How Understanding Teacher Learning as a Complex Process can Support School Improvement

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Abstract

This dissertation presents the findings of my Practitioner Enquiry into teacher learning. As a headteacher in a Scottish primary school, there is an expectation that I will bring about ongoing school improvement by supporting teachers' learning. My study explored teacher learning through the lens of the Dynamic Systems Model of Role Identity (DSMRI) (Kaplan and Garner 2017)

I contextualise the study by exploring literature and policy. I pay particular attention to Graham Donaldson's 2011 Report, *Teaching Scotland's Future*, which set out expectations for teachers and school leaders around professional learning. To explore perceptions of teacher learning in Scotland, I conducted eight semi-structured interviews of teachers and others responsible for teacher learning both in person and on-line. Following transcription, I used a hybrid approach to coding data involving both deductive and inductive methods, drawing on the work of Braun and Clarke (2006) to undertake thematic analysis. Analysis led to key findings relating to teachers' identity, collaboration, and the role of leaders in creating school cultures which support learning.

Using the DSMRI as a lens through which to interpret the data showed that it captured the complexity of teachers learning enabling me to develop a depth of understanding of the personal nature of teacher learning and how this can be supported or hindered within a school. I developed my understanding of the complexity of the processes that teachers go through as they apply learning in their own classrooms. The findings have influenced my approach to teachers' learning and school improvement in my own practice. I encourage all staff to complete a Practitioner Enquiry each year in an area of interest to them and have limited the number of whole school improvement priorities to ensure there is a balance of whole school and teacher directed learning.

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Finally, a special thanks to my husband John MacDonald who has constantly encouraged me in this journey, even when I felt like throwing in the towel, he kept me going.

Author's Declaration

"I declare that, except where explicit reference is made to the contribution of others, this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution."

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Signature:

Chapter 1- Study context and overview

1.1 Introduction

This dissertation explores my Professional Enquiry into teacher learning. As a primary headteacher in Scotland, I am responsible for ensuring teachers engage in professional learning which brings about school improvement. I have been a teacher since 1988 and an educational leader for twenty-eight years, developing a wealth of experience in a range of teaching and leadership roles across different local authorities in Scotland. I have held different leadership roles in five local authorities in Scotland including two years as a numeracy tutor supporting teacher learning. I was headteacher in two different schools in one authority over a nine-year period, which was followed by a promotion as an Education Manager at local authority level for three years. I then returned to school as a headteacher in August 2017.

Throughout this time there have been many policy changes across the education system in Scotland, but one constant has been the drive for continuous improvement. School leaders are expected to plan for, deliver, and report on attainment. The education system in Scotland demands continual, demonstrable improvement in measurable outcomes for children (Scottish Government, 2016b). In addition, I am expected to uphold the national *Standard for Headship*: this means I must act to continually improve my school and support the professional development of teaching staff (General Teaching Council for Scotland (GTCS), 2021a; Scottish Government, 2017a). This dissertation is located within these expectations as I seek to develop my understanding of teachers' learning in the hope that in doing so I am better able to support the learning of teachers in my school (and beyond) and bring about improvement in outcomes for children.

1.2 My professional context: policy and practice

Having over twenty years of leadership experience in Scotland, I am very aware of the changing policy contexts that have influenced both curriculum and conditions of service for teachers during that time. In this section, I will outline some of the

major policy changes which have had a significant impact upon my lived experience as a headteacher in Scotland.

When I started as a teacher in 1991, Scotland's first curriculum guidelines (known as the '5-14 guidelines') were introduced along with the first national tests for children in primary schools. The early 21st century then saw a period of significant policy activity in Scotland. Following a period of industrial unrest, the McCrone report of 2001 established revised conditions of service for teachers. For the first time all teachers, regardless of sector, were to have dedicated time out of class for additional duties. There then followed a 'National Debate' on education (Munn et al., 2004), after which the new curriculum - *Curriculum for Excellence* (CfE) - was developed and introduced in 2010. CfE extends curriculum guidance to ages 3-18. In the same year, the Donaldson review of teacher education in Scotland was undertaken. This led to the report *Teaching Scotland's Future* (2011) which recommended significant changes to the on-going nature of professional learning and development (Adams & Mann, 2021; Forde et al., 2016; Menter & Hulme, 2011; Torrance & Humes, 2015). These changes will be discussed more fully in Chapter 2, but a key aspect of the report was that it sought to reprofessionalise teaching through a focus on teacher professional learning and development. To ensure compliance with these policies, different mechanisms have been added to the educational landscape including revised Standards for teachers at every stage in their career (General Teaching Council for Scotland (GTCS), 2021d, 2021b, 2021a, 2021c, 2021e), school inspections, and enhanced comparative performance mechanisms for schools including the primary stages (Scottish Government, 2019, 2022).

Looking first at the Standards, the professional competence of teachers in Scotland has been overseen since 1965 by the General Teaching Council (Scotland) (GTCS). The GTCS have a significant role in the profession: every teacher or person studying to become a teacher in Scotland must be registered with them. There are Professional Standards that must be adhered to in order to ensure that teachers, and those training to be teachers, carry out their duties appropriately. The GTCS states that the Professional Standards:

> are integral to, and demonstrated through, teachers' professional relationships, thinking and actions in their professional practice. Commitment to reflecting on the connections between values and actions and career-long professional learning is a critical part of developing teacher professionalism (GTCS, 2021).

There are now five Standards for teachers - the Standards for: Provisional Registration; Full Registration; Career-Long Professional Learning; Middle Leadership; and Headship (General Teaching Council for Scotland (GTCS), 2021d, 2021b, 2021a, 2021c, 2021e).

The second mechanism relates to inspection processes. All schools in Scotland are part of a routine inspection programme currently under the direction of Education Scotland (Education Scotland, 2020). Although there have been changes to the process of inspection and the gradings used, the purpose is still to 'support improvement and provide assurance on quality and improvement in Scottish education to promote the highest standards of learning, leading to better outcomes for all learners' (Education Scotland, 2022, np). Having been through various iterations, the inspection process is now based on a framework with a six-point grading system. The framework, 'How Good is Our School?' (Education Scotland, 2015) is now in its fourth edition and is used by schools for their self-evaluation. The framework is also used by inspectors to verify or challenge an education establishment's self-assessment.

