the role that gender plays.

The only subscale of the TSI which found male teachers having more manifestations of stress was that of discipline and motivation. Male teachers report more instances of stress due to discipline problems in the classroom and having to monitor pupil behaviour (see table 26.0). For disciple problems in the classroom, it appears that it could be the type of behaviour that male teachers face which is affecting this difference in stress scores, as female teachers are documented to deal with more instances of poor behaviour on the whole (NUT, 2008; Chinery, 2008). Chinery (2008) reported that 57.0% of male teachers were subject to offensive language and anger from students compared with 32.0% of female teachers. However, in this same report 79.0% of students did say that they were more likely to misbehave for a female teacher. In 2008, the NUT conducted a poll regarding student behaviour. They found that male teachers had higher instances of disruption, unwanted physical contact and swearing than female teachers. Monitoring student behaviour also showing to be a stressor for male teachers more than their female colleagues, links with the results of the earlier analysis for profession level. Men being more stressed in this area could be due to the differences in proportion of male teachers at senior management level, there are more, and due to the types of behaviours that headteachers are exposed to outlined in Munn (2007) such as physical and verbal abuse, they find this more stressful to deal with.

6.05 Implications

Overall, the results show that teachers in this sample are experiencing multiple symptoms of burnout and some could be experiencing chronic stress (Drake and Hebert, 2002; Bümen, 2010; Bermejo and Prieto-Ursúa, 2014; Rajendran et al., 2020)s. Working hours,

lack of respect and lack of control in their working lives is resulting in anxiety, feelings of vulnerability and being unable to cope. This is particularly prevalent with female teachers of which nearly 70.0% of the teaching workforce is composed. These high stress levels, in multiple areas could reduce the job satisfaction and intention leave of teachers in England (Rajendran et al., 2020), and with the current retention crisis happening, this would only further exacerbate issues such as workload due to understaffing (Bümen, 2010; Perryman et al., 2011; Perryman and Calvert, 2020). The high levels of stress that are reported could lead to increased anxiety, and other psychiatric illnesses such as depression. In fact, burnout and depression have been found to high correlations with each other, as well as there being correlations between anxiety and stress (Agyapong et al., 2022). Previous research has called for more administrative support, or for reductions in the amount of administrative work teachers are completing due to the direct correlation with decreasing anxiety, and therefore burnout (Kamal et al., 2021) when it is reduced. The findings of this thesis would support this call due to the documented impact of workload on stress manifestations. With 70.0% of the teaching population reporting being worried about their mental health, and nearly 4.0% already having a mental health illness (Jerrim et al., 2020) then interventions are required to manage the wellbeing of the teaching population (Agyapong et al., 2022) . However, with all the manifestations being reported, there was no increase in teachers reporting calling in sick as measured by the TSI. This could point towards an issue with sickness presenteeism which would cause longer lasting issues and exaggerate those already in existence. Burnout, a moral imperative such as not wanting to let colleagues or student down, high workload and understaffing have all been shown to increase sickness presenteeism (Baker-McClearn et al., 2010; Gustafsson and Marklund, 2014; Hansen and Andersen, 2009; Howard et al., 2009; Miraglia and Johns, 2016) – and all of these factors are shown to be affecting the population sampled for this study. Teachers

who have more sickness presentism are 2.5 times more likely to suffer with depression. If teachers are present for more than two days when sick they have poorer work ability, if present for more than six days are 74.0% more likely to have sickness absence of two months or more later on and, effects on mental wellbeing have been reported to not manifest in some cases for twelve months, they remain hidden (Aronsson and Marklund, 2018; Baker-McClearn et al., 2010; Howard et al., 2009; Kidger et al., 2016; Miraglia and Johns, 2016; Salvagioni et al., 2017). The culmination of this would be a workforce that is sicker for longer and reporting lower wellbeing, and as previously discussed, lower wellbeing affects retention, and fewer teachers affects workload, and this forms a cycle of increasing work-related stress. Therefore, workload, as a matter of urgency and in relation to administrative tasks outside of teaching time that teachers are completing should be reviewed and reduced to try and alleviate some of the sources of stress that teachers are facing, to remove the opportunities for these to manifest and therefore reduce burnout, sickness presenteeism and increase retention.

A particular area for focus is with teachers whose classes comprise higher numbers of SEND students, who are also more than twice as likely to be pupil premium – another indicator of experiencing greater work-related stress. The pressure to progress the learning of these students, against well-known gaps in attainment is leading to fatigue, anxiety, health conditions where prescribed medications are needing to be used, and, more worryingly, an increase in alcohol consumption which is known to cause negative long-term health, and mental health effects (Brady and Sonne, 1999; Crum et al., 1995; Deguchi et al., 2018; Fimian et al., 1985; Seeman and Seeman, 1992; Watts and Short, 1990). When looking at the numbers, in 2022 there was a 23.0% increase in the number of education and health

care plans that were requested in England (what an SEND student will have in place), this was up by 7.0% from 2021 (GOV.UK, 2023c). However, the rate at which these applications are being processed is decreasing (GOV.UK, 2023c) meaning funding for SEND students cannot be provided so extra support in the classroom cannot be put in place. With SEND students also representing students who are classified as 'pupil premium' more often, the statistics for this are also provide warning of future consequences on teacher wellbeing. The number of children in care rose by 2.0% in 2022 and is predicted to rise by nearly 20.0% by 2025 (GOV.UK, 2022; CCN, 2021). The number of children receiving free school meals rose by 2.3% in 2022 meaning that two million children are in receipt of free school meals, but there are reportedly a further 215,000 who are eligible but not enrolled for the scheme (Roberts, 2023; GOV.UK, 2023a). The number of students who meet the requirements to be SEND and/or pupil premium such as being looked after, on free school meals or having an education and health care plan are increasing. With a shrinking teaching workforce, due to retention issues due to workload, burnout, and accountability measures, but greater numbers of SEND and pupil premium students, the stressors that teachers will experience will only be increased. Schools where the proportions of these students are high should be a focus for targeted interventions into workload reduction and wellbeing for teachers.

With such a stark difference in the levels of fatigue bucket one, three and four subject teachers are experiencing and those who teach mathematics, an investigation is required with respect to how these roles differ in order that that lessons learned can be applied into other curriculum areas, reducing sources of stress and stress manifestations. With shortages in teacher recruitment, and 3,300 unfilled vacancies at the time of writing, a

fatigued workforce could lead to great instances of sickness presenteeism, absenteeism and attrition.

6.06 Conclusion – Teacher, Teacher Demographics and Stress

This phase of analysis set out to address the research question *'what are the reported levels of stress for secondary teachers based in England?'*. Through extensive analysis this study has been able to provide an answer.

Teachers are undoubtedly experiencing stress within their jobs with 89% of respondents experiencing moderate to strong manifestations of different stressors. As a whole population, time management and work-related sources of stress are reflected in the stress manifestations of exhaustion, fatigue, anxiety, and gastrointestinal issues with teachers in this sample using prescription and over the counter drugs to manage the symptoms of stress. Increased alcohol consumption is also evident. Teachers whose classes comprise of more students with SEND and who are pupil premium have the largest number of stress manifestations, with SEND teachers displaying manifestations of burnout. Senior leaders are feeling much more respected in their jobs, though teachers not in such roles are subject to multiple sources of stress. Across the demographic categories, each manifestation of stress was represented as was each source of stress.

An obvious limitation of these findings is the sample size. However, although the sample size is relatively modest, the comparison between national figures and the statistics for my participants are largely in line with each other showing that my sample was representative of the teaching profession in England. Sourcing literature to support or contradict my

findings proved difficult in some areas such as for education level of teachers and stress manifestations. But this does identify a gap in the literature currently available. A final limitation is that some of my explanations regarding gender and stress have relied upon biological features. My participants were asked to provide the gender they identified as, not what their biological sex was. Therefore, when looking at areas such as higher frequency of pain manifestations it may be that the scientific underpinning for these explanations was not applicable to some participants.

From this discussion I have identified some further research that I think could be of benefit to the academic community. Teachers of mathematics showed significantly lower signs of fatigue than all other subjects. A detailed explanation could not be provided so a study that seeks to find out why could help inform teachers of other subjects how they can adapt their practice, or perhaps how their subject is monitored and scrutinised to decrease fatigue manifestations across all curriculum areas. An area of recommended future study is that of male teacher and the TSI dimension of discipline and motivation. With male teachers experiencing more violent forms of student misbehaviour, but female teachers experiencing higher frequency of misbehaviour and this could impact their productivity by the teacher losing lesson time. A further study could be to determine how loses more time during lessons male or female teachers. If provided the new definition for productivity could there be a correlation between discipline and motivation, gender of the teacher and feelings of productivity? Finally, leadership and its impact on the emotional manifestations of stress for female teachers should be investigated. As senior management is dominated by men it would be interesting to explore further if the same differences in feelings of vulnerability were present when female teachers had female managers, or if it could be explained in terms of leadership style, rather than leader gender.

These findings have been able to contribute to knowledge in several areas. Firstly, the headline figures add to the wealth of literature that exists surrounding teacher stress and provides some recent data to base this on being collected in 2021. The findings for teachers who have larger proportions of SEND students add to the literature regarding the poor wellbeing of this demographic of teachers. Interventions to support SEND teachers can be directed in specific areas. Lastly, early career teachers have been found to experience greater levels of fatigue. This adds to the bank of studies that have found that up to 40% of teachers leave within the first five years of teaching. Although the government has attempted to introduce initiatives and new models to support ECTs, if they can be supported more effectively, they are more likely to remain in teaching where these manifestations will decrease, more teachers will be retained, and productivity increased.

6.07 Teacher Productivity and Stress

The final stage of this thesis seeks to explore if a relationship exists between the self-perceived productivity for secondary school teachers in England and their wellbeing, one aspect of which is stress, measured in this study with the Teacher Stress Inventory (Fimian, 1988). This final round of exploratory analysis meets this aim and provides an understanding of which specific tasks, and their related feelings of productivity, are contributing to, or detracting from, self-reported teacher stress.

6.08 Method

The same sample of participants was used to perform analysis as with previous stages. That being of 118 secondary school teachers in England which are a largely proportionate representation of the workforce in England, except for ethnicity, which is not reported in these findings due to the disproportionate representation of participants outside that of 'white British' and 'white other' (see page 184).

Data from the TPAT and Teacher Stress Inventory (TSI) were analysed using Spearman's Rank Correlation to determine if relationships between items in TPAT and the TSI exist. Multiple correlations where r=≥0.20 are reported. Results where r=≤0.20 are not reported due to the relationship possibly being deemed negligible. Findings from TPAT versus TSI are compared with significant results that were found in the analysis of teacher stress (see page 241) and in the TPAT versus demographic analysis (see page 232). No significant correlation was found between the fatigue manifestations subscale of the TSI and TPAT items and therefore is not reported on. When discussing feelings of productivity, the definition derived as part of stage one of this thesis is used as the basis for explanations this being

'things you do that contribute to the learning and life enrichment of your students' (see page 124).

6.09 Results –TSI total stress, subscale stress score and TPAT items

Ten out of 16 TPAT items returned a significant correlation with total or subscale total stress scores for the sampled population, with these tasks split evenly between frequency of task completion and feelings of productivity when completed.

Table 27.0: Spearman's Rank Correlation results for average TSI score for subscale and overall vs items in TPAT

TPAT Items		TM AVG	WRS AVG	D&M AVG	PI AVG	GM AVG	BM AVG	Total stress
		Total stress and TSI Subscale						
FRQ Set form lesson plan	Correlation Coefficient				.201[*]	.234[*]		
	Sig. (2-tailed)				0.029	0.011		
	N				118	118		
FRQ plan and/or deliver a school trip(s)	Correlation Coefficient			-.275[**]				
	Sig. (2-tailed)			0.003				
	N			117				
FLG plan and/or deliver a school trip(s)	Correlation Coefficient					-.216[*]		
	Sig. (2-tailed)					0.021		
	N					113		
FRQ classroom observations linked to PM	Correlation Coefficient	.269[**]	.237[**]					
	Sig. (2-tailed)	0.003	0.010					
	N	118	118					
FRQ reviews of feedback I give to my students linked to PM	Correlation Coefficient							.202[*]
	Sig. (2-tailed)							0.028
	N							118
FRQ reviews of the grades students achieve linked to PM	Correlation Coefficient		.237[**]					
	Sig. (2-tailed)		0.010					
	N		118					
FLG attend meetings about PM	Correlation Coefficient						.201[*]	
	Sig. (2-tailed)						0.031	
	N						116	
FLG speak /meet with parents outside of parents evening	Correlation Coefficient				-.257[**]			-.215[*]
	Sig. (2-tailed)				0.006			0.022
	N				114			114

FLG follow BM policy	Correlation Coefficient				-.230*			
	Sig. (2-tailed)				0.014			
	N				113			
FLG complete tasks associated with BM policy	Correlation Coefficient	-.243**						
	Sig. (2-tailed)	0.010						
	N	113						

Two tasks are shown in table 27.0 to exert an effect on the total stress score of participants in this sample, these being the frequency of reviews of feedback (marking) and feelings of productivity when speaking and/or meeting with parents outside of parents evening. However, reviews of marking show a positive correlation – it increases the total stress of the teachers when conducted more frequently, whereas, communicating with parents is shown to decrease total stress when deemed more productive.

Four sources of stress factors were identified in relation to certain tasks. For time management, teachers having more frequent classroom observations are experiencing more stress, but when teachers are feeling more productive when following behaviour management policies, they are less stressed by sources in time management. Work-related stressors also see a positive correlation with increased frequency of classroom observations and for when teachers have more reviews of the grades their students are achieving. Discipline and motivation show that when teachers are planning and/or delivering school trips more frequently, sources of stress in this factor are decreased. The factor of professional investment has the most correlations against TPAT items with three tasks showing a significant correlation. Increasing frequency of planning using a standardised pro forma is shown to increase sources of stress whereas, feeling more productive when speaking with parents outside of parents evening and when following a behaviour management policy, sources of stress for this factor decrease. Lesson planning also influences gastrointestinal manifestations when increased in frequency – the manifestations for this factor are increased. However, feeling productive when planning and/or delivering school trips more often decreases these manifestations. One item within behavioural manifestations returned a significant correlation this being that when teachers

are feeling more productive in attending performance management related meetings, behavioural manifestations of stress are increased. The specific items within these factors are discussed in turn.

6.10 Time Management

Table 28.0 displays the TPAT items that were found to have significant correlations with items in the TSI stress source of time management. There are four TPAT items that are showing to have a relationship with five stress source items in time management.

Table 28.0: Spearman's Rank Correlation Coefficient for time management TSI subscale items vs TPAT items

TPAT Items		Time Management Items				
		I easily over-commit myself	I become impatient if others do things to slowly	I have to try doing more than one thing at a time	I think about unrelated matters during conversations	I rush in my speech
FRQ classroom observations linked to PM	Correlation Coefficient	.206[*]			.229[*]	
	Sig. (2-tailed)	0.025			0.013	
	N	118			118	
FRQ reviews of the grade's students achieve linked to PM	Correlation Coefficient		.284[**]		.208[*]	
	Sig. (2-tailed)		0.002		0.024	
	N		118		118	
FLG speak /meet with parents outside of parents evening	Correlation Coefficient					-.256[**]
	Sig. (2-tailed)					0.006
	N					114
FLG complete tasks associated with BM policy	Correlation Coefficient			-.226[*]		
	Sig. (2-tailed)			0.016		
	N			113		

From these results the associated TPAT items can be split into distinct categories, those that increase stress and those that decrease it, and furthermore, increased frequency increases stress and increased feelings of productivity decrease it.

Both items increasing stress for time management are from the TPAT factor 'performance management'. These tasks (classroom observations and reviews of student's grades) are shown to be increasing teachers over-committing, becoming impatient and thinking about unrelated matters during conversations. In terms of overcommitment one can imagine how a teacher would attempt to achieve a lot during a lesson observation to demonstrate the best in their practice, and when receiving feedback following these could be distracted by other demands on their time accounting for them thinking about unrelated matters. This could also apply during meetings to reviews students' grades, and if these are occurring more frequently, teachers could become impatient if deemed as too time consuming. Overcommitment was found to be a significant stress source for the sample population when analysing TSI responses in isolation, and how this stress sources of 'overcommitment' can now be linked with increased regularity of classroom observations. Teachers with higher numbers of SEND students were found to be 'over-committing' themselves and therefore, increased frequency of classroom observations could increase a source of stress for them within the factor of time management. Teachers with higher proportions of pupil premium students were found in TPAT to be having more reviews of the grades their students achieve than any other demographic but were not found to be more stressed for time management stress sources during examination of TSI data, however this could warn of a future stress source. Planning and completing observations and having reviews of students' grades were also found to have the highest differences in terms of frequency and

their perceived productivity when TPAT analysis was conducted – they were more frequent but perceived as less productive. With classroom observations increasing time management sources of stress this could be related to the perceived impact on productivity. If teachers are completing tasks more frequently that they consider to not be impacting the learning or life enrichment of their students, they could find these more stressful due to making demands on their time when they think it could be spent more productivity elsewhere.

Both TPAT items in table 28.0 associated with lowering sources of stress have a link between them as one can assume that a task associated with a behaviour management policy would be that of speaking or meeting with parents outside of parents evening. If a teacher is feeling more productive when speaking to parents, they may be calmer and therefore not rush in their speech. In fact, this could be a deliberate action to increase the feeling as productivity when speaking with parents as slower speech has been found to be seen as more passive, so can de-escalate situations as well being seen as more appropriate in terms of seriousness and persuasiveness (Johnson and Hauser, 2001; Apple et al., 1979). If a teacher is speaking with parents as part of completing a step of a behaviour management policy this could impact on the behaviour management in their classrooms and mean that as well as trying to teach, they are not having to deal with as many disruptive behaviours, decreasing them having to do more than one thing at a time. Teachers with higher proportions of pupil premium and EAL students were found to have increased feelings of productivity for these tasks and could therefore be less likely as a population to find these tasks as a time management source of stress. When analysing the sample population for this TSI subscale in isolation of TPAT, having to do more than one thing was

a significant source of stress but from the results in table 28.0 cannot be accounted for by having to speak with parents and/or carers or with completing tasks for a behaviour management policy so it must be other areas of a teachers everyday job role inducing this stress source.

6.11 Work Related Stressors

Work related stressors has three TPAT items showing a significant correlation with items of this TSI subscale, all these are all relating to performance management tasks. However, the two tasks associated with frequency are shown to increase stressors, whereas the one TPAT item referencing feelings of productivity is decreasing this stress source as feelings of productivity increase.

Table 29.0: Spearman's Rank Correlation Coefficient for work related stressors items and TPAT items

TPAT Items		Work Related Stressor Items		
		There is little time to prepare for my lessons/ responsibilities	The pace of the school day is too fast	My personal priorities are being short changed due to time demands
FRQ classroom observations linked to PM	Correlation Coefficient			.251**
	Sig. (2-tailed)			0.006
	N			118
FRQ reviews of the grade's students achieve linked to PM	Correlation Coefficient		.243**	
	Sig. (2-tailed)		0.008	
	N		118	
FLG classroom observations linked to PM	Correlation Coefficient	-.224*		
	Sig. (2-tailed)	0.016		
	N	116		

As with time management, the TPAT items of classroom observations and reviews of students' grades are increasing stress – the teachers are feeling that the pace of the day is too fast, and their personal priorities are being short changed due to time demands. For pace of the day being too fast linking with student grades', teachers may be reflecting that there is not simply the time to be able to hold these more frequently. In terms of lesson observations, the planning and preparation for these could mean that teachers are having to spend more time outside of work to prepare. These two TSI subscale items were also significant for the sample population from the TSI analysis, with the results in table 29.0 now able to identify specific tasks that could be contributing to this work-related stress source.

There are positive results found within the analysis of TPAT items versus the TSI subscale of work-related stressors. Table 29.0 shows that as feelings of productivity increase for lesson observations, feeling that there is little time to prepare for lessons decreases. This is in opposition to the TSI results for this subscale item where the sample population were found to be experiencing this stress source. If we explore this in relation to the definition derived from stage one – that productivity is the contribution that a teacher makes to the learning of their student, then time spent planning a lesson could be seen as productive if feedback is constructive and allows the teacher to develop their practice to contribute to learning in more or improved ways. Therefore, feeling there is too little time would be diminished as where their time has been spent, it has been spent productively. This could be an area of focus to reduce work-related stress, ensuring that where classroom observations are performed, they are designed in such a way that teachers value them and

find them productive, decreasing perceived negative demands on their time, decreasing this source of stress.

6.12 Professional Distress

Two items from TPAT are found to impact the items found within the TSI stress source factor of professional distress (table 30.0). From the analysis teachers are reporting that if they find completing lesson plans for the week using a mandated style more productive, they are also reporting feeling that they are not progressing as rapidly as they would like. Referring to the definition of productivity, this result, although initially seeming counterintuitive can be explained. Stepping away from a progression through job role and promotion interpretation of this TSI item, and looking at it from a 'progress through workload' lens, if a teacher is dedicating more time to planning in a specific way for the entire week ahead, as mandated by their school, then when they complete that planning, although perhaps onerous on their time, could give them the perception that what they have done is contributing to the learning of their students and therefore could be increased. Overall, this could be making them feel like they are not able to progress other areas of their job, simply down to time demands but simultaneously are being productive by planning in this way. The findings in table 30.0 can also give some insight into the TPAT analysis (see page 227) that showed this task was completed rarely and was rarely deemed as productive to teachers. They may be viewing the task of planning for the week ahead as a blocker to them progressing through other work, which is why they rarely do this. Although these explanations seem contradictory, they both can be applicable, if a teacher feels planning for the week ahead using a set pro forma is unproductive, they rarely do it,

but when they do this, and feel more productive doing it, the time spent doing this means they cannot make as much as progress through other tasks as they would want to.

'I need more status and respect' was a TSI item shown to be causing more stress for teachers who were non-management when TSI analysis was conducted (see page 256). By looking at table 30.0, it can be ascertained that if speaking with parents can be more productive, then this stress source of needing more status and respect can be reduced. The findings in table 30.0 link with those from time management (see table 28.0) which showed reduced stress sources when this task was perceived more productive. Literature has found that when there is good parent-teacher communication that the support given to schools and teachers increases and that there can be positive impact upon student performance (Burchby, 1982; Chen, 2005; Gotts, 1983; Graham-Clay, 2005; Walberg, 1984) . Therefore, ways to communicate with parents and carers productively, in ways that ultimately then help teachers contribute to the learning and enrich the life of their students should be fostered to reduce teachers feeling disrespected and lacking status.

Table 30.0: Spearman's Rank Correlation Coefficient for professional distress TSI subscale items and TPAT items

TPAT Items		Professional Distress Items	
		I am not progressing my job as rapidly as I would like	I need more status and respect on my job
FLG Set form lesson plan	Correlation Coefficient	.202*	
	Sig. (2-tailed)	0.033	
	N	112	
FLG speak /meet with parents outside of parents evening	Correlation Coefficient		-.244**
	Sig. (2-tailed)		0.009
	N		114

6.13 Discipline and Motivation

There are four TPAT items showing a significant correlation with five items of the TSI subscale for discipline and motivation as shown in table 31.0. By far, the TPAT item showing the greatest impact is that of planning and/or delivering school trips. Across four TSI subscale items when teachers are involved more with school trips, their sources of stress are decreased. For example, teachers are reporting less discipline problems in their classrooms, feeling less frustrated having to monitor pupil behaviour, having less frustration due to students lacking motivation and lesser instances of their authority being rejected. This finding gives strong support for teachers having more opportunities to be involved in extracurricular activities to improve their classroom management and reduce stress in this area. This opportunity could be of extra use for classroom teachers and those in lower management positions who were found to have the highest means for stress in these subscale items.

Table 31.0: Spearman's Rank Correlation Coefficient for discipline and motivation TSI subscale items and TPAT items

TPAT Items		Discipline & Motivation Items				
		I feel frustrated because of discipline problems in my classroom	I feel frustrated having to monitor pupil behaviour	I feel frustrated because some students would do better if they tried	I feel frustrated because of inadequate/poorly defined discipline problems	I feel frustrated when my authority is rejected by pupils/administration
FRQ plan and/or deliver a school trip(s)	Correlation Coefficient	-.300**	-.281**	-.227*		-.202*
	Sig. (2-tailed)	0.001	0.002	0.014		0.029
	N	117	117	117		117
FRQ classroom observations linked to PM	Correlation Coefficient				.305**	
	Sig. (2-tailed)				0.001	
	N				118	
FRQ reviews of feedback I give to my students linked to PM	Correlation Coefficient				.268**	
	Sig. (2-tailed)				0.003	
	N				118	
FLG speak /meet with parents outside of parents evening	Correlation Coefficient		-.220*			
	Sig. (2-tailed)		0.019			
	N		114			

Another task showing to reduce stress, but in relation to it being perceived as productive is that of speaking and meeting with parents – echoing the results found in the sources of professional distress and time management. When teachers are having more productive conversations with parents, they are feeling less frustrated with having to monitor pupil behaviour – indicating that instances of poor or disruptive behaviour may decrease because of these conversations, reducing the need to monitor. This supports the previously cited literature where improved teacher-parent communication can impact upon pupil behaviour and provides some empirical support to the definition for teacher productivity derived during stage one of this thesis – that having productive conversations enables the teacher to contribute to the learning of their students and enrich their lives, underpinning the theoretical basis for this definition.

However, there are two TPAT items increasing sources of stress when completed more frequently. Again, these are found in the performance management factor of TPAT — having more classroom observations and having more reviews of marking. Both are shown to correlate with increased feelings of frustration due to inadequate and poorly defined discipline problems. Poorly defined discipline problems can be due to issues such as a disruptive home life, maltreatment of the child, cultural pressures or peer to peer issues (Linde, 2022; Eckenrode et al., 1993). All of these are outside of a teachers control and although they may attempt, to best of their efforts to establish a safe and secure learning environment, these extraneous issues could surface during a lesson observation which would impact upon the evaluation that is given of their practice as part of their performance management. Having observations more often would therefore intrinsically increase the opportunity for these frustrations to be experienced. Factors outside the

classroom could also affect the reviews of marking. If students, for example, are not completing homework due to a turbulent home life and this is missing from their work, then a teacher having more frequent reviews of marking will have their practice scrutinised against this backdrop, again increasing opportunities for these frustrations to arise. Therefore, the findings for lesson observations and marking reviews suggest that where teachers are dealing with student cohorts who have complex discipline needs or complex behaviours due to extraneous factors, these should be taken into consideration and perhaps the frequency of performance management tasks for these classes reduced or given caveats to alleviate teacher stress.

6.14 Professional Investment

Professional investment sources of stress versus TPAT items follows the same pattern as those for previous TSI sources, that being that when frequency of performance management tasks increases so do the reports of stress for teachers in this sample, displayed in table 32.0. Increased frequency of classroom observations, reviews of marking and reviews of students grades all increase teachers not feeling that they are being emotionally and/or intellectually stimulated during them. This stressor was found to prevalent for teachers with higher proportions of SEND students during analysis of TSI responses (see table 20.0). This finding would indicate that performance management tasks may not be contributing to the improvement in practice of teachers, they are not offering them opportunities to improve their subject knowledge or pedagogy. If they were, then the outcome of these observations and reviews should be to stimulate them in terms of their practice, therefore stimulating them intellectually. This finding could have also been seen as having a possible 329 impact. If teachers are not being emotionally stimulated

by these performance management tasks, then that could mediate for them being anxiety inducing or initiating feelings such as being unable to cope. However, analysis of emotional manifestations of stress later discussed against these TPAT items does not support this and therefore these findings should be considered more in reference to the intellectual stimulation they are, or in this case are not offering to teachers. With specific mention to teachers with higher percentages of SEND students, these students are known to make less progress than their non-SEND peers. Therefore, this group of teachers may need more than any other group the purpose of these observations and reviews to be tailored towards how they can progress their teaching, or how they can implement targeted interventions to close the progress gap of their students and thereby stimulating them intellectually.

Table 32.0: Spearman's Rank Correlation Coefficient for professional investment TSI subscale items and TPAT items

TPAT Items		Professional Investment Items		
		My personal opinions are not sufficiently aired	I lack control over decisions made about classroom/school matters	I am not emotionally/intellectually stimulated on the job
FRQ classroom observations linked to PM	Correlation Coefficient			.224*
	Sig. (2-tailed)			0.015
	N			118
FRQ reviews of feedback I give to my students linked to PM	Correlation Coefficient			.217*
	Sig. (2-tailed)			0.019
	N			118
FRQ reviews of the grade's students achieve linked to PM	Correlation Coefficient			.245**
	Sig. (2-tailed)			0.007
	N			118
FLG speak /meet with parents outside of parents evening	Correlation Coefficient	-.213*	-.208*	-.287**
	Sig. (2-tailed)	0.023	0.026	0.002
	N	114	114	114
FLG follow BM policy	Correlation Coefficient		-.218*	-.224*
	Sig. (2-tailed)		0.020	0.017
	N		113	113

As with professional distress, discipline and motivation and time management, when teachers are reporting greater feelings of productivity when speaking to or meeting with parents, their sources of stress are diminished. In relation to professional investment, teachers are feeling more in control about decisions, more emotionally stimulated and that their opinions are being aired sufficiently. All these TSI subscale items support the definition of productivity as all of these areas such as having more control would lead the teacher to feeling that they are being able to contribute to the learning of their students and by speaking with parents and building better relationships can enrich the lives of their students. This finding would also support that increased feelings of productivity decrease professional investment sources of stress when following a behaviour management policy as part of doing this would be to speak with parents, and when they feel more productive in those conversations, then by them having followed the behaviour management policy this is now perceived as productive.

6.15 Emotional Manifestations

Teachers who are planning and/or delivering school trips, and deem these to be productive report lower feelings of anxiety. Moran (2017) found that teachers who were more involved with extra-curricular activities reported greater job satisfaction, performance, and commitment. They also found a link with educational achievement of students who took part in extra-curricular activities. An argument can be made that the finding of increased feelings of productivity reducing anxiety when involved in extra-curricular activities can be explained by the findings from the TSI subscale of 'discipline and motivation' (see table 33.0). In the subscale of discipline and motivation where teachers were reporting greater frequency of being involved in extra-curricular activities, frustrations with discipline issues

were all decreased. Theory from the discipline of psychology can provide explanations as to these findings. Basic needs theory explains that humans are driven by three main psychological needs of autonomy, competence and relatedness (Deci and Ryan, 2004). Deficiencies in these areas can lead to 'need frustration' (Tindall and Curtis, 2019) which is a predictor ill-being in areas such as depression, anxiety and stress. Therefore, frustrations found within discipline and motivation could be exacerbated by the teacher's perception on their autonomy, competence, and relatedness (how they feel in terms of their student-teacher relationships). Put simply, teachers who experience more frustrations in terms of discipline and student motivation will have need frustrations relating to their perceived level of competence (they're behaviour management strategies are not getting the desired outcomes) and their relatedness (they are not establishing a sense of closeness or belonging with their students). This is supported by Hart (1987) who found when investigating classroom practice that class disruption had the highest correlation with teacher anxiety and Hagenauer et al. (2015) who found that better inter-personal relationships between teachers and their students was the strongest predictor for reducing teacher anxiety (when investigating teacher emotions). Therefore, if teachers are involved with more extra-curricular activities, and these make them feel more productive, then their need frustrations are being minimised and their need satisfactions are being increased, leading to lower ill-being in the form of less anxiety.

Table 33.0: Spearman's Rank Correlation Coefficient for emotional manifestations TSI subscale items and TPAT items

TPAT Items		Emotional Manifestation Items		
		I respond to stress by feeling insecure	I respond to stress by feeling unable to cope	I respond to stress by feeling anxious
FLG plan and/or deliver a school trip(s)	Correlation Coefficient			-.229[*]
	Sig. (2-tailed)			0.015
	N			113
FRQ reviews of feedback I give to my students linked to PM	Correlation Coefficient		.224[*]	
	Sig. (2-tailed)		0.015	
	N		118	
FRQ reviews of the grades students achieve linked to PM	Correlation Coefficient		.239[**]	
	Sig. (2-tailed)		0.009	
	N		118	
FLG reviews of feedback I give to my students linked to PM	Correlation Coefficient		.258[**]	
	Sig. (2-tailed)		0.006	
	N		114	
FLG attend meetings about PM	Correlation Coefficient	.201[*]		
	Sig. (2-tailed)	0.030		
	N	116		

All other TPAT items that are found to influence emotional manifestations of stress relate to performance management tasks. Frequency of reviews of marking and of student grades increase the feelings of being unable to cope. This in the long term can cause stimulation of the HPA axis which suppresses the immune system leading to ill health. Therefore, frequency of these tasks should be reduced wherever possible. Feeling more productive when have marking reviews is also increasing feelings of being unable to cope for teachers in this sample and when feelings of productivity are increased during meetings about performance management, feelings of insecurity are also increasing. This could be explained by the accountability measures that teachers are now accepting of being subject to, due to the neoliberal education culture they have grown up and trained in, and which are framed as measures that will ultimately improve the progress of their students. To take part in meetings for receiving feedback for their marking (or any other performance management related task), much preparation or prior work must have been completed. Marking involves providing formative feedback to students – this is enhanced feedback rather than just providing a score to students. It is believed by some, mainly from research published in the 1990s, that providing formative feedback produces learning gains, especially for low ability students (Black, P. 2000; Black and Wiliam, 1998). This led to a necessity of providing formative feedback as part of good practice and teachers are now expected to provide detailed feedback for each student for each assessment and general classwork (GOV.UK, 2016). This greatly increases the workload of teachers, up to a six times increase in workload can be found between providing summative and formative feedback due to how time consuming it is (Biggam, 2010; Ming, 2005). Therefore, preparing for meetings and reviews of their marking would ensure that teachers are having to spend more time on this, especially to produce marking that is in line with what is modelled as good practice – and that the teacher is now conditioned to perceiving as a contributor to

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the learning of their students. This extra time and work completed to meet the need of them feeling productive is therefore leading to increased feelings of being unable to cope, due to the workload, and of insecurity – that the work they are producing will not be deemed as a model of good practice. However, more recent research has shown that formative feedback does not contribute to learning gains and in fact has been found to lower student attainment and motivation (E. Smith and Gorard, 2005). If the effect on student progress is not certain in literature, but the effect on teacher workload and stress is, and is also found to be 336a source of stress in this study, then marking policies should be re-designed to reduce the workload of teachers and their emotional manifestations of stress. In fact, this recommendation was made by the Teacher Workload Review Group who stated in their 'Eliminating Unnecessary Workload around Marking' report (2016, pp.5-6)

> *"Our starting point is that marking – providing written feedback on pupils' work – has become disproportionately valued by schools and has become unnecessarily burdensome for teachers. There are a number of reasons for this, including the impact of Government policy, what has been promoted by Ofsted, and decisions taken by school leaders and teachers. This is not to say that all marking should be eliminated, but that it must be proportionate….. In particular, we are concerned that it has become common practice for teachers to provide extensive written comments on every piece of work when there is very little evidence that this improves pupil outcomes in the long term…. It can be unmanageable for teachers, and teachers forced to mark work late at night and at weekends are unlikely to operate effectively in the classroom."*

However, it would appear from the findings of this research that reviews of marking, based on a requirement for teachers to provide extended and detailed feedback, and therefore be subject to a deemed necessary level of workload are still in full effect, especially supported with this TPAT item being found to not only increase emotional manifestations of stress but increase stress across seven other TSI factors

6.16 Cardiovascular & Gastrointestinal Manifestations

Table 30.0 displays the results for cardiovascular and gastrointestinal manifestations of stress. Eight TPAT were found to have a significant correlation with these types of TSI manifestations with one TPAT task being shown to reduce a manifestation.

Teacher that are completing planning for the week ahead are reporting greater experiences of stomach pain and stomach cramps – these two manifestations could in essence be linked if the teacher considers a cramp to be painful. Interestingly, female and teachers with higher proportions of pupil premium students also report greater experiences of this manifestation, with female teachers also reporting higher means for feeling that there is 'too administrative work to do'. With more female teachers being classroom teachers and not holding managerial positions, they will be teaching more lessons per week as previously discussed. Pupil premium teachers will be needing to put into place more interventions for their students due to progress gaps. Therefore, increasing the frequency of having to plan for the week ahead using a set pro forma, with the level of detail that is required, would undoubtedly increase the workload of those teachers. A proposed explanation for the relationship between these TPAT and TSI items is that women repeatedly report higher total workload hours than their male colleagues (Krantz et al., 2005; Lindfors et al., 2006) and with increased workload being shown to increase gastrointestinal symptoms of stress (Nixon et al., 2011; Salvagioni et al., 2017), this stress manifestation would be increased. Therefore, being made to plan for the week ahead should be reviewed, especially for those teachers not in managerial positions (and more likely to be female) so reduce these somatic symptoms to reduce sickness presenteeism which could impact productivity of the teacher

Table 34.0: Spearman's Rank Correlation Coefficient for cardiovascular manifestation TSI subscale items and TPAT items

TPAT Items		Cardio and Gastro Manifestation Items				
		I respond to stress with feeling of heart pounding or racing	I respond to stress with rapid and/or shallow breath	I respond to stress with stomach pain of extended duration.	I respond to stress with stomach cramps	I respond to stress with stomach acid
FRQ Set form lesson plan	Correlation Coefficient			.252**	.257**	
	Sig. (2-tailed)			0.006	0.005	
	N			118	118	
FLG plan and/or deliver a school trip(s)	Correlation Coefficient				-.261**	
	Sig. (2-tailed)				0.005	
	N				113	
FRQ classroom observations linked to PM	Correlation Coefficient		.219*			
	Sig. (2-tailed)		0.017			
	N		118			
FRQ reviews of feedback I give to my students linked to PM	Correlation Coefficient	.215*	.223*			
	Sig. (2-tailed)	0.019	0.015			
	N	118	118			
FLG classroom observations linked to PM	Correlation Coefficient	.253**	.209*			
	Sig. (2-tailed)	0.006	0.024			
	N	116	116			
FLG reviews of feedback I give to my students linked to PM	Correlation Coefficient	.290**				
	Sig. (2-tailed)	0.002				
	N	114				

FLG attend meetings about PM	Correlation Coefficient	.251**				
	Sig. (2-tailed)	0.007				
	N	116				
FLG follow BM policy	Correlation Coefficient		.213*			.214*
	Sig. (2-tailed)		0.023			0.023
	N		113			113

Increasing feelings of productivity when planning or delivering school trips has teachers in the sample reporting lower experiences of stomach cramps. This result, it is proposed, is linked with the previous finding where teachers reporting greater feelings of productivity for this same task are also reporting lower levels of anxiety (see table 29.0). Evidence has shown that there is a correlation between how the gastrointestinal system works in response to certain states of emotion (Mayer et al., 2001). Anxiety, as an emotional state is repeatedly cited in literature as being linked with increase reporting of gastrointestinal symptoms (Mayer et al., 2001; Campo et al., 2004; Haug et al., 2002). Cantarero-Prieto and Moreno-Mencia (2022) reported that participants who stated they had gastrointestinal issues were 8.8% more likely to be experiencing anxiety with Mussell et al. (2008) reporting that those experiencing anxiety were up to four times more likely to be experiencing gastrointestinal symptoms. Therefore, as feelings of productivity increase, and anxiety decreases, gastrointestinal symptoms also decrease. This finding provides further support to the recommendations already made about increasing the opportunity for teachers to be involved in more extra-curricular activities to reduce stress in multiple areas.