The third mechanism for ensuring compliance with policy is the measuring of attainment via national examination results. Young people aged 16-18 complete national examinations in curriculum subjects. Grades in these subjects are a key influencing factor in the young person's post-school pathway. Secondary schools, and local authorities are ranked according to the attainment of young people in these formal examinations. Although the examinations have changed over the years, their significance in relation to the judgements made about schools and local authorities continues (Stewart & Stell, 2023). Although National Tests for

primary aged children were discontinued in 2003, new mechanisms were introduced in 2016-2017. Primary school teachers were expected to make professional judgements on whether children at particular stages were achieving to the expected curriculum levels[1]. This change was closely followed in 2017-2018 by new national assessments (Scottish National Standardised Assessments) implemented as part of the National Improvement Framework (Scottish Government, 2016b). These assessments provide information on learner progress in core curricular areas in relation to the CfE levels as follows: Early (Primary 1) reading and numeracy; First level (Primary 4), reading, writing and numeracy; Second level, (Primary 7) reading, writing and numeracy; Third level (Secondary 3) reading, writing and numeracy.

Policy implementation is therefore driven by these mechanisms and the person responsible for ensuring their strategic implementation in schools is the headteacher. Headteachers are responsible for developing a professional culture which 'promotes and sustains high-quality curriculum practices, including pedagogy and assessment' (GTCS, Standard for Headship, p.10). In addition, they are expected to 'utilise a wide range of evidence to review and inform an improvement cycle which impacts on the development of the learning environment' (Standard for Headship, p.14). Headteachers are expected to evidence ongoing improvement and must also ensure that their school's performance is publicly reported. The way these requirements are most commonly delivered is through the School Improvement Plan and Standards and Quality Report. The completion of these documents is part of the statutory duties placed on headteachers (Scottish Government, 2017b). Policy makers expect headteachers to lead the teachers in their schools to deliver improvements to pupil experiences and school performance. These expectations are contained within the GTCS Standards for Headship, as is the expectation to 'support colleagues and the learning community to enhance practice'p.7 (General Teaching Council for Scotland (GTCS), 2021a). The place of teacher learning is therefore a particularly relevant area for study for me as a headteacher in Scotland.

[1] Curriculum for Excellence sets out expected levels as follows: Early level by the end of Primary 1; First level by the end of Primary 4; Second level by the end of Primary 7 and Third level by the end of Secondary 3

In addition to curriculum change and an emphasis on improving performance, there have been other changes to the context of Scottish Education which have had an impact on my practice as a school leader and on my interest in teacher learning. As explained above, I have held a senior leadership position in five different local authorities: each local authority had its own unique identity. My current local authority is one of Scotland's top-performing, with many children benefitting from living in financially affluent families. Although my current school is balanced across the social spectrum, most of my teaching and leadership career has been in schools where children live in areas of social deprivation. I therefore have insight into the ways in which headteachers and teachers prioritise different aspects of their role depending on the social setting of the school.

Over the course of my career, there has been an increased expectation from government and local authorities that headteachers and teachers should take a more holistic view of the child. Multi-agency working, where health, social services and, at times police, all work together to support children and their families, is now more common than it once was. In addition, it is widely recognised that living in poverty can have a negative impact on pupil attainment and achievement (Mowat, 2018). This direct link between poverty and attainment (and the acknowledgement that families who require additional support from a range of other services has an impact on a child's schooling) has added to the responsibilities of the headteacher. Schools are expected to work with children, their families and other services ensuring that, in doing so, the education system plays its part in having a positive impact on children's life chances.

Societal views on disability have also changed during my career, as has the view of disability in education. More children with a range of physical, emotional, communication and social needs are no longer routinely placed in 'Special' schools. With the introduction of the Additional Support for Learning Act (Scottish Government, 2017a), the presumption is that children will be educated in their local mainstream school rather than in specialist provision unless their needs are significant and not able to be met in a mainstream school. There is now a clear

definition of Additional Support Needs (ASN) with the expectation that schools will meet the needs of all learners including those with long or short term ASN. Headteachers are responsible for ensuring that teachers meet the learning needs of all children in their care (Barrett et al., 2015; Moscardini, in Bryce et al., 2018). As a headteacher, I must ensure that teachers in my school are given opportunities for professional learning on a wide range of ASN to ensure that they are equipped with relevant pedagogical approaches to meet the various learning needs of children. Teachers must take cognisance of children in their classes who have a range of ASN and adapt their teaching to better meet their needs.

Another area which has seen significant change in both society and education has been the exponential increase in the use of digital technologies. Teachers and pupils routinely use digital technologies as part of the learning and teaching process. Teachers therefore need to learn new ways of working, adapting to and including digital technologies as part of their practice. The shift towards increased digitisation of society has also affected employment; a range of different skills are expected in an increasingly competitive global employment market. In addition, having a university education is now much more common in the UK than when I started my teaching career (Murphy, 2011), and the link between school and work is now made very explicit (Howieson et al., 2017). This pressure to prepare young people for higher education and/or produce workers of the future in an age of exponential change also has an impact on the context of education and teachers' work in Scotland. To equip children for their future as employees, schools are now expected to focus on transferrable skills (Skills Development Scotland, 2022). This requires teachers to learn new skills and adapt their pedagogical approaches to meet the needs of learners and societal expectations. Supporting teacher learning is therefore a key priority for me as a headteacher.

There is a final aspect of context which has been significant for my study. My research started in August 2019. The research phase included interviews with participants and was due to be completed by June 2020. However, in March 2020 a new virus, known as Covid-19, began to infect humans causing significant harm, up to and including death. To prevent the spread of the virus, human to human

contact was severely restricted worldwide. Schools were closed and a seismic shift took place in society and in education (Lewin, 2020; Scottish Government, 2021; Wong, 2020). This contextual change had a significant impact on my research as I had to lead the school through a period of significant uncertainty where teachers, children and wider society were grappling with new ways of living and learning. I will now explain the specific policy and practice context for my research study, which will include discussion of how I adapted my study during the pandemic.

1.3 The context for my research

Policy and professional contexts have had a significant influence on my research study. One policy in particular has had an important impact on teacher learning in Scotland: *Teaching Scotland's Future*, more widely known as the *Donaldson Report* (Donaldson 2011). The Donaldson Report made 50 recommendations, beginning with changes to Initial Teacher Education (ITE) before moving on to career-long learning for qualified teachers and teachers in promoted posts (up to and including headteachers). Most recommendations for qualified teachers (Recommendations 33,34,36,37 & 44) suggested changes to continuing professional development (CPD). CPD was the term used to describe the ways in which teachers continue to learn and develop throughout their career to ensure that their professional knowledge and skills are relevant to changing professional contexts. Recommendation 33 of the Donaldson Report (2011, p.96) suggested that a range of different approaches to teacher learning be adopted. It was here that the move away from one-off CPD events was suggested in favour of more localised collegial activities. Recommendation 34 placed increased emphasis on teachers' learning having a direct impact on outcomes for children (Donaldson, 2011, p.96). Despite Donaldson's recommendations being widely accepted, policy implementation is not always straightforward (Harris et al., 2013). I was interested to discover, through my research, if the various recommendations from Donaldson were evident in the consciousness of teachers and others who had responsibility for supporting teachers' learning.

From literature, I became aware of a shift in how teacher learning was discussed: from CPD to CLPL (Career-long Professional Learning) with the notion that teachers

were continually learning rather than only undertaking specific professional development (Watson & Michael, 2016). Although this semantic shift from education to learning is not limited to teacher learning (Field, 2001), I chose to adopt the broader concept of teacher learning rather than teacher development for my study as it appeared in the literature to reflect the notion that teachers' learning was something which happened continually on both a formal and informal basis (Eraut, 2000; Kyndt et al., 2016).

As new approaches to support teacher learning began to emerge, the quango responsible for providing national guidance, Education Scotland, produced a model for teachers' learning (see Figure 1). This model attempted to conceptualize the integration of theory and practice as part of teachers' learning.

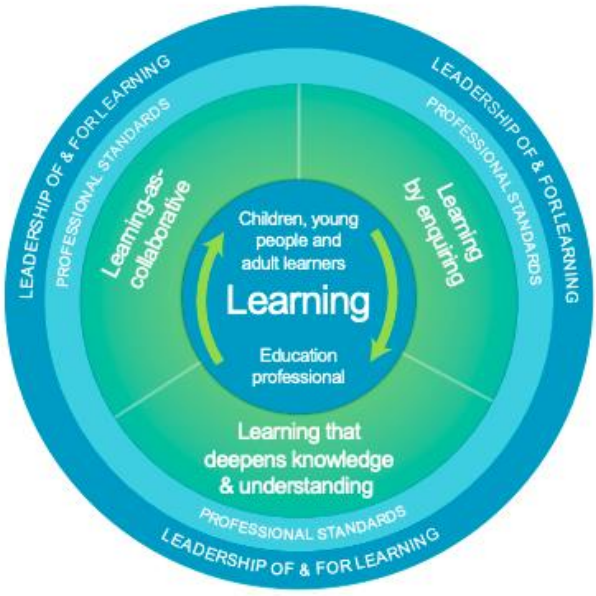


Figure 1: National Model of Professional Learning (Education Scotland, 2019)

The model seeks to link leadership with learning and embed teachers' learning within the GTCS Professional Standards.

When exploring the literature, I noted that several models of teacher professional learning were based on Human Capital Theory (Hill, 2005; Olssen, 2014) with a direct link being made from investment in teachers' learning to improvement in

outcomes for children and young people (Clarke & Hollingsworth, 2002). Hargreaves and Fullan (2012) created an expanded form of *professional capital* which encompassed the ability of a teacher to utilise their tacit learning and build on this to 'teach like a pro' (p.76). This model seemed to me to be a formulaic one. Rather than being straightforward or formulaic, my experience suggested that teacher learning was a complex process. Several different approaches to teacher learning have come to the fore in recent years that seemed to recognise greater complexity in teacher learning. These include Learning Rounds, Practitioner Enquiry and Lesson Study (Hart et al., 2011; Philpott & Oates, 2017; Wall & Hall, 2017). As both Practitioner Enquiry and Lesson Study appeared to be prominent within the local authority in which I work, I originally situated my Practitioner Enquiry in Lesson Study.

I was aware that Lesson Study was an approach to teacher learning which sought to engage teachers in collaborating with one another to improve their pedagogy (most commonly in mathematics) (Hart et al., 2011). In 2019, part of my school's improvement plan, was developing teaching and learning in mathematics and I thought Lesson Study would support us with this improvement priority.

Lesson Study involves teachers working together to plan, implement, evaluate and then re-plan a lesson, taking on board learning from each phase of the process. Teachers identify an area of common interest in teaching and plan the lesson together. One of the teachers teaches the lesson with the other two as observers. Following this they meet up again to evaluate the lesson and plan it again with one of the other teachers implementing the learning from the previous lesson, this cycle is completed again until all teachers have had the opportunity to teach and engage in critical evaluation of one another.

This approach appeared to align with the Education Scotland model of professional learning above and I was keen to evaluate whether it would be an appropriate model for teachers in my school. In discussion with two headteacher colleagues, one in my own local authority and one in another, I discovered that they too were interested in trialling Lesson Study in their schools as a teacher learning

experience which would improve mathematics. Working together we identified staff who were keen to engage in Lesson Study and as leaders we committed to providing the resources and time necessary to supporting the implementation of this approach to professional learning.

I sought permissions from relevant senior managers within both local authorities as their employees would be supporting me in my study. We successfully completed a round of Lesson Study for the three teachers in the three different schools and I had begun to gather data when, in March 2020, the country was hit by the global pandemic which placed unprecedented restrictions on social interaction including on teachers meeting together (Scottish Government, 2021), Lesson Study as a form of teacher learning could not continue and I had to reorient my research.

Through an iterative process of interview, reading, and reflection, my initial analysis of the Lesson Study data created emergent themes relating to the person of the teacher and the influence of this on their professional learning (Hargreaves & Fullan, 2012; Vermunt & Endedijk, 2011). Rather than just looking at the merits of one form of teacher learning, Lesson Study, I began to consider the factors which may support or detract from teacher learning and cause new practices developed during learning to be either embedded or short-lived. I therefore returned to reading on professional learning models to see which might most effectively represent the complexities of professional learning, and which I could research during pandemic restrictions. Having explored complex systems models in other fields (Parent et al.,2007; Smith & Thelen, 1993; Song et al., 2016; Van Geert, 1998) I began to consider their application to teacher learning. The most comprehensive model I found was Kaplan and Garner's (2017) Dynamic Systems Model of Role Identity (DSMRI). The DSMRI had previously been applied to teacher learning in the United States (Garner & Kaplan, 2019) and I was interested to see if it could be applied usefully to teachers' learning in Scotland, particularly in my school.