Following a behaviour management policy, when teachers are feeling more productive, has a positive correlation with increased breathing rate and production of stomach acid. To follow a behaviour management policy, there must be an unwanted behaviour to start the process. Confronting and dealing with an unwanted behaviour is likely to induce a physiological stress response by activating the SAM axis, and this in turn increases the breathing rate of the teacher but, is also affective in making the teacher more alert and provides energy – both of which could be beneficial when dealing with disruptive, aggressive, or violent behaviour. A physiological stress response can also explain the

increased reporting of stomach acid as increased exposure to stress is found to increase production of gastric acid by stimulating catecholamine production (Fatemeh et al., 2011; Levi, 1988; Mustafa et al., 2015) a process of the SAM axis. Therefore, for teachers to feel more productive when imposing behaviour management strategies, a greater stress response is elicited to increase the positive effects of this such as more energy and alertness whilst at the same producing the manifestations of rapid breathing and increased stomach acid. However, long term production of stomach acid can lead to stomach ulcers which are a serious risk to health.

All remaining TPAT items that display a significant correlation with TSI subscale items are related to performance management tasks. As frequency and feelings of productivity for classroom observations, marking reviews and attending meetings increases so do the reports of teachers experience feelings of their heart racing (increased heart rate) and rapid breathing (increased breathing rate). Again, these manifestations have a physiological basis, however, it can also be argued that it is the emotions that these tasks are inducing in the teacher that produce these responses. For example, having more classroom observations could increase feelings of fear if they are feeling insecure about their practice or there are poorly defined behaviour issues with the class chosen to be observed. However, these observations could also bring a feeling of excitement if a teacher feels that they are going to be displaying their good classroom practice which will be judged to be productive – it contributes to the learning of their students. Receiving feedback in meetings about marking or their classroom practice if positive could elicit feelings of joy or excitement but prior to these meetings, could induce emotions of negative valence such as fear, anger, or nervousness. All of the feelings mentioned, joy, excitement, anger and fear,

are high arousal emotions (Das, 2022) which would induce a physiological response. Joy, fear and excitement have all been proven in literature to increase heart rate before, during and following the arousal event (Wulfert et al., 2005; Piira et al., 2011; Ketonen et al., 2023; Uchiyama, 1992). Therefore, as frequency increases opportunities for these emotions to be felt increases and as feelings of productivity increase, a greater sense of joy and happiness could increase resulting in the physiological manifestations teachers in this sample are reporting.

6.17 Behavioural Manifestations

Table 35.0 displays the correlations that are found to be significant between TSI subscale items for behaviour manifestations and TPAT items.

Teachers who are reporting that they more frequently must plan for the week ahead using a standardised lesson plan are reporting that they use over the counter drugs to respond to stress. This finding is explained by the gastrointestinal manifestations of stomach pain and cramps that were also associated with this task. It would be appropriate for teachers to use over the counter remedies to deal with the symptoms of stomach pain and cramps.

Table 35.0: Spearman's Rank Correlation Coefficient for behaviour manifestation TSI subscale items and TPAT items

TPAT Items		Behavioural Manifestation Items		
		I respond to stress by using over-the-counter drugs	I respond to stress by using prescription drugs	I respond to stress by using alcohol
FRQ Set form lesson plan	Correlation Coefficient	.208*		
	Sig. (2-tailed)	0.024		
	N	118		
FRQ reviews of feedback I give to my students linked to PM	Correlation Coefficient	.205*		
	Sig. (2-tailed)	0.026		
	N	118		
FRQ reviews of the grade's students achieve linked to PM	Correlation Coefficient	.212*		
	Sig. (2-tailed)	0.021		
	N	118		
FLG reviews of the grade's students achieve linked to PM	Correlation Coefficient			.251**
	Sig. (2-tailed)			0.007
	N			115
FLG attend meetings about PM	Correlation Coefficient	.225*		.224*
	Sig. (2-tailed)	0.015		0.016
	N	116		116
FLG speak /meet with parents outside of parents evening	Correlation Coefficient		-.209*	
	Sig. (2-tailed)		0.026	
	N		114	
FLG speak / meet with parents and carers at parent evenings	Correlation Coefficient			.230*
	Sig. (2-tailed)			0.014
	N			113

Frequency in the reviews of marking and student grades is shown to increase the response of teachers in this sample using over-the-counter drugs. This is also the case for when teachers are reporting greater feelings of productivity when student grades are reviewed and when attending performance management related meetings. Referring to the emotion responses that could be induced by performance management tasks, then if in a state of fear or nervousness a teacher could be taking an over-the-counter drug to alleviate symptoms and to produce a calming effect. However, they could also be using over the counter drugs to increase energy levels due to feeling unable to cope due to workload or feeling that the pace of the day is too fast. They could also be using drugs designed to stimulate the body and/or mind to increase their perceived productivity for example, staying awake for longer, or being more alert and able to concentrate could help the teacher when completing marking so that it is ready for review and teachers feel they have prepared it in a way that will be judged as productive. Teachers are also reporting using alcohol more as a response to stress when feeling more productive after attending meetings about the grades their students have achieved. Alcohol is a depressant of the nervous system and could be being used to 'wind down' after a meeting which could have induced fear or nervousness. Alcohol in this instance could also be being used as a celebration – if the review of student grades went well, and the teacher left the meeting feeling that they were being productive then they could see consuming alcohol as a reward. However, the high strain that is placed on teachers to allow to them feel productive regarding student grades could be a dysfunctional coping strategy they are employing which could lead to long term health effects and overall, in the longer term, reduce feelings of productivity due to reduced ability to perform their role.

When feelings of productivity increased for teachers when speaking to parents as part of a parents evening the use of alcohol was also increased. This use of alcohol could be used to 'relax' after a long day due to the increased hours the teacher would have worked that day to conduct a parents evening which is supported in literature where 33.3% of teachers have stated they consume alcohol to relax (Akum-Yeri and Der, 2020). This need to relax could be amplified by having multiple conversations with parents throughout an evening that have left the teacher with high adrenaline levels due to the high arousal emotions involved with speaking to parents such as fear, happiness, joy or nervousness. Speaking with parents outside of a parents evening did not increase alcohol use for the teachers in this sample but did correlate with reduced reports of using prescription drugs. As previously discovered through analysis of TPAT items with TSI items, speaking with parents outside of parents evening reduce the total stress scores of teachers and in particular increases emotional and intellectual stimulation, increases feelings of autonomy, reduces frustrations regarding student discipline and increases feelings of being respected. Reducing the stress of teachers could lead to fewer long term physical and mental health conditions reducing the need for prescription medications accounting for this result.

6.18 Overview of results

Table 36.0 provides a visual summary of TPAT items that were found to have a relationship with items of the TSI. All TPAT items are found to have at least one significant correlation but the level to which they interact with TSI items varies greatly.

Table 36.0: TPAT items with significant TSI items ranked by number of correlations

TPAT Item	TSI subscale item	Coefficient I
FLG Speaking to and/or meeting with parents and carers outside of parents evening	1. I rush in my speech 2. I need more status and respect on my job 3. I feel frustrated having to monitor pupil behaviour 4. My personal opinions are not sufficiently aired 5. I lack control over decisions made about classroom/school matters 6. I am not emotionally/intellectually stimulated on the job 7. I respond to stress by using prescription drugs	-.256 -.244 -.220 -.213 -.208 -.287 -.209
FRQ have classroom observations linked to my performance management	1. I easily over-commit myself 2. I think about unrelated matters during conversations 3. My personal priorities are being short changed due to time demands 4. I feel frustrated because of inadequate/poorly defined discipline problems 5. I am not emotionally/intellectually stimulated on the job 6. I respond to stress with rapid and/or shallow breath	.206 .229 .251 .305 .224 .219
FRQ have reviews of the feedback I give to my students linked to my performance management	1. I feel frustrated because of inadequate/poorly defined discipline problems 2. I am not emotionally/intellectually stimulated on the job 3. I respond to stress by feeling unable to cope 4. I respond to stress with feeling of heart pounding or racing 5. I respond to stress with rapid and/or shallow breath 6. I respond to stress by using over-the-counter drugs	.268 .224 .224 .215 .223 .205
FRQ have reviews of the grades my students achieve linked to my performance management	1. I become impatient if others do things to slowly 2. I think about unrelated matters during conversations 3. The pace of the school day is too fast 4. I am not emotionally/intellectually stimulated on the job 5. I respond to stress by feeling unable to cope 6. I respond to stress by using over-the-counter drugs	.284 .208 .243 .245 .239 .212
FRQ plan and/or deliver a school trip(s)	1. I feel frustrated because of discipline problems in my classroom 2. I feel frustrated having to monitor pupil behaviour 3. I feel frustrated because some students would do better if they tried 4. I feel frustrated when my authority is rejected by pupils/administration	-.300 -.281 -.227 -.202
FLG Attending meetings about my performance management	1. I respond to stress by feeling insecure 2. I respond to stress with feeling of heart pounding or racing 3. I respond to stress by using over-the-counter drugs 4. I respond to stress by using alcohol	.201 .251 .225 .224
FRQ plan each of my classes lessons for the week ahead using a standardised pro forma	1. I respond to stress with stomach pain of extended duration 2. I respond to stress with stomach cramps	.252 .257

	3. I respond to stress by using over-the-counter drugs	.208
FLG Following my school's behaviour management policy.	1. I lack control over decisions made about classroom/school matters	-.218
	2. I am not emotionally/intellectually stimulated on the job	-.224
	3. I respond to stress with stomach acid	.214
FLG Planning and completing classroom observations linked to my performance management	1. There is little time to prepare for my lessons/ responsibilities	-.224
	2. I respond to stress with feeling of heart pounding or racing	.253
	3. I respond to stress with rapid and/or shallow breath	.209
FLG Having colleagues review the feedback I give to my students linked to my performance management	1. I respond to stress by feeling unable to cope	.258
	2. I respond to stress with feeling of heart pounding or racing	.290
FLG Planning and/or delivering a school trip(s)	1. I respond to stress by feeling anxious	-.229
	2. I respond to stress with stomach cramps	-.261
FLG Planning each of my classes lessons for the week ahead using a standardised pro forma	1. I am not progressing my job as rapidly as I would like	.202
FLG Having colleagues review the grades my students achieve linked to my performance management	1. I respond to stress by using alcohol	.251
FLG Speaking to and/or meeting with parents and carers as part of parent evenings	1. I respond to stress by using alcohol	.230
FLG Completing tasks associated with my school's behaviour management policy (e.g., logging behaviour incidents)	1. I have to try doing more than one thing at a time	-.226

Table 36.0, immediately allows identification of which tasks are affecting the self-reported stress levels of teachers. Clearly, engagement with parents and carers outside of parents evening is showing to interact with self-reported stress in many areas, and all the relationships are positive – productive communication with parents reduces stress. However, moving to the next set of TPAT items, they are all regarding frequency of performance management tasks and all are shown to increase sources of stress and stress manifestations for this sample. Feelings of productivity for performance management tasks have fewer relationships stress but where they do, these relationships are in relation to emotional, physical, and behavioural manifestations of stress.

Another positive relationship can be seen with frequency of planning and/or delivering school trips. This TPAT item reduced stress in multiple areas of the stress source discipline and motivation, which in turn, decreased physiological and emotional manifestations when looking at feelings. This effect on reducing anxiety is not to be underestimated given that as previously discussed anxiety has a large role to play in physical manifestations of stress as well as with hazardous alcohol consumption which was reported as a behavioural response to experiencing stress.

Finally, following and completing tasks that are associated with a behaviour management policy was shown to decrease sources of stress when feeling of productivity were increased.

Looking at the relationships, one could conclude that where TPAT tasks are related to student interaction, student relationships and communication they reduce sources and manifestations of stress. Whereas, when tasks are based on data, administration or monitoring they are shown to increase sources of stress and stress manifestations. Therefore, an acceptable conclusion could be as distance from student interaction increases, stress also increases. This reflects the findings from the analysis of TPAT items where the tasks that had more direct student contact were ranked higher for productivity than those that were not. Therefore, increasing tasks that directly involve students and student learning outside of teaching time should be a focus, rather than tasks that remove the teacher from this, which could reduce their work-related stress. However, increased feelings of productivity did produce some manifestations of stress that could be considered as undesirable. For example, teachers using alcohol following a parents evening, or following meetings about their performance management. Further study is needed here to examine what is driving these results. Further study could uncover if these results are explained by alcohol being consumed as a dysfunctional coping strategy or just an infrequent behaviour viewed as positive by the teacher which they use to relax and/or celebrate. Neither of these two options are mutually exclusive but a deeper understanding is needed to provide a more substantial explanation as to why increased perceptions of productivity can increase alcohol use. Emotional manifestations such as feeling unable to cope or insecure also rose when perceived productivity did for performance management related TPAT items. Being unable to cope is explained through possible increases in workload that the teacher feels they must tackle to be productive. A possible outcome of these meetings could be that teachers now feel increased pressure in terms of student attainment or have increased pressure in terms of workload and this could impact their feelings of self-efficacy, in turn impacting feelings of insecurity. Again, this would be an

interesting prospect for a further work to understand the mechanisms between this TPAT and TSI item. The absence of as many relationships for feelings of productivity in relation to performance management tasks and TSI items may speak for itself – that teachers are not considering these tasks either way to be reflective on their self-perceived productivity, but it is more the action of doing them that incurs the stress. Therefore, when referring to performance management related tasks a conclusion can be provided that as frequency of tasks increases sources of stress and manifestations of stress in all cases increase, self-perceived levels of productivity are not found to be as influential in stress experiences, but where found increased feelings of productivity can also result in greater emotional, physiological and behavioural responses which are judged to be either detrimental or efficacious in lowering self-reported stress

6.19 Limitations

A possible limitation of this research is that of there being a common method bias caused by measurement context. At the time of data collection (2021) there was a second national lockdown due to the global Covid-19 pandemic. At the time of TPAT and the TSI being distributed, schools have been made to close two days after returning from the winter break in January. Due to this unexpected closure schools had extra pressures placed on them to pivot to online teaching. However, with children of 'key workers' being allowed to remain physically in school, staff found themselves trying to deliver in person and online. This context could have added to the stress that teachers were experiencing at the time. However, with the headline results of the TSI being so in line with the most recent findings of the Teacher Wellbeing Index (2023) then bias, where present should be minimal.

Using TPAT to investigate productivity and stress could provide a basis for unreliability in the results reported. Due to TPAT needing further construct validity tests with a separate sample, all findings must be considered as tentative and an indication of where sources of stress can be found in the tasks that teachers perform as part of their everyday job role. What can add value to the findings reported though is the alignment that TPAT items that induced great stress responses have with previously published literature. For example, accountability measures have long been heralded as the sources of workload, stress and attrition, and in my study, there were apparent in their correlation with increasing stress.

6.20 Future work

Further analysis of the sample data could be performed using a generalised linear model. Doing this would allow for the dependent variables of TPAT and TSI to be explored against demographics. For example, teachers who are not in senior leadership positions feel that the extra work they do is not recognised. Using a generalised linear model each item of TPAT could be analysed against this to determine if there is a certain task teacher are completing that is adding to this source of stress. Or, for teachers who teach higher proportions of SEND student having greater feelings of productivity when completing behaviour management tasks, does this increase or decrease their sources or manifestations of stress in certain areas. The findings from this would allow targeted interventions to be put into place for targeted demographics.

With such strong findings being seen for speaking with parents and carers and decreases in stress, a longitudinal study could be conducted which has a control group – no intervention, and a test group – extra communication as an intervention being put into place with parents. Relationships between feelings of productivity, stress, job satisfaction

and intention to leave could be explored to determine if, in a separate sample, the decreases in stress could be replicated providing further evidence to the impact that increased communication can have on productivity and workplace wellbeing.

6.21 Teacher Stress and Productivity – conclusions and recommendations

To understand the implications of these findings, we first need to revisit why understanding stress in relation to productivity is important, especially within the education sector in England.

The impact of stress on a workforce and economy

Absence from work costs the UK economy approximately £60 billion each year (Black, 2008; Miree, 2007) and in 2022 17 million days of work were lost due to stress, depression and/or anxiety (HSE, 2022). Absence due to stress, depression and/or anxiety is not slowing down, in fact there has been a gradual upwards trend since 2001 (HSE, 2022). In the financial year 2021/22 education placed in the top three of industries with the highest rates of absence due to these factors (behind public administration & defence and social work) and it was reported that 51% of all work-related ill health was caused by stress, depression and/or anxiety. In 2018 the DfE produced a report stating that two million sick days had been taken by teachers and support staff for stress, depression and/or anxiety. Reports of stress, depression and/or anxiety are also found to be higher with female workers (HSE, 2022), and as nearly three quarters of the teaching workforce is female (GOV.UK, 2023d), these statistics are particularly alarming. This thesis, although finding no difference in the total stress scores between male and female teachers, did find that female teachers were more stressed than their male colleagues in five separate areas of the Teacher Stress Inventory – especially with how their stress was manifested emotionally and physically and as previously discussed, female teachers are less represented at higher managerial levels which could also provide an explanation for their reported higher stress.

Stress, depression, and anxiety are all measures of workplace wellbeing. Poor general wellbeing of the teaching population, and a decrease in it over time, has been cited in literature (Ofsted, 2019; Pillay et al., 2005; DfE, 2018a) and this year the Teacher Wellbeing Index reported a wellbeing score of 43.65 for teachers in England versus a score of 51.40 for the general working population (YouGov, 2023). The 2023 Teacher Wellbeing Index (TWIX) also reported that 83% of secondary teachers are stressed, this is comparable with 80.3% of teachers in my study, with 21% are experiencing acute stress — again comparable with the 21.5% of participants who took part in my research who are experiencing severe stress as measured by the Teacher Stress Inventory. The index also included that 29% of teachers are experiencing burnout and 35% exhaustion. Worryingly, 81% of the TWIX respondents said that their mental health symptoms were being caused by their work – the highest ever response rate for this question. A conclusion drawn from the 2023 TWIX was that the teaching population, including leaders, are at an increased risk of suicide and interventions are needed.

Teacher stress and its impact on productivity

These latest reports of teacher stress, although distressing, are not surprising as literature has already been published stating that teachers are finding their levels of work-related stress unmanageable (Cann et al., 2020). This links to productivity as when a workforce has been found to have good physical and mental health they can be up to three times more productive (Vaughan-Jones and Barham, 2010), and stress, which induces poor mental and physical health, has been shown when increased to decrease productivity (Bui et al., 2021; Okeke et al., 2016). Specific to education, increased wellbeing has been found to increase student attainment and outcomes, and teacher wellbeing has even been found to be a factor in the variance of grades that students achieve (Estyn, 2013; Caprara et al., 2006;

Briner and Dewberry, 2007). If a teacher needs to be absent from work, due to illness which could be brought on by poor mental and physical wellbeing then a decrease in student outcomes and increase in workload for others can occur (Estyn, 2013). With workload being the most cited reason for teachers leaving the profession, anything that impacts levels of satisfaction for teachers in their job should be addressed, in fact, where teachers are more satisfied they are more likely to not only be more productive but also have greater commitment to staying in the profession (Krekel et al., 2019; Hoboubi et al., 2017) and this latter effect is important. The OECD (2018) have warned that there will be widespread teacher shortages due to an ageing workforce, increases in student numbers and teachers leaving, and teachers are stated by the OECD to be leaving mainly due to job dissatisfaction and burnout (due to workload) (Santiago, 2002). Secondary schools in England have higher attrition, lower recruitment, and more unfilled vacancies than their primary phase counterparts (Education Support, 2023). A recent survey conducted by Education Support (2023) found that 20% of teachers were planning to leave in the next five years, and this figure rose to 25% if teachers were working in an 'education improvement area' which ultimately means they are working with more disadvantaged and pupil premium students. Findings for this thesis indicate that if a teacher has classes with more students who have SEND, and/or are pupil premium, the feelings of anxiety and being unable to cope are increased for those teachers and these are both indicators of poor mental health and wellbeing. A more concerning statistic of teacher attrition is that in the academic year of 2021/22 teachers leaving the profession within the first two years rose to 19.9% from just 2.6% in 2020/21 (Walker, 2023). TWIX (2023) warned that the profession is on track to lose tens of thousands of talented educators and a quote from Dr Andreas Schleicher increases that risk by stating in a separate report that "*British teachers who experience stress are three times as likely to be at risk of attrition than those who don't*" (Education Support,

2023, pp.33). With over 80% of the workforce claiming they are stressed, and over 20% acutely stressed, then attrition rates can be predicted to rise. Not only does losing experienced teachers add to workload, lower student outcomes, and affect productivity (Estyn, 2013; McGrory-Dixon, 2012; Zhang et al., 2011) but it also has a financial cost to the education sector. It costs approximately £20,000 to train each teacher (Education Support, 2023), and with 32,000 teachers leaving the profession for reasons other than retirement in 2022, this is an estimated loss of £640 million. As previously discussed, the most cited reasons for teachers leaving the profession are workload, burnout, and job dissatisfaction – and one can see how these three reasons are intrinsically linked. Teachers spend more of their working hours completing tasks outside the classroom than they do teaching and delivering lessons (Allen et al., 2019) such as administrative work and work for accountability measures such as marking and lesson planning. Therefore, areas of work outside of the classroom that can be reduced to decrease workload need to be identified with the aim of impacting attrition.

Allowing teachers to be more productive for a healthier and committed to staying workforce

Education Support (2023) found that a large part of teacher's work was classified by them as 'empty'. This included data drops, lesson planning and marking in a certain way all considered by teachers purely there to fulfil external accountability pressures rather than being necessary to the education of their students. In fact, Education Support (2023) concluded that the accountability system in schools, due to a trickle-down effect from external forces, such as Ofsted, is unbalanced, and that they could not recommend a plan for increasing teacher retention without a reduction in accountability pressures that teachers are facing. This conclusion from 2023 is not new, new and increasing

accountability measures since 2000 have been shown to have a negative impact on teachers health and wellbeing through increased stress, feelings of vulnerability and insecurity, higher workloads, lack of trust in leadership, a culture of fear, lower job satisfaction, increased pressure and increased attrition (Arnott and Menter, 2007; Smethem, 2007; Smith and Kovacs, 2011; HSE, 2020; de Saxe et al., 2020; Skinner et al., 2019; Attick, 2017; Floyd, 2016). Perryman and Calvert (2020) concluded clearly that the target driven culture was making teachers ill and also making them want to leave the profession with a finding from Wilkins et al. (2021) claiming that due to the accountability culture teachers were now conditioned to performing surveillance on themselves further increasing their stress. The findings of this thesis can provide some evidence to the claims of Wilkins et al. (2021). For example, teachers who perceived themselves to be more productive when undergoing meetings about their performance management had significant manifestations of stress for 'behavioural manifestations'. They were reporting to be using more over the counter drugs and alcohol. For the detailed lesson planning that accompanies performance management tasks teachers were also reporting greater gastric issues. This thesis can also provide a clear direction for policy makers within education to reduce stress, by reducing teacher workload and make a positive impact on teacher attrition. Each task item within the Teacher Productivity Assessment Tool that was related to how often teachers were completing classroom observations, having marking reviews, attending performance management meetings, and having review of students' grades caused increases in their self-reported stress. These tasks were found to impacting on teachers physical and emotional wellbeing by, for example, inducing gastrointestinal symptoms and feelings of anxiety. They are also causing an increase in dysfunctional coping strategies such as using alcohol as a response to stress. Plus, these activities were not found to be intellectually stimulating to teachers providing no evidence that these activities are

contributing to or improving the practice of teachers. These findings have been able to show an empirical link between tasks that completed due to accountability measures and stress, rather than anecdotal evidence such as statements made by teachers, which in and of themselves should carry weight. Therefore, like with the conclusion from Education Support (2023) a comprehensive review and overhaul of accountability measures in schools, which are driven by external agencies such as Ofsted, needs to be conducted as a matter of urgency if the issues with teacher retention and recruitment are to be addressed. On a macro scale, the OECD and its cycle of PISA every three years, which measures the attainment of 15-year olds, has been criticised for many years for its disparity in reporting (how can 15-year olds in developing countries, often forced into child labour, be compared with 15-year olds in Finland for example) and the influence it seems to hold over policy-makers around the world which drive reforms to education that are short-sighted and impact educators negatively (Zhao, 2020; Takayama, 2015; Lewis, 2014). The findings of this research provide weight to arguments already made that reform is necessary and reporting structures dismantled and re-assembled that are fit for purpose.

If workload for performance management related tasks can be reduced, then this time previously spent on administration, data analysis, marking and planning could be redirected to an area shown in this thesis to improve teacher wellbeing by decreasing not only their sources of stress, but manifestations of stress. Within the results a clear correlation was seen between teachers that are planning and delivering more school trips and decreases in stress. Being involved in more school trips decreased sources of stress in student discipline and motivation, but also decreased physical symptoms of stress. This finding is supported in previous literature where teachers who got to spend more time with

student had lower stress levels and greater job fulfilment (Brady and Wilson, 2020). 64% of teachers who work in educational improvement areas state that not only is poor behaviour an issue, or the biggest issue in their school, but that their workload pressures are being increased by poor pupil behaviour (Education Support, 2023). If poor behaviour could be improved through more student interaction that is outside of the classroom, of which school trips could be a vehicle, then these extra pressures would be decreased, decreasing stress. Teachers who report higher stress have been found to have weaker relationships (Herman et al., 2018; von der Embse and Mankin, 2020) with their students so being involved in more extracurricular activities could be a way to remedy these issues. And this leads to the final recommendation being made from the findings of this thesis – that of ensuring that there is good communication with parents and carers and that these stakeholders are involved with the school. Speaking to and meeting with parents and carers outside of parent's evenings was found to decrease the overall stress scores of teachers when it was deemed more productive, and this was often accompanied by greater productivity in relation to following and completing tasks associated with a behaviour management policy. Decreasing workload in other areas could free up some time for teachers to be able to build relationships and rapport with parents, carers and the wider community which has been shown in literature to enhance teacher wellbeing and improve classroom management as well as the emotional and social skills of students (Virtanen et al., 2019; Jennings and Greenberg, 2009). With more teachers in areas of educational improvement being likely to leave, and more teachers who work in disadvantaged areas being subject to poor behaviour, combining extracurricular activities with more communication with parents could provide a route to improve classroom behaviours, reduce workload pressures and increase retention. This would overall increase the productivity of teachers by them being able to spend more time 'contributing to the

learning and life enrichment of their students'. In fact, nearly 60% of teachers entered the profession to have the opportunity to make a difference in a child's life (Education Support, 2023), and therefore, through more student interaction, and less distance from their students due to performance management tasks, they would be afforded the space to do this and reach a greater sense of satisfaction.

6.22 Thesis Conclusion

6.23 Revisiting reflexivity

At the start of the thesis, I explored how my own lived experiences shaped my worldview and led the research design. I positioned myself as an ex-teacher and not politically aligned with the Government in power during the research period. I was someone who had experienced all that education had to offer in terms of social mobility and stability, but who had also whilst being a teacher experienced poor wellbeing.

Throughout the interpretation of the findings, reminding myself of the position I held in relation to the participants and their data was paramount. During focus groups and interviews a notebook was kept which allowed for 'in the moment' notes to be read alongside the recordings. These sessions, where my own position in the research was recognised, allowed the identification of shared lived experiences with the participants but also to then set these aside and return to what their truth was. When patterns started emerging in data that were demonstrating a potential relationship between performance management activities and stress manifestations and sources, my own experiences allowed for deeper analysis to take place and suggestions for further research to be made. My

experience was of value here when interpreting findings. For example, completing more lesson plans for observations resulted in lower feelings of 'There is little time to prepare for my lessons/ responsibilities' – a reduction in a time management stressor. My experiences, and those of my participants in stage one, allowed for a more nuanced interpretation of this finding to provide an explanation for its existence.

The research process also changed my own political assumptions. Reflexivity allowed for new information and theories to emerge and by reflecting upon the education reforms brought about by all Governments I was informed in regard to the merits and detriments of both sides of the political spectrum. This shifted my political worldview and position as a researcher.

6.24 Conclusion

Overview of stages one, two and three

Before addressing the research questions, it is important to collate and reflect upon the discussions that occurred during each stage of the research, the findings and contributions.

Table 37.0 Overview of findings and contributions

What was the contribution?	Why is it important	How was it found	What next
Empirical Indicators of a teachers work – stage one	• 26 core tasks were identified within five categories, these being; teaching related tasks, behaviour management, wider school and extra-curricular, communication and performance management. This is the first time teachers have themselves given a description of their work in terms of their everyday work life. • Insight into how teachers operate in their everyday job role and how this can be related to the Teacher Standards (2011). • The findings were able to highlight where teachers are frequently performing actions that they feel support their practice but also where tasks they are performing do not.	Interviews and focus groups following phenomenological approach and thematic analysis.	1. A clear and well evidenced recommendation as an outcome of this research would be the necessity for a review of government, local education authority, multi-academy trust and school policy in terms of performance management practices. 2. This study should be investigated across the teaching population in England as a whole. If teachers, on a larger scale were to report the same feelings of unproductivity then the system would be seen to be failing in its ambition to manage and improve standards within education. 3. Compare the empirical indicators generated in this research using state schoolteachers with those in the private sector when the same methodology is employed
New definition for the perceived productivity of secondary teachers in England – stage one	• First time teaches have been consulted on what they perceive their productivity to represent • Support by empirical indicators • Holistic definition that encompasses the wider role of the teacher	Interviews and focus groups following phenomenological approach and thematic analysis.	1. Compare the definition generated using the same method but with private school secondary teachers in England.

Poor leadership exacerbates issues with workload – stage one	• Workload was said to be increased due to poor leadership at the school level • National leadership (e.g. Government) was also included as increasing workload due to new initiatives that were not deemed as productive	Interviews and focus groups following phenomenological approach and thematic analysis.	1. A review of the national qualification that school leaders undertake needs to be performed. It needs to include people management and organisational culture as well effective communication. 2. New national initiatives should be risk assessed with practising teachers and the definition provided by this research applied to determine if teachers feel that it will contribute or detract from their productivity.
Poor physical environment is detrimental to workplace wellbeing – stage one	• Teachers do not have access to a communal space where they can collaborate and seek support from colleagues decreasing their wellbeing and they believe impacting on their practice, reducing productivity • Teachers are in poor condition buildings e.g. lack of light, incorrect temperature, poor state of repairs and this impacts their physical and psychological wellbeing • Teachers are working underfunded departments and schools which means they often lack the most basic of equipment. This is impacting upon their ability to deliver the lessons that they want to enhance learning. This is negatively impacting on their wellbeing	Interviews and focus groups following phenomenological approach and thematic analysis.	1. The regulations that now no longer require a communal space for teachers need to be reviewed. A nationwide study should be conducted comparing the stress of teachers who do have access to a communal space, their own classrooms and a designated space away from students to those who do not. A theory for this to be conducted under would be that those who can share a communal with colleagues would have better workplace wellbeing. 2. Government budgets need to be reviewed and a systematic review of the state of England schools conducted. Working with industry and academia research should be conducted into the optimal physical conditions in which students learn, and teachers teach. This should form the basis of a redevelopment strategy for the UK Government

Development of TPAT – stage two	• New tool that assesses how often teachers are completing certain tasks and how productive those tasks make them feel. This is important as there is currently nothing in literature that gives statistical findings on which tasks teachers are completing make them feel unproductive • Performance management tasks are deemed as unproductive overall. With literature stating that accountability measures are adding to workload, poor workplace wellbeing and contributing to the teacher retention crisis, these findings provide robust evidence to support these claims adding to the bank of literature and providing deeper insight.	EFA CFA – SEM	1. TPAT should be distributed nationwide as a survey to all secondary state-maintained schools in England. This would allow for a large enough sample to be collected to allow for a split data strategy reinforcing the validity of TPAT. Upon confirmation of the validity this new tool can then be used by school leaders, trusts policy makers to regularly review teachers work and devise new policies and procedures to minimise unproductive work and maximise the learning and life enrichment of students. 2. There needs to be an urgent review of all accountability measures that secondary schools are required to report on. This supports the call by Education Support. New training needs to be designed and conducted via a pilot study (once new and improved accountability measures are in place) to upskill school leaders so that they can enhance the practice of their staff and raise standards. Through a process of pilot schemes new training should be a standard part of CPD for school leaders which is mandatory when completing their qualification / to apply for a position.
89% of teachers are stressed and certain	• The findings of this research support previously published figures regarding the current wellbeing of teachers in England.	Regression analysis	1. Schools should use the TSI to conduct an audit on the health of their teachers who have the highest proportions of SEND and PP cohorts. Literature and industry should be consulted in order to

demographics are more prone to stress – stage three	• This research has shown that teachers with higher proportions of SEND and Pupil Premium students are more likely to experience more manifestations and sources of stress. These demographics of students are more often found is economically disadvantaged communities and schools in these areas have more recruitment and retention issues. By understanding how at risk these teachers are, more targeted intervention can be put in place to mitigate their work-related stress		design a targeted intervention strategy to manage the wellbeing of these teachers and increase the retention of them in the system
Positive relationships with stakeholders such as parents can reduce workplace stress	• Feeling productive after meeting or speaking with parents and doing this more often reduced a significant number of sources and manifestations of stress. These results demonstrate that if teachers are more involved with the wider community and are respected that their workplace wellbeing will be improved but that also the life enrichment of their students is enhanced.	Regression analysis.	1. A nationwide sample of secondary schools should be recruited to take part in research which will produce case studies for each school. These case studies can be used as the basis to identify where schools are successful at engaging stakeholders, how they do but also importantly barriers that there may be to doing so. This research could produce recommendations for schools and LAs across the country, increasing engagement, reducing stress for teachers which could ultimately positively impact the retention of teachers and also increase the learning and life enrichment of students, raising attainment.

Conclusion to research questions

Each methodological choice was driven by the questions this thesis posed. Each question that this thesis sought to answer has been answered and the conclusion to each question is detailed below.

What do England based secondary teachers consider as 'productivity' in terms of their everyday job role?

Overwhelmingly teachers that took part in this research whether it be during focus groups, interviews or through completion of TPAT perceived that tasks that had direct contact with or were directly related to their student(s) had the greatest contribution to their productivity. There was a vast array of tasks, duties and responsibilities that developed from stage one, and these drove the generation of 52 empirical indicators to form the unvalidated version of TPAT. Speaking with parents and/or carers and tasks surrounding behaviour management had the highest associated feelings of productivity. Overall, teachers considered things that they do that contribute to the learning and life enrichment of their student(s) as the embodiment of their perceived productivity.

Can productivity be broken down into defined tasks and responsibilities that teachers undertake?

The answer to this was yes. From focus groups and interviews 52 items were generated that formed the empirical indicators with which the TPAT could be constructed. Productivity was represented across four initial dimensions. These being teaching-related tasks, pastoral care and communication, wider school and extra-curricular, and performance management. Following factor analysis with a nationwide sample of 118 secondary teachers in England, 16 items remained which were contained within the

dimensions of lesson planning, extra-curricular, performance management, communication, and behaviour management. Six items related to frequency and ten related to feelings of productivity.

What do secondary teachers in England consider affects their wellbeing in the workplace?

Thematic analysis of transcripts from focus groups and interviews were semi structured and participants were direct to talk about work-life balance, leadership, physical environment and relationships with colleagues. Page 136-168 shows the detailed analysis. Out of these areas the most common sources or contributors to poor wellbeing were lack of physical resources such as books and pens and not having access to a staff room or anywhere off limits to students. Teachers stated they had poor work-life balance due to their workload, again referencing that tasks designed for accountability measures were not productive to them. Within leadership, teachers commented that most communication was negative or non-productive, words such as 'aggressive' were used. And finally, teachers very much valued their relationships with colleagues but felt they were not afforded the time to build these or collaborate as much as they wanted to, and this was partly due to them not having a communal space where they could gather, linking back to wellbeing in relation to their physical environment.

Further work for wellbeing

The strength at which participants in focus groups and interviews felt that a staff room, or lack thereof, was a contributor to their wellbeing, trust in management and pedagogical advancement was apparent. The impact of recent legislation implies that schools are no longer required to provide a staffroom: this is a change that requires further investigation

and reconsideration. A nationwide study should be conducted which assesses the self-reported stress and job satisfaction of secondary teachers in England. This should be explored against their physical environment in terms of if they have a staff room, their own classroom, and if they are given time to work with colleagues, increasing their social resources at work. If research can demonstrate a quantitative link between teachers' stress and satisfaction and that of these areas of their physical environment, a case could be made to have this legislation repealed and, in its place, a new Act of Parliament passed that makes it mandatory to have a communal space for teachers away from students.