Following the decision to refocus my study, I evolved my original research questions from a focus on Lesson Study as a form of teacher learning to the final question:

> *How, if at all, might a psycho-dynamic model support understanding of teacher learning and what are the implications for practitioners, managers and others who have an interest in ensuring career long professional learning?'*

I then created sub-questions as follows:

1. *What are some of the key features of the post-Donaldson context of teacher professional learning, and who are the policy actors that shape teacher learning?*
2. *What are the key features of the dynamic-systems model, and could it potentially be used as an appropriate model to support understanding of teacher learning?*
3. *What might the implications of this understanding be for practitioners, managers and others who have an interest in ensuring career long professional learning?*

As a headteacher, I am very aware of the pressure to continually improve measurable outcomes for children and the pressures teachers are under to meet the needs of children and the changing contexts around them. I hoped that by understanding teacher learning more fully I might be better equipped to design my School Improvement Plan in a way which would support meaningful and relevant teacher learning. I was also keen to understand which aspects of Donaldson (2011) were becoming a reality for teachers and the extent to which teachers embrace the need to constantly improve their practice and bring about change. Having been a headteacher and senior officer of the council for many years I am aware that there are many others beyond my school who have an interest in, and responsibility for supporting teacher learning. In addition to teachers from my school I expanded my research to include others at different levels within the education system to develop an understanding of their perspectives on teacher

learning and consider whether applying the DSMRI to teacher learning could be helpful to others beyond my school.

Like any model, Kaplan and Garner's DSMRI is not without its limitations. By its very nature the DSMRI is complex because it seeks to illustrate and develop an understanding of the interconnected nature of different elements of an identified system. The DSMRI has ten elements and each of these have associated labels which have been defined by their authors (Kaplan and Garner 2017). However, these authors are both academics and their paper was written with an academic audience in mind. In my application I wanted to know if the model made sense to my participants who were practicing teachers or people of influence within teacher learning, not academics. To make the DSMRI accessible to my participants I developed an annotated version (see Appendix 1) which I used with my participants. In doing this I reframed the DSMRI using my own professional knowledge and experience, adapting it for my Scottish participants. This potentially introduced a limitation in that the model could have lost some of its integrity. I therefore sought advice from Joanna Garner and Avi Kaplan and they sent back their annotated version (Appendix 2). When comparing the two it was clear there were more commonalities than differences, with the major difference being that the original model considers 'domain' as a taught subject rather than a primary school stage (as I had adapted it). I was comfortable that my definition better suited my study given the more integrated nature of the curriculum in Scottish primary schools.

The timing of my study was also particularly relevant for adopting the DSMRI as a potential model for teacher professional learning. During the pandemic, I was aware that teachers' learning was exponential, and yet it wasn't carefully planned for or measured. The learning happened, driven by word of mouth, sharing of expertise, and through trial and error. It seemed to me, working with staff in my school, that the social context had a significant influence on this learning. This again made the DSMRI seem particularly relevant as other models I explored did not reflect this aspect of teachers' learning. The DSMRI allowed me to reflect upon

and broaden the number of factors I considered when thinking about teacher learning and apply this to my reflections on the effectiveness of different forms of teacher learning.

In addition to the social context I, like a number of others (Korkut & Özmen, 2023; Pilcher, 2023; Pilny, et al., 2023; Wang, et al., 2021) was drawn to the DSMRI's emphasis on teacher identity. Wolff et al (2014) describe a growing body of research which seeks to address the theory/practice divide by considering praxis through the lens of identity. The DSMRI builds on this research and has been successfully applied to understand the development of practice in several different areas of teacher identity: teachers during their first few years of teaching (Wang et al 2021); teachers who shift their focus from English to drama (Korkut & Özmen, 2023); and preservice teachers (Pilcher, 2023). The focus on the development of identity and the various factors which influence role identity was an area I wanted to explore further in my research.

1.4 Dissertation overview

This final section of Chapter 1 summaries how I have organised my dissertation: the place of literature in the field; how I gathered and analysed data; the conclusions I arrived at and possible avenues for future study in this field.

Chapters 2-4 explore the policy and literature surrounding my dissertation topic. Chapter 2 focuses on the policy context for my study. Any study takes place within its own unique context therefore it is important to locate the study in the policy of the time and place it was conducted. Particular policies have influenced my practice as a headteacher, in turn influencing my practitioner research. Chapter 2 discusses these policies, commenting upon their significance for the context of my dissertation. Chapter 3 explores what is understood by teacher learning, together with the evolving and increasingly complex thinking about teacher learning as it is presented in literature. As a headteacher I have been committed to my own learning and in this chapter, I describe my learning journey across my career and the literature which influenced my thinking and practice on this journey. In chapter 4 I examine more fully the Dynamic Systems Model of Role Identity (Kaplan

& Garner, 2017) considering each of the elements of the model and its potential application within teacher learning.

Chapter 5 sets out the research methodologies and paradigms which bounded my dissertation. As I was conducting research with people, some of whom were teachers in the school where I am the headteacher, I ensured I behaved ethically throughout the research process. Within this chapter I also outline how I adapted data gathering to accommodate the various restrictions in place due to the global pandemic.

In chapter 6, I describe the process of data analysis and how I analysed the data in relation to the internal, external, and core elements of the Dynamic Systems Model of Role Identity (DSMRI). I also consider participants responses to seeing the DSMRI for the first time. Finally, I discuss other factors such as the role of policy actors and the significance of the Donaldson Report (2011) on teachers' learning.

Chapter 7 weaves my reading and data analysis together and summarises my findings. In the final chapter (8), I explore some of my conclusions and the ways in which my study has influenced my practice as a headteacher in Scotland. I also reflect upon the ways in which it might support other practitioners in their professional thinking and practice and suggest future areas of study.

Chapter 2: Policy contexts for professional learning

2.1 Introduction

In this and the following two chapters I give an account of the exploration of policy and literature which has supported, guided, and challenged my thinking during this enquiry. In Chapter 2 I consider relevant policy, returning to some of the policy texts mentioned in Chapter 1 to discuss these more fully. In chapter 3 I discuss literature on teacher learning and my leadership journey; and in chapter 4 I explore the model which I chose to underpin the study.

Before looking at policy, I explain the strategy and approach I used to find and read appropriate policy and research literature and the adjustments I had to make due to restrictions and opportunities that arose as new ways of working were developed during the global pandemic.