What are the reported levels of stress for secondary teachers based in England?

In this study 80.5% of teachers were experiencing work-related stress. 19.5% of participants were classified as experiencing significantly strong stress, this is in line with recent published literature. No difference was found in the total stress score of male and female teachers, but female teachers were significantly more stressed than their male counterpart in the sources of work-related stressors and had more gastrointestinal, cardiovascular, emotional and fatigue-related manifestations of stress. Senior leaders had significantly lower stress scores for discipline and motivation, professional distress and professional investment. They had also experienced less fatigue manifestations. Mathematics teachers were also significantly less stressed than all other subject areas. With nearly 50% of all secondary schools in the UK must use non-specialist (without a mathematics degree) teachers to deliver mathematics lessons, then specialist mathematics teachers could have greater job security and have a greater feeling of status (Weale, 2023). In fact, despite reducing the recruitment target by nearly 40%, the UK Government has failed to attract the number of mathematics graduates its needed for more ten years

(Weale, 2023) supporting the notion that mathematics teachers are in short supply and therefore are afforded higher status. One clear demographic who are experiencing more stress are teachers who teach a higher proportion of SEND students – they had significantly higher total stress scores as well for the subscales of time management, professional distress, professional investment and more emotional, fatigue and behavioural manifestations. Full analysis can be found on pages 239-279.

Is there a relationship between self-reported levels of stress, and the empirical indicators of productivity in the Teacher Productivity Assessment Tool?

The answer to this question was very clearly positive. Having more marking reviews significantly increased the total stress score of teachers. Having more productive conversations with parents and carers significantly decreased total stress scores. Speaking with parents and carers outside of parents evening had the most relationships with stress, seven in total, and in each of these relationships, more productive conversations led to a decrease in stress. Classroom observations and reviews of marking and student's grades were joint second with six relationships each with certain stressors, and for these indicators they increase the source or manifestation of stress in every case. A full review of the analysis and recommendations can be found on pages 280-312.

6.25 Thesis contributions to knowledge, research methods and practice

1. A definition for the productivity of teachers in England

Two aims of this thesis were to produce a new definition for the productivity of teachers in England and to create empirical indicators of this. These aims were present due to there being no source found in published literature that could provide a definitive definition

and/or examples of what teachers were doing, or expected to do, that contributed to their productivity.

The basis for the search of the new definition of productivity was that of the definition provided by Schalock (1987) who had defined teacher productivity as

> *"The contribution a teacher is able to make to student learning by applying inputs*
>
> *that are relatively variable in the short run (pedagogy, time, classroom management, etc.) to inputs that are relatively fixed in the short run (student abilities, attitudes, school climate, etc.)"* (pp. 61)

The search for a new definition also took in account the definition provided by Getange (2016) who included that teacher productivity relates to the duties they perform at a particular time to produce a particular outcome. UNESCO (2000) had provided a different view to these previous definitions and used the terms 'basic learning needs' and 'enriching lives'. Whilst these three variations were found in literature, they had such variance that what teacher productivity represented was still not clear and needed to be addressed. By a qualitative phenomenological approach, teachers recruited to take part in this study were able to articulate what productive and unproductive looked and felt like in their everyday working life. With statements that ranged from checking the behaviour points of students in their form, to producing worksheets for a lesson, to setting up their classroom in advance to prepare for optimum learning, the duties, tasks, and responsibilities teachers perceived to represent their productivity, or unproductivity, were vast. Thematic analysis of rich data provides a new definition for the productivity of teachers in England, this being **'things a teacher does that contribute to the learning and/or life enrichment of their students'**. This definition for productivity, unlike others, encompasses the multifaceted role of the teacher. It does not contain any reference to 'attainment' as learning and attainment can be two different things. It also reflects the wider, pastoral role of the teacher, and how they

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play, or would hope to play, a part in improving the richness of their students' lives in the future.

2. Empirical Indicators of productivity

Although a new definition for teacher productivity is a contribution to academic knowledge, and to the education sector, in its own right, its full value lies within further findings from this thesis that support the new definition to provide context and substance. Schalock (1993) posed the question "*Do we/they know what makes a teacher more productive?*" (pp.190). Simply providing a new definition does not answer this question. However, the full findings from this thesis have been able to answer this question posed by Schalock – this thesis has uncovered what can make teachers more productive, and importantly what does not. Nowhere in literature have specific areas of a teacher's everyday working life been assessed by teachers, with respect to how these might contribute to their productivity. The 16-item TPAT is a new tool that measures the frequency of tasks that teachers perceive contributors to their productivity and how productive doing those makes them feel. The five areas of a teacher's everyday work life that contribute, positively and/or negatively, to their perceived productivity (outside of delivering lessons) are communication with parents and/or carers, behaviour management, lesson planning, extra-curricular activities and performance management. The findings from this thesis are the first to conclude that teachers who spend more time involved with student directed activities such as planning school trips or following a behaviour management policy consider this more productive. Teachers do not identify overall that performance management tasks contribute to their productivity. In fact, these tasks are deemed by a large majority (and in most circumstances) to be non-productive to teachers – they do not contribute to the learning or life enrichment of their students. So, if

we return to the question posed by Schalock 'what makes a teacher more productive?' an answer can now be provided. Teachers should be afforded more of their working time to be directed purely on tasks, duties or responsibilities that have a direct, as perceived by them, impact upon their student(s). Areas of work that create distance or show no explicit link to their student(s) should be removed, reduced, or at least redesigned. And a particular area that needs to be subject to review as a matter of urgency is that of performance management and accountability measures.

3. The Teacher Productivity Assessment Tool

TPAT is the first tool that measures the concept of teacher productivity as perceived by teachers themselves. The 16 items contained within TPAT explore not only what teachers are doing and with what frequency, but how productive that is to them.

Applications of The Teacher Productivity Assessment Tool

This tool used in isolation provides an array of opportunities to be used in practice. For example, if teachers are reporting that workload is an issue for them within a school, or leadership are wanting to review teacher workload at their school, they could use the TPAT as an anonymous survey to determine which items matter the most to them in terms of feeling productive and compare that with what they are saying they do more frequently. TPAT can also be used to assess the strength of communications that teachers are having with parents and carers. Where communications are found to be unproductive for teachers, further investigation could be pursued to determine the underlying factors. For example, it could be that the school needs to do more regarding stakeholder engagement. More parental involvement has been shown to improve behaviour and student outcomes so this would ultimately impact on the UK Government productivity measures as well as

what teachers value. TPAT could also be used in isolation to determine if performance management activities in the school are fit for purpose. Where teacher perceive accountability measures in their setting to not contribute to the learning and/or life enrichment of their students, schools could improve these processes to make them be perceived as more valuable. This would lead to greater dialogue between colleagues and increase feelings of autonomy. With performance management activities being so prominent in increasing sources of stress and stress manifestations and documented in literature to be seen as 'empty' or 'burdensome', redesigning procedures so that teachers perceive they hold value would result in a less stressed, and therefore healthier workforce. This could also reduce attrition preserving school culture and not increasing the workload of others caused by absence.

Further work for the Teacher Productivity Assessment Tool

As explained during stage two of this thesis, construct validity was ascertained using the same sample data as was used in the exploratory factor analysis of the original 52-item TPAT. Further work should be done with a new sample set of responses, preferably matched as close as possible for demographics e.g. teaching years, subject taught and the confirmatory factor analysis performed again. If the model has construct validity confirmed following this, then the findings presented in this thesis would be valid. This validation would also mean that the tool could be published and used in further research and in practice.

4. Teacher stress is correlated with increased performance management activities

The findings from this thesis are the first to report quantitatively derived relationships between performance management tasks, duties and/or responsibilities that teachers perform and their impact on specific sources of stress and manifestations of stress. This thesis has shown that for teachers who are subject to more classroom observations, reviews of student's grades and reviews of marking, experience poorer work-life balance, greater feelings of being unable to cope and frustration and exhibit cardiovascular and respiratory somatic symptoms of stress. It has been stated in the literature that teachers are experiencing poorer wellbeing due to accountability measures, but this thesis now provides statistical evidence of this and pinpoints the activities that are leading to increased teacher stress and poorer wellbeing.

Recommendations: teacher stress and performance management

With the new findings reported in this thesis it is recommended, as it was by Education Support (2023) that an immediate review of accountability measures is undertaken by the Department for Education. With the 'trickle down' effect of Ofsted and Progress 8, more autonomy needs to be given to schools and teachers to derive their own measures of performance management that suit their teachers and are reflective of their student cohort. Whilst the result of a standardised test score, like a GCSE grade, may be seen as the way to assess teacher productivity due to is inexpensiveness to source, and simplicity to calculate against salary and directed hours, the impact that this is having on the health and wellbeing of teachers in England is clear. This thesis provides strong evidence that without new approaches to measuring the performance of teachers, the workforce will become more stressed, and this will ultimately result in poorer wellbeing, increased absence, poorer student outcomes and higher teacher attrition. Results from TPAT clearly indicate that when teachers can interact more with students and perform tasks or responsibilities

that directly relate to their student(s), their stress levels reduce and their perceived productivity increases. These are the tasks that teachers believe contribute more to the learning and life enrichment of their students. A brave step should be taken to develop a new system where student voice, parental voice, feedback from colleagues and light touch observations (with no requirement to submit lesson plans) is developed. This new system should pose one simple question to students, parents, and colleagues, 'does the teacher contribute to learning and life enrichment?'. Random sampling of students at different times of the year and for different classes would paint a whole picture that the teacher, rather than being scrutinised and criticised for leaving them feeling vulnerable and unable to cope, could use to produce an action plan to improve their practice. They could be supported with professional development opportunities, mentorship from a colleague or, as it is proven to decrease stress and frustrations with behaviour management, spend their time now gained from not having to perform the previous performance management tasks planning and/or delivering extra-curricular activities.

5. Whole sample strategy for confirmatory factor analysis

It is advised within the literature that a sample should be split when performing confirmatory factor analysis following exploratory. However, Zhou (2022) published findings that a whole-sample strategy was more effective and that a split-sample strategy was not required. If the TPAT can be validated using a separate sample, then this would support that the initial construct validity findings were correct and provide further evidence towards Zhou's conclusions. By confirming the whole sample strategy this could make this methodological choice available to other researchers who may have small sample sizes which are not possible to split. This would increase knowledge on how to perform

confirmatory factory analysis and potentially allow a wealth of new research across disciplines to be published.

6. Unvalidated 54-item TPAT

The 52-item TPAT provides future researchers with a comprehensive bank of tasks, duties and responsibilities that secondary teachers in England consider representing their productivity. Although these 52 items were reduced to 16, the initial set provide a basis for future qualitative work. For example, 'teaching-related tasks' had the most indicators before item reduction. These items could be explored further to understand how and why they are perceived to contribute to teacher productivity. 'Whole school initiatives' could be used as a basis for interviews and focus groups to ascertain what these look like and how they impact teacher productivity providing an evaluation for policymakers to review.

6.26 Closing remark

Teachers value the difference that they can make to their students, not only in terms of learning, but also regarding their wider life and future successes. This thesis has demonstrated that as tasks, duties, and responsibilities that teachers are asked to fulfil move their attention away from direct student interaction, or are not clearly related to their students, they perceive their productivity to decrease and their stress increase. Perhaps a somewhat common sensical closing sentence can be made considering the findings of this thesis; to increase retention and have a healthier workforce, teachers should be allowed the autonomy to use their time on tasks, duties and responsibilities that are performed to contribute to the learning and life enrichment of their students.

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Appendix One - Exploratory and Confirmatory Factor Analysis – step by step

Table: Total Variance Explained – Round 1 EFA

	Total Variance Explained					
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.103	17.848	17.848	4.808	9.427	9.427
2	3.523	6.909	24.757	1.592	3.122	12.549
3	3.408	6.682	31.439	1.578	3.094	15.643
4	2.532	4.964	36.403	1.068	2.093	17.736
5	2.301	4.513	40.915	5.802	11.376	29.112
6	2.075	4.068	44.983	2.965	5.813	34.925
7	1.802	3.534	48.517	2.150	4.215	39.140
8	1.767	3.466	51.983	1.746	3.424	42.565
9	1.689	3.313	55.295	1.716	3.366	45.930
10	1.613	3.163	58.459	1.173	2.301	48.231
11	1.373	2.692	61.150	1.486	2.914	51.146
12	1.311	2.570	63.720	1.074	2.106	53.252
13	1.230	2.412	66.132	1.256	2.462	55.714
14	1.226	2.404	68.535	1.058	2.074	57.788
15	1.170	2.295	70.830	.917	1.799	59.586
16	1.091	2.140	72.970	.982	1.926	61.512
17	1.012	1.983	74.953	.724	1.420	62.932

Extraction Method: Maximum Likelihood.

Table: Rotated factor matrix – EFA round 1

Rotated Factor Matrix[a]																	
	Factor																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
FLGreviewsoffeedbackIgivetomystudentslinkedtoPM FLG reviews of feedback I give to my students linked to PM	0.851																
FLGclassroomobservationslinkedtoPM FLG	0.849																

classroom observations linked to PM															
FLGattendmeetingsaboutPM FLG attend meetings about PM	0.775														
FLGreviewsofthegradesstudentsachievelinkedtoPM FLG reviews of the grades students achieve linked to PM	0.769														
FLGattendmeetingsaboutnewWSI FLG attend meetings about new WSI	0.459										0.417				
FLGspeakmeetwithparentsoutsideofparentsevening FLG speak /meet with parents outside of parents evening		0.9011													
FLGspeakmeetwithparentsandcarersatparentevenings FLG speak / meet with parents and carers at parent evenings		0.813													
FLGcompletewrittenreports FLG complete written reports		0.588													
FRQspeakmeetwithparentsoutsideofparentsevening FRQ speak /meet with parents outside of parents evening		0.395													
FRQcompletewrittenreports FRQ complete written reports															
FLGpreparetasksthatallowforgradedfeedback FLG prepare tasks that allow for graded feedback			0.658												
FLGDifferentiate FLG Differentiate			0.627												
FLGpreparetasksdesignedtoactivelyengage FLG prepare tasks designed to actively engage			0.621												
FLGprepareworksheets FLG prepare worksheets			0.515									0.464			
FLGWrittenFeedback FLG Written Feedback			0.496												
FRQpreparetasksdesignedtoactivelyengage FRQ prepare tasks designed to actively engage															
FRQSetformlessonplan FRQ Set form lesson plan			0.851												
FLGSetformlessonplan FLG Set form lesson plan			0.724												

Item													
FRQOwnmethodlessonplan FRQ Own method lesson plan			-0.700										
FLGOwnmethodlessonplan FLG Own method lesson plan			-0.389										
FLGcompletetasksassociatedwithBMpolicy FLG complete tasks associated with BM policy	0.385		0.706										
FLGfollowBMpolicy FLG follow BM policy	0.372		0.684							0.382			
FRQcompletetasksassociatedwithBMpolicy FRQ complete tasks associated with BM policy			0.645										
FRQfollowBMpolicy FRQ follow BM policy			0.496										
FLGOralFeedback FLG Oral Feedback													
FRQclassroomobservationslinkedtoPM FRQ classroom observations linked to PM				0.760									
FRQattendmeetingsaboutPM FRQ attend meetings about PM				0.709									
FRQreviewsofthegradestudentsachievelinkedtoPM FRQ reviews of the grades students achieve linked to PM				0.652									
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM FRQ reviews of feedback I give to my students linked to PM				0.598									
FLGplanandordeliveraschoolclubs FLG plan and/or deliver a school club(s)					0.916								
FRQplanandordeliveraschoolclubs FRQ plan and/or deliver a school club(s)					0.704								
FLGPhysicalactivities FLG Physical activities						0.909							
FRQPhysicalactivities FRQ Physical activities						0.741							
FRQprepareclassroomenvironmentpriortolessons FRQ prepare classroom environment prior to lessons							0.827						

FLGprepareclassroomenvironmentpriortolessons FLG prepare classroom environment prior to lessons			0.442				0.472							
FRQDifferentiate FRQ Differentiate							0.367				0.337			0.346
FRQOralFeedback FRQ Oral Feedback							0.345							
FRQplanandordeliveraschooltrips FRQ plan and/or deliver a school trip(s)								0.920						
FLGplanandordeliveraschooltrips FLG plan and/or deliver a school trip(s)								0.602						
FRQWrittenFeedback FRQ Written Feedback									0.566					
FRQpreparetasksthatallowforgradedfeedback FRQ prepare tasks that allow for graded feedback									0.507					
FRQspeakmeetwithparentsandcarersatparentevenings FRQ speak / meet with parents and carers at parent evenings									0.366					
FLGAssistinplanningSOW FLG Assist in planning SOW										0.947				
FRQAssistinplanningSOW FRQ Assist in planning SOW										0.566				
FLGimplementnewWSI FLG implement new WSI	0.363										0.659			
FRQimplementnewWSI FRQ implement new WSI											0.585	0.399		
FRQprepareworksheets FRQ prepare worksheets												0.762		
FRQperformshifts FRQ perform shift(s)													0.558	
FRQattendmeetingsaboutnewWSI FRQ attend meetings about new WSI													0.464	
FLGIattendmeetingsaboutthepastoralcare FLG I attend meetings about the pastoral care		0.506		0.349										0.624
FRQIattendmeetingsaboutthepastoralcare FRQ I attend meetings about the pastoral care				0.324									0.403	

Table: TVE – EFA round 2

Total Variance Explained							R...
Facto r	Initial Eigenvalues			Extraction Sums of Squared Loadings			Su So Lo...
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	T...
1	9.103	17.848	17.848	4.808	9.427	9.427	
2	3.523	6.909	24.757	1.592	3.122	12.549	
3	3.408	6.682	31.439	1.578	3.094	15.643	
4	2.532	4.964	36.403	1.068	2.093	17.736	
5	2.301	4.513	40.915	5.802	11.376	29.112	
6	2.075	4.068	44.983	2.965	5.813	34.925	
7	1.802	3.534	48.517	2.150	4.215	39.140	
8	1.767	3.466	51.983	1.746	3.424	42.565	
9	1.689	3.313	55.295	1.716	3.366	45.930	
10	1.613	3.163	58.459	1.173	2.301	48.231	
11	1.373	2.692	61.150	1.486	2.914	51.146	
12	1.311	2.570	63.720	1.074	2.106	53.252	
13	1.230	2.412	66.132	1.256	2.462	55.714	
14	1.226	2.404	68.535	1.058	2.074	57.788	
15	1.170	2.295	70.830	.917	1.799	59.586	
16	1.091	2.140	72.970	.982	1.926	61.512	
17	1.012	1.983	74.953	.724	1.420	62.932	
Extraction Method: Maximum Likelihood.							
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.							

Table: Pattern Matrix round 2 with cross loadings and values above 1.00

Pattern Matrix[a]																	
	Factor																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
FRQplanandordeliver aschooltrips FRQ plan and/or deliver a school trip(s)	0.934																
FLGplanandordeliver aschooltrips FLG plan	0.5																

and/or deliver a school trip(s)	29				
FLGAssistinplanningSOW FLG Assist in planning SOW	1.004				
FRQAssistinplanningSOW FRQ Assist in planning SOW	0.5555				
FLGPhysicalactivities FLG Physical activities		-0.9700			
FRQPhysicalactivities FRQ Physical activities		-0.7677			
FLGplanandordeliveraschoolclubs FLG plan and/or deliver a school club(s)			0.9255		
FRQplanandordeliveraschoolclubs FRQ plan and/or deliver a school club(s)			0.6766		
FLGspeakmeetwithparentsoutsideofparentsevening FLG speak /meet with parents outside of parents evening				0.9500	
FLGspeakmeetwithparentsandcarersatparentevenings FLG speak / meet with parents and carers at parent evenings				0.7777	
FLGcompletewrittenreports FLG complete written reports				0.4677	
FRQspeakmeetwithparentsoutsideofparentsevening FRQ speak /meet with parents outside of parents evening				0.375	
FRQcompletewrittenreports FRQ complete written reports					
FLGclassroomobservationslinkedtoPM FLG classroom observations linked to PM					0.901

FLGreviewsoffeedbackIgivetomystudentslinkedtoPM FLG reviews of feedback I give to my students linked to PM					0.876										
FLGreviewsofthegradesstudentsachievelinkedtoPM FLG reviews of the grades students achieve linked to PM					0.782										
FLGattendmeetingsaboutPM FLG attend meetings about PM					0.765										
FLGattendmeetingsaboutnewWSI FLG attend meetings about new WSI					0.350										
FRQSetformlessonplan FRQ Set form lesson plan						0.879									
FLGSetformlessonplan FLG Set form lesson plan						0.714									
FRQOwnmethodlessonplan FRQ Own method lesson plan						-0.683									
FLGOwnmethodlessonplan FLG Own method lesson plan						-0.335									
FLGIattendmeetingsaboutthepastoralcare FLG I attend meetings about the pastoral care							-0.728								
FRQIattendmeetingsaboutthepastoralcare FRQ I attend meetings about the pastoral care							-0.413								
FRQpreparetasksdesignedtoactivelyengage FRQ prepare tasks designed to actively engage															
FLGcompletetasksassociatedwithBMpolicy FLG complete tasks associated with BM policy								0.679							

FLGfollowBMpolicy FLG follow BM policy						0.657				-0.321			
FRQcompletetasksassociatedwithBMpolicy FRQ complete tasks associated with BM policy						0.649							
FRQfollowBMpolicy FRQ follow BM policy						0.422							
FLGOralFeedback FLG Oral Feedback													
FRQprepareclassroomenvironmentpriortolessons FRQ prepare classroom environment prior to lessons							0.860						
FLGprepareclassroomenvironmentpriortolessons FLG prepare classroom environment prior to lessons						0.453				-0.342			
FRQOralFeedback FRQ Oral Feedback													
FRQclassroomobservationslinkedtoPM FRQ classroom observations linked to PM								0.793					
FRQattendmeetingsaboutPM FRQ attend meetings about PM								0.721					
FRQreviewsofthegradesstudentsachievelinkedtoPM FRQ reviews of the grades students achieve linked to PM								0.660					
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM FRQ reviews of feedback I give to my students linked to PM								0.572					
FRQprepareworksheets FRQ prepare worksheets									0.785				
FLGprepareworksheets FLG prepare worksheets									0.4	-0.4			

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
					93	11				4
FLGpreparetasksthat allowforgradedfeedback FLG prepare tasks that allow for graded feedback						-0.634				
FLGpreparetasksdesignedtoactivelyengage FLG prepare tasks designed to actively engage						-0.602				
FLGDifferentiate FLG Differentiate						-0.568				
FLGWrittenFeedback FLG Written Feedback						-0.432				
FRQimplementnewWSI FRQ implement new WSI							-0.638			
FLGimplementnewWSI FLG implement new WSI							-0.595			
FRQDifferentiate FRQ Differentiate				0.324				0.333		
FRQperformshifts FRQ perform shift(s)									0.573	
FRQattendmeetingsaboutnewWSI FRQ attend meetings about new WSI									0.452	
FRQWrittenFeedback FRQ Written Feedback										0.543
FRQpreparetasksthat allowforgradedfeedback FRQ prepare tasks that allow for graded feedback										0.478
FRQspeakmeetwithparentsandcarersatparentevenings FRQ speak / meet with										0.324

parents and carers at parent evenings																		
Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization.[a]																		
a. Rotation converged in 31 iterations.																		

Table: Round 2 KMO and BToS

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.643
Bartlett's Test of Sphericity	Approx. Chi-Square	3617.389
	df	1275
	Sig.	.000

Table: TVE round 3 - 62.932%

Total Variance Explained							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	9.103	17.848	17.848	4.808	9.427	9.427	
2	3.523	6.909	24.757	1.592	3.122	12.549	
3	3.408	6.682	31.439	1.578	3.094	15.643	
4	2.532	4.964	36.403	1.068	2.093	17.736	
5	2.301	4.513	40.915	5.802	11.376	29.112	
6	2.075	4.068	44.983	2.965	5.813	34.925	
7	1.802	3.534	48.517	2.150	4.215	39.140	
8	1.767	3.466	51.983	1.746	3.424	42.565	
9	1.689	3.313	55.295	1.716	3.366	45.930	
10	1.613	3.163	58.459	1.173	2.301	48.231	
11	1.373	2.692	61.150	1.486	2.914	51.146	
12	1.311	2.570	63.720	1.074	2.106	53.252	
13	1.230	2.412	66.132	1.256	2.462	55.714	
14	1.226	2.404	68.535	1.058	2.074	57.788	
15	1.170	2.295	70.830	.917	1.799	59.586	
16	1.091	2.140	72.970	.982	1.926	61.512	
17	1.012	1.983	74.953	.724	1.420	62.932	
Extraction Method: Maximum Likelihood.							
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.							

Table: Pattern matrix round 3

Pattern Matrix[a]										
	Factor									
	1	2	3	4	5	6	7	8	9	10
FRQplanandordeliveraschooltrips	0.934									
FLGplanandordeliveraschooltrips	0.529									

		1	2	3	4	5	6	7	8	9
FLGAssistinplanningSOW		1.004								
FRQAssistinplanningSOW		0.555								
FLGPhysicalactivities			-0.970							
FRQPhysicalactivities			-0.767							
FLGplanandordeliveraschoolclubs				0.925						
FRQplanandordeliveraschoolclubs				0.676						
FLGspeakmeetwithparentsoutsideofparentsevening					0.950					
FLGspeakmeetwithparentsandcarersatparentevenings					0.777					
FLGclassroomobservationslinkedto						0.901				
FLGreviewsoffeedbackIgivetomystudentslinkedtoPM						0.876				
FLGreviewsofthegradesstudentsachievelinkedtoPM						0.782				
FLGattendmeetingsabout						0.765				
FLGattendmeetingsaboutnew										
FRQSetformlessonplan							0.879			
FLGSetformlessonplan							0.714			
FRQOwnmethodlessonplan							-0.683			
FLGIattendmeetingsaboutthepastoralcare								-0.728		
FLGcompletetasksassociatedwithpolicy									0.679	
FLGfollowBMpolicy FLG follow BM policy									0.657	
FRQcompletetasksassociatedwithBMpolicy									0.649	
FRQprepareclassroomenvironmentpriortolessons										0.8
FLGprepareclassroomenvironmentpriortolessons										
FRQclassroomobservationslinkedtoPM										
FRQattendmeetingsaboutPM										
FRQreviewsofthegradesstudentsachievelinkedtoPM										
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM										
FRQprepareworksheets										
FLGprepareworksheets										
FLGpreparetasksthatallowforgradedfeedback										

FLGpreparetasksdesignedtoactively engage										
FLGDifferentiate										
FRQimplementnewWSI										
FLGimplementnewWSI										
FRQperformshifts										
FRQWrittenFeedback										

Extraction Method: Maximum Likelihood.
 Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 31 iterations.

Table: Communalities – round 5

Communalities[a]	Initial	Extraction
FRQSetformlessonplan FRQ Set form lesson plan	.633	.891
FRQOwnmethodlessonplan FRQ Own method lesson plan	.446	.400
FRQPhysicalactivities FRQ Physical activities	.547	.195
FLGSetformlessonplan FLG Set form lesson plan	.559	.562
FLGPhysicalactivities FLG Physical activities	.581	.266
FRQplanandordeliveraschoolclubs FRQ plan and/or deliver a school club(s)	.696	.496
FRQplanandordeliveraschooltrips FRQ plan and/or deliver a school trip(s)	.624	.478
FLGplanandordeliveraschoolclubs FLG plan and/or deliver a school club(s)	.680	.521
FLGplanandordeliveraschooltrips FLG plan and/or deliver a school trip(s)	.660	.474
FLGimplementnewWSI FLG implement new WSI	.378	.308
FRQclassroomobservationslinkedtoPM FRQ classroom observations linked to PM	.467	.516
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM FRQ reviews of feedback I give to my students linked to PM	.524	.526
FRQreviewsofthegradesstudentsachievelinkedtoPM FRQ reviews of the grades students achieve linked to PM	.448	.436
FRQattendmeetingsaboutPM FRQ attend meetings about PM	.493	.539
FLGclassroomobservationslinkedtoPM FLG classroom observations linked to PM	.724	.749
FLGreviewsoffeedbackIgivetomystudentslinkedtoPM FLG reviews of feedback I give to my students linked to PM	.756	.811
FLGreviewsofthegradesstudentsachievelinkedtoPM FLG reviews of the grades students achieve linked to PM	.659	.668
FLGattendmeetingsaboutPM FLG attend meetings about PM	.682	.687

FLGspeakmeetwithparentsoutsideofparentsevening FLG speak /meet with parents outside of parents evening	.655	.769
FLGspeakmeetwithparentsandcarersatparentevenings FLG speak / meet with parents and carers at parent evenings	.669	.787
FLGfollowBMpolicy FLG follow BM policy	.719	.969
FLGcompletetasksassociatedwithBMpolicy FLG complete tasks associated with BM policy	.692	.687
Extraction Method: Maximum Likelihood.		
a. One or more communality estimates greater than 1 were encountered during iterations. The resulting solution should be interpreted with caution.		

Table: KMO and BToS round 6

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.747
Bartlett's Test of Sphericity	Approx. Chi-Square	1187.045
	df	153
	Sig.	.000

Table: GoF round 6

Goodness-of-fit Test		
Chi-Square	df	Sig.
73.920	60	.107

Table: Communalities – round 6

Communalitiesᵃ		
	Initial	Extraction

FRQSetformlessonplan	.600	.835
FRQOwnmethodlessonplan	.403	.403
FLGSetformlessonplan	.542	.594
FRQplanandordeliveraschooltrips	.503	.445
FLGplanandordeliveraschooltrips	.533	.999
FLGimplementnewWSI	.353	.304
FRQclassroomobservationslinkedtoPM	.449	.530
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM	.503	.525
FRQreviewsofthegradesstudentsachievelinkedtoPM	.422	.442
FRQattendmeetingsaboutPM	.489	.558
FLGclassroomobservationslinkedtoPM	.714	.754
FLGreviewsoffeedbackIgivetomystudentslinkedtoPM	.739	.811
FLGreviewsofthegradesstudentsachievelinkedtoPM	.654	.674
FLGattendmeetingsaboutPM	.676	.699
FLGspeakmeetwithparentsoutsideofparentsevening	.644	.740
FLGspeakmeetwithparentsandcarersatparentevenings	.657	.810
FLGfollowBMpolicy	.706	.977
FLGcompletetasksassociatedwithBMpolicy	.678	.682
Extraction Method: Maximum Likelihood.		
a. One or more communality estimates greater than 1 were encountered during iterations. The resulting solution should be interpreted with caution.		

Table: Cronbach's Alpha Item-Total Statistics test Factor 4

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted

	Item Deleted				
FRQSetformlessonplan	6.03	1.914	.114	.540	-1.710[a]
FRQOwnmethodlessonplan	4.20	6.370	-.561	.329	.807
FLGSetformlessonplan	5.96	1.652	.272	.469	-2.570[a]
a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.					

Table: Whole scale Cronbach Alpha

Case Processing Summary			
		N	%
Cases	Valid	116	98.3
	Excluded[a]	2	1.7
	Total	118	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
.808	16

Cronbach Alpha – for each factor

Factor 1

Table: Cronbach's Alpha reliability test Factor 1

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.785	.788	2

This factor had a value greater than .70 and therefore was successful.

Factor 2

Table: Cronbach's Alpha reliability test Factor 2

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.885	.889	2

This factor had a value greater than .70 and therefore was successful

Factor 3

Table: Cronbach's Alpha reliability test Factor 3

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.908	.909	4

This factor had a value greater than .70 and therefore was successful

Factor 4

Table: Cronbach's Alpha reliability test Factor 4

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
-.407	-.405	3

This factor had a value less than .70 and therefore was not successful. The item-total statistics were inspected to determine if there was a

certain factor that was affecting the results.

Factor 5

Table: Cronbach's Alpha reliability test Factor 6

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.861	.862	2

This factor had a value greater than .70 and therefore was successful

Factor 6

Table: Cronbach's Alpha reliability test Factor 3

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items

.789	.790	4

This factor had a value greater than .70 and therefore was successful

Table: EFA Harman Single Factor Test – total variance explained

	Total Variance Explained					
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.641	29.008	29.008	3.934	24.590	24.590
2	2.467	15.419	44.427			
3	1.752	10.953	55.380			
4	1.496	9.353	64.733			
5	1.293	8.082	72.815			
6	1.045	6.530	79.345			
7	.622	3.885	83.230			
8	.589	3.681	86.911			
9	.391	2.444	89.355			
10	.371	2.318	91.672			
11	.310	1.935	93.607			
12	.251	1.568	95.176			
13	.231	1.446	96.621			
14	.200	1.251	97.872			
15	.177	1.109	98.981			
16	.163	1.019	100.000			
Extraction Method: Maximum Likelihood.						

Confirmatory Factor Analysis

Model Identification test

Non-redundant parameters
$\frac{1}{2}s(s+1) = 0.5 \times 16(16+1) = 136$

Parameters to be estimated (*t*)
16* error variance +
10* factor loading +
6* latent variance = 35

136-35 = 101 = 101 degrees of freedom and the model is over-identified. The SEM can be used for ML as will provide a likelihood value which is suitable to be used in the assessment of model fit.

Table: CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	63	128.437	89	.004	1.443
Saturated model	152	.000	0		
Independence model	32	1126.007	120	.000	9.383

Table: Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.886	.846	.962	.947	.961
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table: RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.058	.033	.079	.273
Independence model	.251	.238	.265	.000

Whilst all model fit tests generally were sound, the standardised RMR value was 0.0503.

Diagram: Output of Standardised RMR

SRMR first round construction SEM
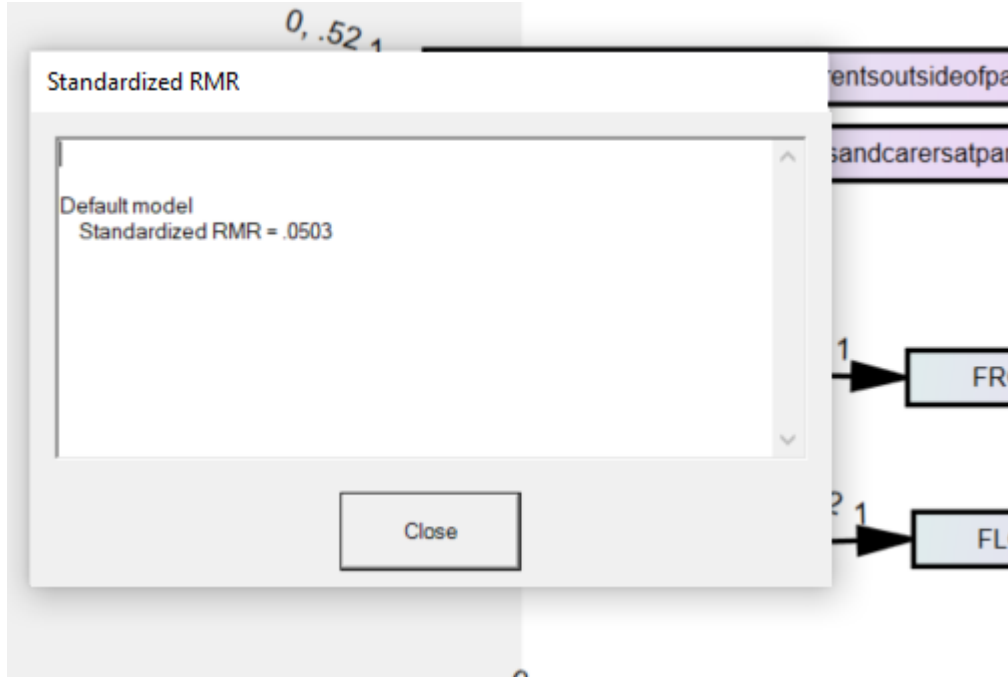
I referred to the modification indices and saw that there were several values above 4. However, due to them being linked with a variable outside that of their own exogenous variable or linking directly with an exogenous variable I was unable to draw covariances between them.

Table: Covariances: (Group number 1 - Default model)

		M.I.	Par Change
E18 <-->	BEHAVIOUR_MANAGEMENT	12.063	.238
E14 <-->	E18	8.244	.216
E13 <-->	E17	5.661	.181
E13 <-->	E15	4.243	-.147
E12 <-->	FLG_PM	5.051	.201
E12 <-->	COMMS_WITH_PARENTS	6.909	-.236

			M.I.	Par Change
E12 <-->		E16	5.585	.139
E5 <-->		FLG_PM	4.944	-.149
E3 <-->		E18	4.488	.091
E2 <-->	E18	4.231	-.149	
E2 <-->	E15	6.360	.158	

Table: Squared Multiple Correlations: (Group number 1 - Default model)

			Estimate
FLGattendmeetingsaboutPM			.659
FLGreviewsofthegradesstudentsachievelinkedtoPM			.659
FLGreviewsoffeedbackIgivetomystudentslinkedtoPM			.809
FLGclassroomobservationslinkedtoPM			.737
FRQattendmeetingsaboutPM			.464
FRQreviewsofthegradesstudentsachievelinkedtoPM			.439
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM			.520
FRQclassroomobservationslinkedtoPM			.509
FLGSetformlessonplan			.648
FRQSetformlessonplan			.710
FLGspeakmeetwithparentsandcarersatparentevenings			.865
FLGspeakmeetwithparentsoutsideofparentsevening			.663
FLGcompletetasksassociatedwithBMpolicy			.801
FLGfollowBMpolicy			.800
FLGplanandordeliveraschooltrips			.882
FRQplanandordeliveraschooltrips			.479

Round 2 CFA Model Fit

Model Fit

All of my statistical tests for model fit were within acceptable ranges.

Table: CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF

Default model	47	128.437	89	.004	1.443
Saturated model	136	.000	0		
Independence model	16	1126.007	120	.000	9.383

The *p*-value is greater than 0 and the chi square value divided by the degrees of freedom is less than 3. This is a good well-fitting model.