2.1 Approach to policy and research literature

There were three main elements to my approach to literature. Firstly, I searched for and read education policies and considered the policy actors who have an impact in the education system. I used the Education Scotland, Scottish Government, and Organisation for Economic Cooperation and Development (OECD) websites, to search for relevant education policy focused on teachers and teacher development. Reading the policies, I was able to highlight key policy shifts in Scotland over time, linking national policies to wider global policy. By keeping a specific focus, I am aware that there will be policies I have chosen not to include. For example, I did not delve deeply into wider education policies such as inclusion or curriculum that can have an impact on teacher learning. Keeping a focus to teacher learning and associated policy ensured that I focused on what was most relevant to my dissertation.

I then searched for forms and models of teacher learning. The information I gained from the results of this search informs Chapters 3 and 4. My focus for teacher learning was initially Lesson Study (Hart et al., 2011). Using the university library

search engine, I identified literature relating to key elements of Lesson Study such as collaboration, focus and context. It was clear from my reading, however, that here were many different aspects to teacher learning, so I broadened my search to include other forms of teacher learning such as Practitioner Enquiry and Teacher Learning Communities. I then looked more widely into teacher learning in general. I altered my search process then becoming more responsive to the data. As I began to interpret data from the first interview in February 2020, I identified elements of teacher identity, context, and conditions for teacher learning. From the data, and from other reading, the culture and quality of learning experiences began to emerge as significant factors impacting teacher learning. I widened my search to include leadership of teacher learning as an area of interest. In addition, as I read policy and research literature, they illustrated the complexity of teacher learning. I therefore began to look at complexity theory, eco and dynamic system models as fields of study which could potentially support understanding of teacher learning.

Having outlined my approach to searching for policy and literature, and explained the choices I made, I will now move on to the focus for this chapter: the policy context for my dissertation study.

2.2 The Scottish policy context

Teaching has been an established profession in Scotland for over 300 years with a proud history of teacher development (Kennedy, in Bryce et al., 2018). Teacher learning in Scotland does not take place in a vacuum - on the contrary, it exists in a veritable maze of policies. The Organization for Economic Co-operation and Development (OECD, 2021) lists the following as being significant policies within Scottish education recent years:

- relating to curriculum and learning, *Curriculum for Excellence* (2010), *Getting it right for every child* (GIRFEC) (2006), *Realising the Ambition*: *Being Me* (2020);
- relating to improvement and performance, the Scottish Attainment Challenge (2016), the *National Improvement Framework* (2016), and the Regional Improvement Collaboratives (2018));

- relating to employability, *Developing the Young Workforce* (DYW): *Scotland's Youth Employment Strategy* (2014);
- relating to teacher education and professional learning, *Teaching Scotland's Future* (2011).

Not only do these policies require changes in pedagogical practice, but some, such as Developing the Young Workforce, also challenge personal beliefs around the purpose of education, whilst others such as GIRFEC challenge views on inclusion and the role of the teacher.

While these policies are all significant for teachers because they influence the context in which they work and learn, I will focus on the policies and policy actors which have shaped the most recent contexts for teacher professional learning in Scotland. Two of the most significant, due to their impact on the conditions of service for teachers and the expectations on the profession, are: *A Teaching Profession for the 21st Century* (McCrone, 2001) and *Teaching Scotland's Future* (Donaldson, 2011). Given their significance to teacher learning I will consider each document in more depth below.

2.2.1 A Teaching Profession for the 21st Century

Led by Gavin McCrone the committee that produced *A Teaching Profession for the 21st Century* was commissioned by the then Minister for Children and Education, Sam Galbraith (MSP) to enquire into teachers' conditions of service. This followed a breakdown in industrial relations between teacher unions and local authority employers. Extensive consultation was undertaken, and comparisons made with salaries and conditions of service in other similar professions (McPhee & Patrick, 2009). The outcome of the report was an agreement which set out significant changes to structures in schools and of teachers' conditions of service (McCrone, 2001). New leadership structures were proposed (section 4), all teachers were given additional dedicated non-teaching time within the school day (section 6) and, significantly for the focus of this dissertation, there was also a contractual requirement to complete 35 additional hours professional learning (section 3). These changes delivered a parity of experience for primary and secondary

teachers. Previously only secondary teachers had guaranteed time out of class and had many more promoted posts. This change created a shift for primary schools with new leadership roles and a greater emphasis on time for planning, assessment, and collegiate working.

The McCrone report was accepted in the main, and teachers' conditions of service were changed to reflect the requirement for them to complete 35 hours professional learning plus have a maximum class contact time of 22.5 hours per week, with the pupil day remaining at 25 hours per week (SNCT, 2014). Some aspects of McCrone, such as the increase to teachers' salaries and the assurance that all teachers are receiving their contractual 2.5 hours non-class contact time are straightforward to monitor. However, more challenging to evidence is the assurance that for this increased salary, and improvement in conditions of service, all teachers will participate in continuing professional learning which will impact upon their pupils. As a follow-up to McCrone, but almost ten years later, the Donaldson Review of teacher education in Scotland was commissioned. The review encompassed 'the entire spectrum of teacher professional development' (O'Brien, 2012, p.45) revisiting some of the issues identified but not resolved by the McCrone Report, seeking to provide a way forward on these (O'Brien, 2012).

2.2.2 Teaching Scotland's Future

There are various thoughts around the timing of the Donaldson Report (Forde et al., 2016; Kennedy & Doherty, 2012; Menter & Hulme, 2011). For example, Menter and Hulme (2011) claim that it was closely linked to political changes and the victory of the Scottish National Party (SNP) gaining control of the Scottish Parliament for the first time. The Report places itself firmly within a neoliberal performance framework:

> Human capital in the form of a highly educated population is now accepted as a key determinant of economic success… Evidence of relative performance internationally has become a key driver of policy. That evidence suggests, perhaps unsurprisingly, that the foundations of successful education lie in the quality of teachers and

> their leadership. High quality people achieve high quality outcomes for children (Donaldson, 2011 p.2).

This neoliberal view of education delivering economic success is challenged by Paterson (2014). One of the tenets of human capital theory is that by increasing the numbers of educated people there will be an increase in economic growth and greater social mobility. Paterson argues that there are many other factors at play within this and that these aims cannot be achieved through educational change alone (Paterson, 2014). Kennedy and Doherty (2012) recognise the intention of Donaldson's report to improve performance and attainment but also challenge the Human Capital view stating that the Report was a 'policy panacea' approach - a 'cure-all solution to address a range of issues' (p.838).