Table: Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.886	.846	.962	.947	.961
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

The comparative fit statistic (CFI) is larger than 0.9 which is acceptable. The Tucker-Lewis Index (TFI) is also above 0.9. This a good model fit.

Table: RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.058	.033	.079	.273
Independence model	.251	.238	.265	.000

The root mean square error of approximation (RMSEA) is 0.058 which indicates that it is a good fit.

Diagram: CFA model with SRMR
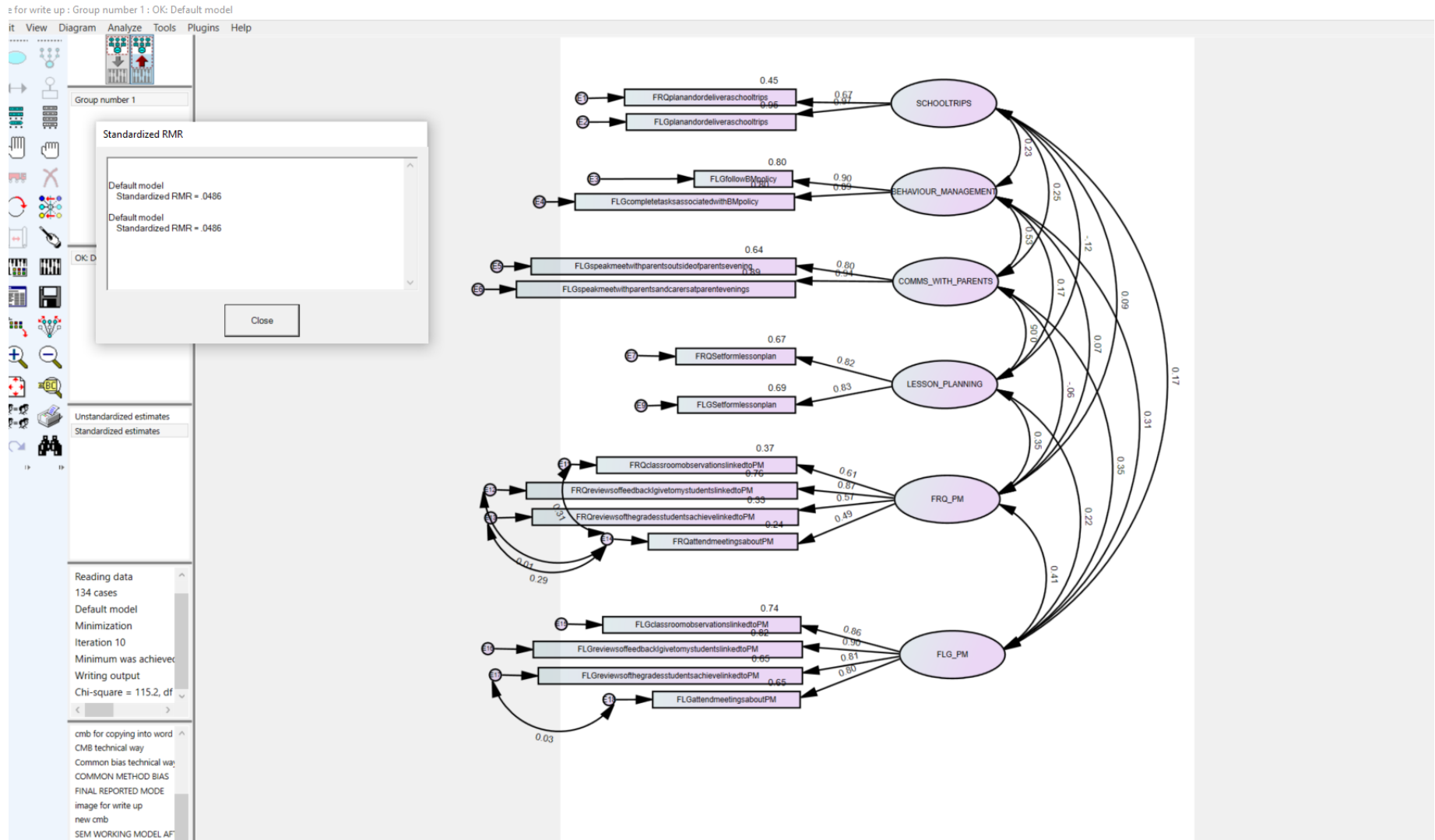
Common Latent Factor

Table: Validity Analysis

	CR	AVE	MSV	MaxR (H)	SCHOOL TRIPS	BEHAVIOUR_ MANAGEMENT	COMMS_ WITH_ PARENTS	LESSON_ PLANNING	FRQ_PM	FLG_PM	CLF
SCHOOL TRIPS	0.912	0.864	0.032	1.616	**0.930**						
BEHAVIOUR_ MANAGEMENT	0.792	0.656	0.188	0.806	0.094	**0.810**					
COMMS_WITH_PAR ENTS	0.763	0.617	0.188	0.770	0.076	0.434*	**0.785**				
LESSON_PLANNING	0.744	0.595	0.032	0.776	-0.178	0.065	-0.167	**0.771**			
FRQ_PM	0.736	0.414	0.069	0.755	-0.041	-0.124	-0.233	0.126	**0.644**		
FLG_PM	0.845	0.578	0.069	0.852	0.025	0.146	0.177	0.090	0.264†	**0.760**	
CLF	0.685	0.121	0.000	0.689	******	******	******	******	******	******	**0.348**

Common latent factor

Model Fit

I also wanted to look at the general model fit now that the latent variable had been introduced.

Table: CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	68	115.856	84	.012	1.379
Saturated model	152	.000	0		
Independence model	32	1126.007	120	.000	9.383

My *p*-value was now less significant at 0.012 compared with 0.004 and my chi-square over degrees of freedom was also lower than 1.443

previously. These are an improvement in model fit.

Table: Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.897	.853	.969	.955	.968

Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

The TLI had increased from .947 however, the CFI had decreased by 0.007. Both are still a good model fit.

Table: RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.053	.026	.076	.390
Independence model	.251	.238	.265	.000

The RMSEA had decreased from 0.058 showing an improvement.

Diagram: Latent Factor Model SRMR
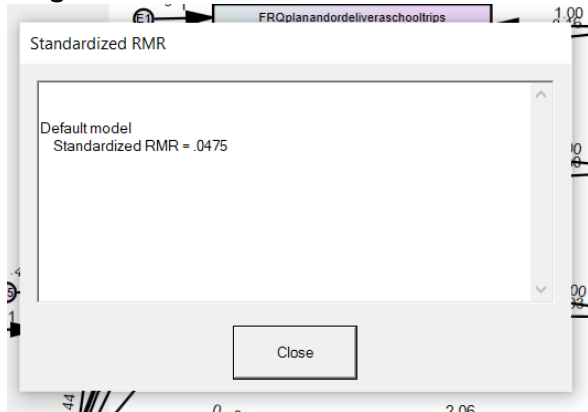
The SRMR had increased by 0.0001 but was still within the acceptable parameter for a good fit model.

Table: Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
FRQplanandordeliveraschooltrips	<---	SCHOOLTRIPS	.667	.187	3.570	***
FLGplanandordeliveraschooltrips	<---	SCHOOLTRIPS	1.000			

FLGfollowBMpolicy	<---	BEHAVIOUR_MANAGEMENT	.868	.096	9.013	***
FLGcompletetasksassociatedwithBMpolicy	<---	BEHAVIOUR_MANAGEMENT	1.000			
FLGspeakmeetwithparentsoutsideofparentsevening	<---	COMMS_WITH_PARENTS	.930	.116	8.021	***
FLGspeakmeetwithparentsandcarersatparentevenings	<---	COMMS_WITH_PARENTS	1.000			
FRQSetformlessonplan	<---	LESSON_PLANNING	1.000			
FLGSetformlessonplan	<---	LESSON_PLANNING	.900	.209	4.302	***
FRQclassroomobservationslinkedtoPM	<---	FRQ_PM	.991	.146	6.791	***
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM	<---	FRQ_PM	1.000			
FRQreviewsofthegradesstudentsachievelinkedtoPM	<---	FRQ_PM	.972	.151	6.433	***
FRQattendmeetingsaboutPM	<---	FRQ_PM	.925	.141	6.571	***
FLGclassroomobservationslinkedtoPM	<---	FLG_PM	.976	.072	13.480	***
FLGreviewsoffeedbackIgivetomystudentslinkedtoPM	<---	FLG_PM	1.000			
FLGreviewsofthegradesstudentsachievelinkedtoPM	<---	FLG_PM	.904	.074	12.189	***
FLGattendmeetingsaboutPM	<---	FLG_PM	.976	.080	12.186	***

All variables were shown to have a statistical relationship with the latent variable.

Table: Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
FRQplanandordeliveraschooltrips	<---	SCHOOLTRIPS	.692
FLGplanandordeliveraschooltrips	<---	SCHOOLTRIPS	.939
FLGfollowBMpolicy	<---	BEHAVIOUR_MANAGEMENT	.894
FLGcompletetasksassociatedwithBMpolicy	<---	BEHAVIOUR_MANAGEMENT	.895
FLGspeakmeetwithparentsoutsideofparentsevening	<---	COMMS_WITH_PARENTS	.814

FLGspeakmeetwithparentsandcarersatparentevenings	<---	COMMS_WITH_PARENTS	.930
FRQSetformlessonplan	<---	LESSON_PLANNING	.843
FLGSetformlessonplan	<---	LESSON_PLANNING	.805
FRQclassroomobservationslinkedtoPM	<---	FRQ_PM	.714
FRQreviewsoffeedbackIgivetomystudentslinkedtoPM	<---	FRQ_PM	.721
FRQreviewsofthegradesstudentsachievelinkedtoPM	<---	FRQ_PM	.663
FRQattendmeetingsaboutPM	<---	FRQ_PM	.681
FLGclassroomobservationslinkedtoPM	<---	FLG_PM	.859
FLGreviewsoffeedbackIgivetomystudentslinkedtoPM	<---	FLG_PM	.899
FLGreviewsofthegradesstudentsachievelinkedtoPM	<---	FLG_PM	.812
FLGattendmeetingsaboutPM	<---	FLG_PM	.812

Appendix Two - Stress and Gender

Table: Whole population descriptives TSI total stress score

Statistics		
TSI OVERALL SCORE		
N	Valid	118
	Missing	0
Mean		2.7110
Median		2.7000
Mode		2.60[a]
Std. Deviation		.61014
Range		2.70
a. Multiple modes exist. The smallest value is shown		

Table: Gender and each component of TSI

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TM AVG	Equal variances assumed	0.062	0.803	-0.493	83	0.623	-0.0982	0.1992	-0.4945	0.2981
	Equal variances not assumed			-0.467	19.427	0.646	-0.0982	0.2102	-0.5375	0.3411
WRS AVG	Equal variances assumed	0.068	0.795	-1.041	83	0.301	-0.2246	0.2157	-0.6537	0.2045
	Equal variances not assumed			-1.114	22.055	0.277	-0.2246	0.2015	-0.6425	0.1933
	Equal variances assumed	0.544	0.463	0.556	82	0.580	0.1686	0.3032	-0.4345	0.7717

PD AVG	Equal variances not assumed			0.557	18.623	0.584	0.1686	0.3024	-0.4653	0.8024
DM AVG	Equal variances assumed	0.000	0.989	0.286	82	0.775	0.0719	0.2510	-0.4274	0.5712
	Equal variances not assumed			0.266	17.425	0.793	0.0719	0.2703	-0.4972	0.6410
PI AVG	Equal variances assumed	0.117	0.733	-0.111	82	0.912	-0.0321	0.2906	-0.6103	0.5460
	Equal variances not assumed			-0.100	17.075	0.921	-0.0321	0.3213	-0.7097	0.6455
EM AVG	Equal variances assumed	4.524	0.036	-1.765	82	0.081	-0.5771	0.3269	-1.2275	0.0733
	Equal variances not assumed			-2.263	25.585	0.032	-0.5771	0.2550	-1.1018	-0.0525
FM AVG	Equal variances assumed	0.020	0.889	-1.442	82	0.153	-0.3829	0.2655	-0.9110	0.1452
	Equal variances not assumed			-1.303	17.063	0.210	-0.3829	0.2938	-1.0024	0.2367
CM AVG	Equal variances assumed	1.560	0.215	-0.888	82	0.377	-0.3000	0.3380	-0.9723	0.3723
	Equal variances not assumed			-1.013	21.499	0.322	-0.3000	0.2962	-0.9152	0.3152
GM AVG	Equal variances assumed	2.946	0.090	-1.644	82	0.104	-0.5429	0.3302	-1.1997	0.1140
	Equal variances not assumed			-2.173	27.025	0.039	-0.5429	0.2498	-1.0553	-0.0304
BM AVG	Equal variances assumed	0.016	0.899	-0.207	82	0.837	-0.0357	0.1729	-0.3796	0.3082
	Equal variances not assumed			-0.206	18.547	0.839	-0.0357	0.1732	-0.3988	0.3274
TSI AVG	Equal variances assumed	1.150	0.287	-1.051	83	0.296	-0.1658	0.1578	-0.4796	0.1481
	Equal variances not assumed			-1.233	24.953	0.229	-0.1658	0.1344	-0.4427	0.1112

Appendix Three - Teacher & School Demographics Tests for Normality

Gender

The Shapiro-Wilk significance factor was used due to the sample size being greater than 50 and less than 2000. Gender was normally distributed for TSI average score therefore independent t-test could be performed. Skewness and Kurtosis was in normal ranges for ALL components of the TSI test.

Figure: Q-Q plot of TSI average for gender
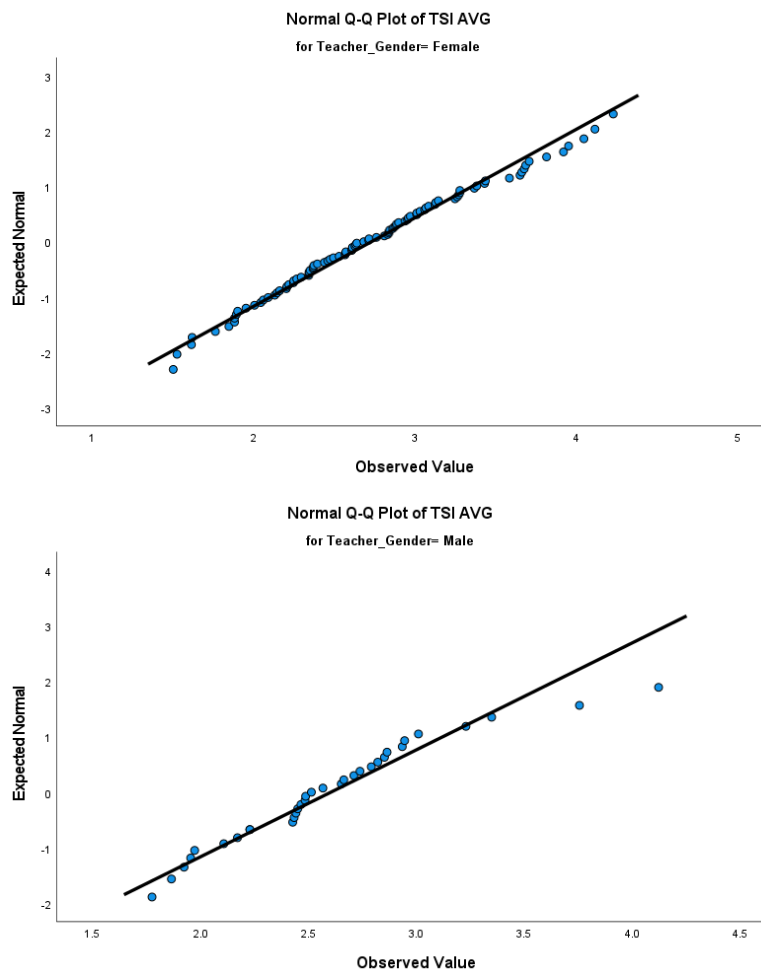
However, individual sections of data and the TSI were not normally distributed and in these instances the Mann-Whitney U-test was used.

Image: output of SPSS for tests for normality for gender

Tests of Normality

	Teacher_Gender	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
TMAVG TM AVG	1 Female	.071	94	.200*	.983	94	.260
	2 Male	.127	32	.200*	.974	32	.621
WRSAVG WRS AVG	1 Female	.096	94	.033	.948	94	.001
	2 Male	.110	32	.200*	.958	32	.239
PDAVG PD AVG	1 Female	.088	94	.070	.953	94	.002
	2 Male	.096	32	.200*	.962	32	.315
DampMAVG D&M AVG	1 Female	.087	94	.074	.979	94	.127
	2 Male	.128	32	.198	.957	32	.233
PIAVG PI AVG	1 Female	.147	94	.000	.927	94	.000
	2 Male	.152	32	.058	.923	32	.025
EMSAVG EMS AVG	1 Female	.081	94	.157	.955	94	.003
	2 Male	.108	32	.200*	.967	32	.429
FMAVG FM AVG	1 Female	.084	94	.101	.977	94	.102
	2 Male	.107	32	.200*	.953	32	.174
CVMAVG CVM AVG	1 Female	.166	94	.000	.906	94	.000
	2 Male	.143	32	.097	.883	32	.002
GMAVG GM AVG	1 Female	.185	94	.000	.846	94	.000
	2 Male	.297	32	.000	.751	32	.000
BMAVG BM AVG	1 Female	.227	94	.000	.780	94	.000
	2 Male	.229	32	.000	.759	32	.000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Ethnicity

Testing for normal distribution was not possible with any level of certainty due to the differences in responses. For example, one participant had identified themselves as 'white & Asian' and scored high on each question of the TSI. Therefore, the Kruskal-Wallis test was used instead of ANOVA.

Table: tests for normality -ethnicity

Tests of Normality[a,c,d,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z,aa,ab,ac,ad,ae,af,ag,ah,ai]							
Ethnicity Ethnic group		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
TMAVG TM AVG	2 Other	0.260	2				
	5 White British	0.081	113	0.068	0.981	113	0.108
	6 White other	0.173	9	.200*	0.949	9	0.677
WRSAVG WRS AVG	2 Other	0.260	2				
	5 White British	0.096	113	0.012	0.969	113	0.010
	6 White other	0.278	9	0.044	0.856	9	0.087
PDAVG PD AVG	2 Other	0.260	2				
	5 White British	0.087	113	0.033	0.959	113	0.002
	6 White other	0.205	9	.200*	0.902	9	0.261
DampMAVG D&M AVG	2 Other	0.260	2				
	5 White British	0.090	113	0.025	0.982	113	0.135
	6 White other	0.147	9	.200*	0.949	9	0.675
PIAVG PI AVG	2 Other	0.260	2				
	5 White British	0.136	113	0.000	0.928	113	0.000
	6 White other	0.138	9	.200*	0.985	9	0.985
EMSAVG EMS AVG	2 Other	0.260	2				

		Statistic	df	Sig.	Statistic	df	Sig.
	5 White British	0.072	113	.200*	0.965	113	0.005
	6 White other	0.223	9	.200*	0.909	9	0.308
FMAVG FM AVG	2 Other	0.260	2				
	5 White British	0.067	113	.200*	0.982	113	0.136
	6 White other	0.139	9	.200*	0.914	9	0.341
CVMAVG CVM AVG	2 Other	0.260	2				
	5 White British	0.174	113	0.000	0.901	113	0.000
	6 White other	0.223	9	.200*	0.877	9	0.146
GMAVG GM AVG	2 Other		2				
	5 White British	0.211	113	0.000	0.820	113	0.000
	6 White other	0.190	9	.200*	0.910	9	0.315
BMAVG BM AVG	2 Other		2				
	5 White British	0.230	113	0.000	0.751	113	0.000
	6 White other	0.229	9	0.191	0.893	9	0.215
TSIAVG TSI AVG	2 Other	0.260	2				
	5 White British	0.061	113	.200*	0.975	113	0.031
	6 White other	0.169	9	.200*	0.913	9	0.338
*. This is a lower bound of the true significance.							