A focus on school improvement and raising attainment had been a focus pre-Donaldson, however the investment in both had not delivered the expected return. Donaldson proposed a complete overhaul of the teaching profession from Initial Teacher Education (ITE) through to formal leadership positions, a continuum of professional learning (Forde et al., 2016). The Report made recommendations for universities, local authorities, and individual professionals about how to increase the professionalism of teaching in Scotland.

Linked to the neoliberal view of investment and return, the Report is built on the assumption that improved professional learning will lead to greater educational effectiveness which in turn will lead to improved student outcomes(Cumming, 2011). Pre-Donaldson, the model of professional learning was one in which teachers would participate in professional learning activities, often one-off days, where individuals would be given specific training on latest innovations which they were expected to disseminate to colleagues. This method of professional learning was heavily criticised as being ineffective (Donaldson, 2011). Donaldson sought to build on McCrone's requirement that teachers continually engage in professional learning to meet the changing needs of learners and society. He proposed that each teacher should have an 'on-line profile' (Donaldson, 2011, p.97) linked to a revised framework of professional standards arguing that this would lead teachers

to embrace their learning as a career-long process. Donaldson hoped that establishing a continuum of professional learning for teachers in Scotland would result in increased professionalism where teachers are agents of change (Forde et al., 2016). There is a paradox however where teachers are expected to be 'prime agents in the change process' (Donaldson, 2011, p.14) whilst at the same time adhering to new professional standards. The Report also the expressed desire that more teachers would have master's degrees and that anyone looking to become a headteacher would undertake an additional postgraduate qualification.

Throughout the Report there is an emphasis on the importance of leadership with an increasing emphasis placed on teacher leadership. This led to recommendation 50 that a national college of school leadership be developed (Donaldson, 2011). This emphasis on teacher leadership gained prominence post-Donaldson and was linked to the need for greater return on investment in teacher learning and paved the way for a continuum of leadership development from teacher leader to system leader which it was hoped would accelerate the rate of change (Forde et al., 2011). The Scottish College of Educational Leadership (SCEL) was established in 2014 and sought to support leadership at all levels of the system (McMahon, in Bryce et al 2018). But SCEL's existence as an independent body was short-lived and in 2018 it was subsumed into Education Scotland (Scottish Government, 2019). It is disappointing that a potentially influential voice for leaders in Scotland was quietened within only four years of its existence.

2.2.3 The General Teaching Council and the Professional Standards

The General Teaching Council Scotland (GTCS) is the governing body tasked with exemplifying what is expected of a teacher and ensuring that teachers in Scotland comply with their requirement to participate in professional learning. Established in 1965, the GTCS controls entry into the profession and, from 2012, became a fully independent self-regulatory body (Hamilton, in Bryce et al. 2018). It is the GTCS which sets professional standards for teachers, including the requirement for teachers to maintain up-to-date professional learning evidence which must be ratified as part of 'Professional Update.' (This is in line with recommendations 35, 36 and 37 in the Donaldson Report.) Professional Standards are in place from when

a student teacher begins their studies, throughout their career and into formal leadership positions with teachers being encouraged to use the professional standards to reflect upon their practice and identify areas for continued professional learning as part of an annual cycle. Thus, the various Standards developed by the GTCS have a pivotal role in supporting and directing the professional learning of teachers across Scotland.

Teachers are expected to use these Standards to support them as they reflect upon their professional learning and to demonstrate competency through the Professional Update (PU) process. All GTCS registered teachers are entitled to an annual Professional Review and Development (PRD) reflective conversation with their line manager where they self-assess against the Standards and identify areas of practice they wish to improve. Every five years, line managers must confirm to the GTCS that teachers have participated in learning which has improved their practice. By framing PU as an 'entitlement', policy makers have sought to sweeten what could be considered a management tool for ensuring compliance with the Standards (Watson & Fox, 2015).

Each of the Standards follows the same broad headings, with an increasing number of professional competencies as teachers' responsibility increases with promotion. As the focus of this dissertation is the professional learning of classroom teachers I will use the *Standard for Career-long Professional Learning* (General Teaching Council for Scotland (GTCS), 2021b) as an example of the learning that is expected of teachers in Scotland. This Standard is the one used by fully qualified teachers who are not in a promoted post. Within this Standard, the GTCS sets out the expectation that teachers will commit to professional learning in following areas throughout their careers:

- Professional Knowledge and Understanding
  - Curriculum and Pedagogy
  - Professional Responsibilities

- Professional Skills and Abilities

- Curriculum and Pedagogy
- The Learning Context

Each of the elements of the Standard contain thirteen sub-headings each of which contains multiple 'professional illustrations'. Teachers are expected to 'have an enhanced and critically informed understanding' (GTCS,2021b, p.7) of these standards and sub-headings and 'consistently demonstrate... enhanced skills and abilities working both individually and collaboratively' (p.9). In addition, teachers are required to demonstrate professional values and commitment. Within the Standards, the GTCS have attempted to articulate the complexity of the role of the teacher and the range of learning they are expected to keep current. However, by insisting that teachers use the Standards as self-evaluation and planning tools the GTCS have may have undermined that complexity, seeking compliance rather that criticality (Forde et al., 2016).

2.2.4 The role of national organisations

Alongside the increased expectation for teachers to maintain high levels of expertise in their role there have been several national organisations charged with developing teacher learning. Prior to McCrone, teachers participated in professional review and an attempt had been made to link this to job effectiveness through an appraisal process (Scottish Education Department, 1991). This process was opposed by teachers who rejected the oversimplification of the link between teacher professional learning and performance (Watson & Fox, 2015).

The national Continuing Professional Development (CPD) team was set up post-McCrone to support the development of CPD policy and practice (Kennedy, 2011). However, in 2010, the newly elected SNP government announced that they were going to merge various organisations to form an overarching body, Education Scotland. Although the two major players were Learning Teaching Scotland (LTS) and Her Majesty's Inspectorate for Education (HMIE), the National CPD team were also subsumed into this new organisation (Hutchison, in Bryce et al., 2018). Education Scotland is therefore charged with both overseeing the improvement of

the curriculum through curriculum reform and measuring school improvement through inspection.