Dependents

Testing for normal distribution again highlighted some issues but no warnings were given by SPSS this time. As some of the Shapiro-Wilk tests were significant, it was decided to run both ANOVA and then Kruskal-Willis tests where applicable to get as much from the data was possible. All components of the TSI were within normal ranges for Skewness and Kurtosis.

Once ANOVA was attempted the TSI average score had a significant Levene's test of 0.044 so Kruskal-Wallis was done instead.

Table: tests for normality – dependents

Tests of Normality							
Children		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
WRSAVG	1 No	0.088	63	.200*	0.959	63	0.037
	3 Yes - 1 child	0.112	31	.200*	0.977	31	0.733
	4 Yes 2 or more children	0.205	31	0.002	0.914	31	0.017
PDAVG	1 No	0.090	63	.200*	0.958	63	0.030
	3 Yes - 1 child	0.154	31	0.058	0.930	31	0.045
	4 Yes 2 or more children	0.128	31	.200*	0.956	31	0.226
PIAVG	1 No	0.131	63	0.009	0.945	63	0.007
	3 Yes - 1 child	0.164	31	0.034	0.923	31	0.029
	4 Yes 2 or more children	0.168	31	0.025	0.917	31	0.020
EMSAVG	1 No	0.105	63	0.082	0.936	63	0.003
	3 Yes - 1 child	0.119	31	.200*	0.964	31	0.370

		Statistic	df	Sig.	Statistic	df	Sig.
	4 Yes 2 or more children	0.098	31	.200*	0.967	31	0.450
FMAVG	1 No	0.099	63	.200*	0.981	63	0.438
	3 Yes - 1 child	0.147	31	0.087	0.920	31	0.023
	4 Yes 2 or more children	0.115	31	.200*	0.971	31	0.552
CVMAVG	1 No	0.150	63	0.001	0.900	63	0.000
	3 Yes - 1 child	0.174	31	0.018	0.909	31	0.012
	4 Yes 2 or more children	0.204	31	0.002	0.857	31	0.001
GMAVG	1 No	0.173	63	0.000	0.866	63	0.000
	3 Yes - 1 child	0.224	31	0.000	0.773	31	0.000
	4 Yes 2 or more children	0.313	31	0.000	0.747	31	0.000
BMAVG	1 No	0.217	63	0.000	0.774	63	0.000
	3 Yes - 1 child	0.263	31	0.000	0.688	31	0.000
	4 Yes 2 or more children	0.254	31	0.000	0.804	31	0.000

Education Level

Skewness and Kurtosis were in normal range for each component of the TSI. There were only 3 components of the TSI that had normal distribution between education levels. These were

- Discipline and motivation
- Work related stressors
- Time management

Upon completion of Levene's test all ANOVA scores were deemed valid.

Table: tests for normality – education level

Tests of Normality[b,d,e,f,g,h,i,j,k,l,m]		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Education_Level highest education		Statistic	df	Sig.	Statistic	df	Sig.
EMSAVG	4 PGCE	0.060	75	.200*	0.964	75	0.032
FM AVG	3 Other	0.307	4		0.729	4	0.024
CVMAVG	1 Masters Degree	0.179	29	0.018	0.843	29	0.001
	4 PGCE	0.169	75	0.000	0.911	75	0.000
GMAVG	1 Masters Degree	0.207	29	0.003	0.805	29	0.000
	4 PGCE	0.230	75	0.000	0.838	75	0.000
	5 PhD.	0.441	4		0.630	4	0.001
	6 Undergraduate degree	0.367	14	0.000	0.642	14	0.000

		Statistic	df	Sig.	Statistic	df	Sig.
BM AVG	1 Masters Degree	0.224	29	0.001	0.794	29	0.000
	4 PGCE	0.221	75	0.000	0.798	75	0.000
	6 Undergraduate degree	0.405	14	0.000	0.632	14	0.000
TSI AVG	6 Undergraduate degree	0.233	14	0.038	0.876	14	0.050
PD AVG	4 PGCE	0.109	75	0.028	0.959	75	0.016
PI AVG	3 Other	0.441	4		0.630	4	0.001
	4 PGCE	0.133	75	0.002	0.935	75	0.001
*. This is a lower bound of the true significance.							

Relationship status

Table: tests for normality – relationship status

Tests of Normality							
What is your current relationship status?		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
TSI AVG	4 Single	0.142	45	0.023	0.924	45	0.006
	7 Prefer not to say	0.385	3		0.750	3	0.000
PI AVG	4 Single	0.163	45	0.004	0.902	45	0.001
CM AVG	4 Single	0.195	45	0.000	0.899	45	0.001
GM AVG	1 Married/Civil Partnership	0.230	13	0.057	0.858	13	0.036
	3 Non-cohabiting	0.367	5	0.026	0.684	5	0.006
	4 Single	0.242	45	0.000	0.773	45	0.000
BM AVG	1 Married/Civil Partnership	0.266	13	0.012	0.713	13	0.001
	2 Cohabiting	0.219	15	0.051	0.839	15	0.012
	3 Non-cohabiting	0.473	5	0.001	0.552	5	0.000
	4 Single	0.237	45	0.000	0.742	45	0.000
	5 Divorced	0.260	2				
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

Skewness and Kurtosis were in normal range for each component of the TSI. There were only 4 components of the TSI that had normal distribution between relationship status. Upon completion of Levene's test all ANOVA scores were deemed valid.

Profession Level

Table: tests for normality – profession level

Tests of Normality[c,d,e,f,g,h,i,j,k,l,m]		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
What is your current profession level?		Statistic	df	Sig.	Statistic	df	Sig.
PI AVG	1 Non management	0.140	37	0.064	0.930	37	0.023
	4 Senior management	0.179	24	0.045	0.892	24	0.014
	5	0.310	8	0.023	0.710	8	0.003
CM AVG	1 Non management	0.188	37	0.002	0.899	37	0.003
	4 Senior management	0.196	24	0.018	0.872	24	0.006
GM AVG	1 Non management	0.192	37	0.001	0.848	37	0.000
	2 Lower management	0.231	10	0.140	0.830	10	0.033
	4 Senior management	0.242	24	0.001	0.797	24	0.000
BM AVG	1 Non management	0.245	37	0.000	0.789	37	0.000
	4 Senior management	0.296	24	0.000	0.704	24	0.000
*. This is a lower bound of the true significance.							

Skewness and Kurtosis were in normal range for each component of the TSI. There were only 4 components of the TSI that had non normal distribution between for profession level. These were

- Professional investment
- Cardiovascular manifestations
- Gastrointestinal manifestations
- Behaviour management

Upon completion of Levene's test all ANOVA scores were deemed valid.

Region

Table: tests for normality – region

Tests of Normality

Location region		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
CVM AVG	2 East of England	0.233	14	0.038	0.808	14	0.006
	7 South East	0.218	21	0.011	0.793	21	0.001
GM AVG	2 East of England	0.253	14	0.015	0.787	14	0.003
	3 London	0.379	6	0.007	0.675	6	0.003
	5 North West	0.185	31	0.009	0.823	31	0.000
	6 Prefer not to say	0.260	2				
	7 South East	0.297	21	0.000	0.672	21	0.000
	8 South West	0.251	14	0.017	0.851	14	0.023
	9 West Midlands	0.197	16	0.097	0.851	16	0.014
BM AVG	1 East Midlands	0.223	10	0.175	0.823	10	0.027
	2 East of England	0.224	14	0.054	0.780	14	0.003
	5 North West	0.209	31	0.001	0.847	31	0.000
	7 South East	0.336	21	0.000	0.615	21	0.000
	8 South West	0.214	14	0.081	0.835	14	0.014
	9 West Midlands	0.200	16	0.087	0.814	16	0.004
	10 Yorkshire & the Humber	0.349	5	0.046	0.771	5	0.046
WRS AVG	1 East Midlands	0.291	10	0.016	0.831	10	0.034
	5 North West	0.127	31	.200[*]	0.931	31	0.047
PD AVG	1 East Midlands	0.240	10	0.109	0.835	10	0.038
	5 North West	0.133	31	0.171	0.924	31	0.031
PIAVG PI AVG	5 North West	0.213	31	0.001	0.845	31	0.000
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

Skewness and Kurtosis were in normal range for each component of the TSI. There were only 5 components of the TSI that had normal distribution between education levels. These were

- Emotional Manifestations
- Discipline and motivation
- Fatigue Manifestations
- Time management
- TSI Average Score

Upon completion of Levenes test all ANOVA scores were deemed valid.

Table: tests for normality – subject taught

Tests of Normality[c,d,e,f,g,h,i,j,k,l,m]		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Subject_coded		Statistic	df	Sig.	Statistic	df	Sig.
CVM AVG	1	0.161	22	0.143	0.867	22	0.007
	2	0.287	13	0.004	0.677	13	0.000
GM AVG	1	0.251	22	0.001	0.774	22	0.000
	2	0.457	13	0.000	0.555	13	0.000
	3	0.199	35	0.001	0.845	35	0.000
	4	0.196	15	0.125	0.852	15	0.018
BM AVG	1	0.275	22	0.000	0.775	22	0.000
	2	0.358	13	0.000	0.499	13	0.000
	3	0.235	35	0.000	0.818	35	0.000
	4	0.201	15	0.106	0.852	15	0.018
TSI AVG	2	0.249	13	0.027	0.847	13	0.026
WRS AVG	4	0.202	15	0.100	0.868	15	0.031
PI AVG	1	0.196	22	0.027	0.900	22	0.030
	3	0.137	35	0.093	0.938	35	0.048
	4	0.266	15	0.005	0.781	15	0.002

There were so many options completed by participants that the answers were recorded using the government 'Progress 8' subject buckets. If more than one subject was listed the highest-ranking subject was coded for

- Bucket 1 = English Lit / Lang
- Bucket 2 = Mathematics
- Bucket 3 = Science, Languages, History, Geography & Computer Science
- Bucket 4 = All the arts, technologies, PE, Engineering, Social Sciences
- Coded 5 = special school

Skewness and Kurtosis were in normal range for each component of the TSI. There were 5 components of the TSI that had normal distribution between education levels. These were

- Emotional Manifestations
- Discipline and motivation
- Fatigue Manifestations
- Time management
- Professional Development

Upon completion of Levenes test all ANOVA scores were deemed valid.

Table: tests for normality – school type

Tests of Normality[b,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x]

School_Type type of school		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
FM AVG	1 Academy school	0.100	74	0.066	0.964	74	0.034
CVM AVG	1 Academy school	0.151	74	0.000	0.881	74	0.000
	4 LEA school	0.216	21	0.012	0.898	21	0.033
GM AVG	1 Academy school	0.235	74	0.000	0.794	74	0.000
	4 LEA school	0.247	21	0.002	0.840	21	0.003
BM AVG	1 Academy school	0.248	74	0.000	0.736	74	0.000
	3 Grammar	0.316	7	0.034	0.772	7	0.021
	4 LEA school	0.198	21	0.031	0.833	21	0.002
	8 State maintained faith school	0.263	10	0.049	0.799	10	0.014
TSI AVG	3 Grammar	0.311	7	0.040	0.799	7	0.040
WRS AVG	1 Academy school	0.145	74	0.001	0.945	74	0.003
	7 Special school	0.402	4		0.753	4	0.041
PD AVG	1 Academy school	0.103	74	0.050	0.946	74	0.003
D&M AVG	3 Grammar	0.304	7	0.050	0.805	7	0.046
PI AVG	1 Academy school	0.129	74	0.004	0.952	74	0.007
	3 Grammar	0.268	7	0.138	0.709	7	0.005
	8 State maintained faith school	0.291	10	0.016	0.811	10	0.019
EMS AVG	1 Academy school	0.086	74	.200[*]	0.947	74	0.004

Skewness and Kurtosis were in normal range for each component of the TSI. This was the variable for demographics with the largest non-normal distribution of data. There was only 1 component of the TSI that had normal distribution between education levels this was 'Time Management Average'. The Levene's Test was not significant

Appendix Four

Emma-Jane Brazier
Post Graduate Research
Centre for Decent Work and Productivity
Business School
Manchester Metropolitan University
Tel: 0161 247 2000

Consent Form – Focus Group

Title of Project: A new measurement for the productivity of secondary in England. Is there a relationship with productivity and workplace wel

Name of Researcher: Emma-Jane Brazier

Participant Identification Code for this project:

Please 'X'

1. I confirm that I have read and understood information sheet 1
    for the above project and have been provided with the relevant details if I   X
    require more information.

2. I understand that my participation is voluntary   X

3. I understand that I can withdraw my consent to participate in the study for
    6 calendar months following the focus group. If I wish to do so I can
    contact the lead researcher with my unique, anonymous participant
    identification number and all data provided will be omitted from the record.
    X

Signed Participant

_____24/7/20_____   _____████████_____
Date   Signature

Signed Researcher

17th June 2020   *EJB*
Date   Signature

Participant information sheet – focus group

A new measurement for the productivity of secondary teachers in England. Is there a relationship with productivity and workplace wellbeing?

1. Invitation to research

I, Emma-Jane Brazier, a PhD student at Manchester Metropolitan University would like to invite you to take in this study which is developing a new operational definition and measurement tool for the productivity of secondary school teachers in England. This study will also explore if there is a relationship between self-reported productivity levels and workplace wellbeing. The research project is funded by the Centre for Decent Work and Productivity.

2. Why have I been invited?

You have been chosen to take part as you are a practising teacher that delivers Key Stage 4 level qualifications (GCSE, BTEC Level 2) within a state maintained school in England.

3. Do I have to take part?

You can withdraw consent to participate in the study for 6 calendar months following the focus group. If you wish to do so you can contact the lead researcher with your unique, anonymous participant identification number and all data provided will be omitted from the record

4. What will I be asked to do?

You will be asked to take part in a focus group with up to 6 of your peers. During this focus group a series of questions will be posed to the group and opinions surrounding those gathered. There will be short workshop activities.

During the session a recording will be collected, and this will later be transcribed into a typed document. Once transcribed, the recording will be stored in a secure electronic area until the project has been reviewed by external professionals – they will only have access to the transcripts. All participant identities will be kept confidential.

Any personal data recorded on these, such as names, will be omitted from the record. All materials recorded electronically will be kept on a secure server only accessible to the research leader and to direct supervisors and scrutineers of the project.

Consent Information

You will be asked to opt in to the research by joining the Zoom meeting on the date agreed..

Where will the information I provide be displayed?

Participant Information Sheet 2

A new measurement for the productivity of secondary teachers in England. Is there a relationship with productivity and workplace wellbeing?

1. Invitation to research

I, Emma-Jane Brazier, a PhD student at Manchester Metropolitan University would like to invite you to take in this study which is developing a new operational definition and measurement tool for the productivity of secondary school teachers in England. This study will also explore if there is a relationship between self-reported productivity levels and workplace wellbeing. The research project is funded by the Centre for Decent Work and Productivity.

2. Why have I been invited?

You have been chosen to take part as you are a practising teacher that delivers Key Stage 4 level qualifications (Scottish Nationals, GCSE, BTEC) within England.

3. Do I have to take part?

You are free to withdraw participation at any time. Once data has been submitted it will be used by Emma-Jane Brazier, during their analysis.

4. What will I be asked to do?

All participants will be required to complete a multiple choice and sliding scale document that explores all aspects of productivity (e.g. strongly agree; disagree etc). Personal data such as age, ethnicity, gender, educational background will be anonymised. This will need to be completed once.

All materials recorded electronically will be kept on a secure server only accessible to the research leader and to direct supervisors and scrutineers of the project.

Consent Information

You will be asked to opt in to the research and be given a consent form.

Where will the information I provide be displayed?

There will be no information that identities participants displayed within any records or published work. Information provided such as age, ethnicity will be used but this will not be linked to individuals just to participant identification numbers. If you have heard about the study through social media then according to your privacy settings those interactions will be displayed within your own accounts.

5. Are there any risks if I participate?

There are no associated risks with this study.

6. Are there any advantages if I participate?

Consent in survey and also signposting to mental health support

Q1 ★ ···

Welcome to the research study!

I am interested in understanding what contributes to your productivity at work. I fully appreciate that teachers are facing unprecedented times at the moment in light of the global Covid-19 pandemic. This questionnaire will allow for valuable insight to be gained about the work that you do, the value you attribute to it and how your wellbeing is impacted.

For this study, you will be presented with information relevant to different tasks that make up your role as a Teacher. I will also gather some information about your current teaching role and school to help later analysis. Your responses will be kept completely **confidential**.

When answering the questions related to your feelings about productivity, **productivity can be defined as:** *'things you do that contribute to the learning and enrich the lives of your students'.*

After answering questions about productivity you will be asked a series of questions regarding your current feelings about a number of areas that can be of concern to teachers. As these questions surround feelings of well-being if at any point to wish the withdraw from that aspect of the survey please do so. There are numerous organisations that can assist with supporting your well-being these include, but are not limited, Mind UK, The Samaritans and Education Support.

The survey should take you around 10-15 minutes to complete.

Your participation in this research is voluntary. You have the right to withdraw at any point during the study.

The Principal Investigator of this study can be contacted at emma-jane.brazier@stu.mmu.ac.uk.
If you have any questions or concerns regarding this study you can contact Prof. Ben Lupton ben.lupton@mmu.ac.uk.

You can read the full participant information sheet here.

By clicking the button below, you acknowledge:
- Your participation in the study is voluntary.
- You are currently a qualified teacher in a state-maintained school in England delivering a key stage 4 course
- You are aware that you may choose to terminate your participation at any time for any reason.

○ I consent, begin the study
○ I do not consent, I do not wish to participate

Consent as displayed on a phone when completing survey

15/09/2024, 13:59   Qualtrics Survey Software

Manchester Metropolitan University

Default Question Block

Welcome to the research study!

I am interested in understanding what contributes to your productivity at work. I fully appreciate that teachers are facing unprecedented times at the moment in light of the global Covid-19 pandemic. This questionnaire will allow for valuable insight to be gained about the work that you do, the value you attribute to it and how your wellbeing is impacted.

For this study, you will be presented with information relevant to different tasks that make up your role as a Teacher. I will also gather some information about your current teaching role and school to help later analysis. Your responses will be kept completely **confidential**.

When answering the questions related to your feelings about productivity, **productivity can be defined as:** *'things you do that contribute to the learning and enrich the lives of your students'.*

END OF THESIS