However, my professional experience had led me to think that the influence that Education Scotland has over curriculum design, judgement of establishments and school leaders, hinders school, system, and individual teacher autonomy. This view was echoed in the Scottish parliament when Education Scotland was described by MSP Liz Smith as acting as both 'judge and jury' (in Hutchison, in Bryce et al., 2018, p.212). Education Scotland have also been seen as being politically compliant, by not holding ministers to account (Hutchison, in Bryce et al., 2018).

2.3 The global policy context

The shift in focus to professional learning and the need to maintain up-to-date professional knowledge and understanding is not unique to teachers in Scotland. In this section I will explore two aspects of the global policy context: the proposed link between education and economic growth, and performance measures.

2.3.1 Education, economic growth and the global policy shift

Internationally, the significance of education and its link to economic growth developing the 'knowledge economy' is well documented (Day & Lee, 2011; Menter & Hulme, 2011; Olssen et al., 2004; Schultz, 1992). Forde et al. (2011) posit that 'the alignment of economic and educational performance is driving educational policy in many education systems, including Scotland' (p.56) with a global shift in the expectations placed on teachers. This shift is also true for those responsible for ensuring that teachers are maintaining up-to-date knowledge and skills (Garet et al., 2001; Harris & Jones, 2017b; King, 2016; Watson & Michael, 2016) Notions of 'systems thinking' and 'acting locally' while 'thinking globally' to meet future demands have filtered into education, although these terms originated in business (Senge & Sterman, 1992, p.137). Senge and Sterman (1992) proposed that, to compete in a rapidly changing world, companies must review their organisational management. Organisational learning was seen as a key to increased flexibility, which in turn was necessary for companies to retain their competitive edge (Senge

& Sterman, 1992). Given the perceived significance of education for competing within a global economy, this thinking quickly transferred into the education arena.

The increased focus on education and its role in developing the economic commodity of 'human capital' had a direct impact on teachers (Campbell-Barr & Nygård, 2014; Gillies, 2011), as noted in the Donaldson Report. The report states:

> Over the last 50 years, school education has become one of the most important policy areas for governments across the world. Human capital in the form of a highly educated population is now accepted as a key determinant of economic success. This has led countries to search for interventions which will lead to continuous improvement and to instigate major programmes of transformational change (Donaldson, 2011, p.2).

The significance of education to economic sustainability is evidenced by the range and number of economic organisations which look to compare and contribute to improvement within education. Two examples of this are the global management consultancy, McKinsey and Company, and the World Bank funded Organisation for Economic Cooperation and Development (OECD). McKinsey and Company compare educational systems across the world and their findings impact national policies (Barber et al. 2010; Barber & Mourshed, 2007). Their latest publications cite teachers learning from one another and multi-level collaboration as key factors in system improvement. Education policies across many nations are also influenced by the OECD who measure attainment in basic skills (OECD, 2018) and have heavily impacted the focus of governments in Scotland and beyond (Doherty & McMahon, 2007; OECD, 2012).The OECD are also ardent supporters of teachers collaborating or networking to bring about improvement (OECD, 2012, 2015).

2.3.2 Performance measures

Alongside the value placed on education for economic success, other aspects of neoliberalism have come to the fore with performance measures being introduced to schools to facilitate comparison both nationally and internationally. These

performance measures began to be used as a tool to impact global policy - including the role of teachers and school leader (Patrinos & Angrist, 2018). An example of this can be seen with the *Trends in Mathematics and Science Study* (TIMSS). In 1995, international comparisons of attainment in mathematics began with the introduction of TIMMS (Horne et al., 2008). This study not only compared students' attainment in maths and science at various stages but also a range of other factors including attitudes to mathematics, teachers' confidence, level of mathematics and the role school leaders and parents had. As more data were gathered, more granular analysis was possible with particular countries being identified as high attaining and possible factors for such success identified (Mullis et al., 2000). In response to this there is now formal datafication of the education system in Scotland from 3-18. This runs from the achievement of developmental milestones in Early Years, to reporting on teachers' judgements of attainment at Primaries 1, 4 and 7 and in the third year of Secondary school. It also includes formal achievements within the suite of Scottish Qualification Authority (SQA) awards (Mowat, 2018; Scottish Government, 2016b). All these measures are seen as key indicators of success and headteachers must ensure they are working with their staff to ensure constant improvement in outcomes for children and young people (Scottish Government, 2019a).

In addition to comparing students and teachers, these international studies also considered the activities of the school leader and the ways in which they plan for and support teachers to develop new teaching strategies to bring about improvements in performance. With increased economic and political focus on education, policy makers began to look for levers of influence, or agents of change, within schools and leadership became viewed as a driver of change (Gronn, 2000; Leithwood et al., 2019; Torrance & Humes, 2015). In the next section, I will describe my journey as a leader and the influences on that journey.

2.3.4 Educational leadership

Prior to becoming a headteacher, I studied for the Post Graduate Diploma in Educational Leadership with the Scottish Qualification for Headship (SQH). As part

of the two-and-a-half-year course, I engaged with different theories of educational leadership that proposed various ways in which headteachers could effectively lead and manage both people and change (Forde et al., 2011). Throughout this process I reflected on my own practice as a leader, seeking to align myself with the leadership theories which were the best fit for me. Hargreaves and Fullan (Fullan, 2001; Hargreaves & Fullan, 1998) were influences on my thinking at that time. I also looked beyond education to leaders in other fields (Collins, 2001; Covey, 1998). Each of these writers helped me to explore the ways in which my personal and professional values influenced my actions as a leader and the potential effect on the school I was leading. They also encouraged me to work with and through people to bring about sustainable change. Considering leadership from within and beyond education has influenced my thinking as a leader throughout my career.

Continuing to learn and develop as a leader has been a priority for me, with academic study one way this has manifest itself. My first headteacher post also had a nursery class and although I had previous experience as a deputy matron in a private nursery I had little understanding of recent research in Early Years teaching, learning or leadership. To effectively lead the nursery, I completed a Post Graduate Certificate in Education (PGCE): Early Years (Management). My nursery team at the time were very experienced but also demoralised due to the high turnover of teaching staff and a very critical local authority review of their practice. By choosing to study Early Years, completing a two-week placement full time within the nursery class, I demonstrated to my team that I was interested in them and committed to improving the nursery. I spent time with the team getting to know them by working alongside them. Working in this way I was able to build very positive relationships with the individuals in the team, get to know their strengths and areas where practice could be improved. Working in this way I was able to bring about improvements in their practice by building on their strengths and working in collaboration to bring about improvement. A significant piece of learning for me during this time was the work of Urie Bronfenbrenner. Like the DSMRI, Bronfenbrenner's model of child development attempts to present many different interacting elements including, wider contextual and social factors

(Hayes, et al., 2022). This demonstrated the potential importance of a complex model in developing professional understanding.

The Early Years PGCE built on my prior learning in the SQH. I was keen to continue to learn and to behave in ways which aligned with my values of trust and integrity, and with my beliefs about effective sustainable change being most effective when people work together and feel valued. Cowie and Crawford (2009) found that the SQH prepared headteachers for the post, enabling them to implement educational change whilst at the same time working effectively through people. Working with people, developing their skills through providing leadership opportunities was a key part of my leadership. The notion of collaborative practice (Leithwood et al., 2019) and distributed leadership (Hammersley-fletcher & Brundrett, 2005) became integral to practice.

Towards the end of my first headship, and building upon my learning through the SQH, I began to study for an MSc in Educational leadership. My supervisor for this research-based study was Peter Gronn. Peter was one of the first academics to suggest distributive leadership to bring about school improvement (Gronn, 2000). His work influenced my practice as I delegated authority to other staff to lead on projects, supporting them in their decisions and providing critical feedback to encourage reflection and learning.

My MSc study explored the learning needs of existing headteachers, particularly given their different learning experiences: some had experience of university level professional learning such as the SQH, and some had none. At the time, I found that headteachers were keen to learn from others - with reading of leadership theories beginning to feature for a few - although the majority were keen on sharing tacit or experiential learning (MacDonald 2008).

I completed my MSc just after my appointment to my second headship, an amalgamation of four schools in an area of multiple deprivation. The need to keep learning, adapting to new circumstances and adapting my leadership style to suit became very apparent in this post. Building a shared culture, ethos and identity

were our priorities. However, to get to this place, staff, parents, and children told us they needed logistical arrangements, timetables, authority structures and communication protocols in place to create a sense of security and purpose. I had to adopt a more directive leadership style which was at odds with the style of collaborative leader I had established in my previous post or that I believed would be the most effective. During this time, I adapted my leadership style according to my context. I found that, to lead effectively, I could not neglect some of the skills more commonly associated with management. Seashore-Louis et al. (2010) discuss the ways in which 'adjectival leadership models' (p.10) have come to the fore, where leaders seek to define themselves by adjectives such as, *participative, transformational* or *charismatic* (Seashore-Louis et al., 2010, p.10). This I find unhelpful as it tends to pigeon-hole leaders, as though you only operate as a leader in one way no matter the context. This was not my experience: I successfully established a new school by adapting my approaches as the context required. At times I would be authoritative, at others participative, at others charismatic dependent upon the needs of the school at the time, evolving as a leader as we evolved as a school community. This is in line with Leithwood et al.'s (2019) third claim that the application of leadership strategies should be responsive to the school context.

One aspect of leadership that all headteachers must engage with in Scotland is the School Improvement Plan. This acts as a mechanism for change in schools. In my second headship where I was bringing together four schools we had thirteen priorities on our plan encompassing all aspects of school life: curriculum; learning and teaching; building positive relationships; parental involvement; routines; and building our vision, values and aims. This ensured we worked strategically as a team and established ourselves as a school community which focused on learning and people. If we had only focused on people without teaching and learning we would have missed our core purpose, and if we had only focused on teaching and learning we would have missed the heart of being a caring community. As a school leader, this experience galvanized my thinking around the head and heart of being a school leader: my head reminding me of the importance of learning in school and the place of attainment and achievement but my heart recognising that people

were going through a huge change and needed care and compassion in the process. I believe that creating a learning culture for children and adults alike demanded I maintained a focus on both. This concept of leading with both the head and heart is particularly relevant for leaders within the public sector where both the 'relational and rational lexicons' p.10 are necessary to address complex issues within public services (Unwin, 2018).

After a few years as a Senior Manager within a Local Authority I was made redundant, returning initially to a class teacher post before being appointed to my third headteacher post. In approaching my third headship I was very aware on my need to keep evolving as a leader successfully blending theory and practice, head and heart. During this time, I came across the work of Steve Munby (2019) where the adjective used to describe educational leadership was 'Imperfect'. Of all the adjectival leadership models this one aligned most closely with my evolving view of leadership linked to the work of Brené Brown (2018) where leaders work collaboratively with their team leading with both their hearts and heads. Educational leadership is complex and always evolving in response to the exponential changes in technology, alongside the challenges of inclusion, and emerging pedagogies (Chapman, et al., 2016; Leithwood, et al., 2019). Societal change and the demands of policy impact on the person of the teacher and can make them feel exposed or vulnerable, unable to keep up with the pace of change (Biesta et al., 2016). I have committed to working creating a collaborative learning culture where teachers become collaborative professionals in line with Hargreaves and O'Connor's (2018) definition:

> *Professional collaboration* is descriptive— it delineates how people work together in a profession. *Collaborative professionalism* is normative— it is about creating stronger and better professional practice together (p.25).

In doing do so I have found that we can effectively implement sustainable change (Woodrow & Newman, 2023).

2.4 Conclusion

The responsibility for ensuring that teachers are continuing to learn, and that this learning has a measurable improvement in outcomes for children and young people, is not purely the responsibility of individual teachers. As educational leaders, headteachers have the responsibility to ensure that teachers are constantly engaging in learning which will lead to improvement (General Teaching Council for Scotland (GTCS), 2021a). In addition to the expectation that headteachers will undertake additional qualifications (Donaldson, 2010) and adhere to increased levels of accountability from the GTCS, they are also considered key policy actors in the implementation of national policies such as the *National Improvement Framework* (Scottish Government, 2016b, 2016a, 2019b).

With the increased emphasis on constant engagement in professional learning, new approaches of learning for teachers are beginning to emerge. These include Lesson Study (Hart et al., 2011), Teacher Learning Communities (Philpott & Oates, 2017a; Robutti et al., 2016), and Practitioner Enquiry (Wall & Hall, 2017). New vocabulary around teacher learning is also emerging, particularly within national policy documents, one which champions collaboration, networks and engaging in research as ways in which teachers could pursue professional learning (Education Scotland, 2015b; OECD, 2015; Scottish Government, 2016b).

Having considered the policy context for teacher learning and school leadership the next chapter explores more deeply what is meant by the term, 'teacher learning' in Scotland and internationally.

Chapter 3: Teacher Learning

3.1 Introduction

In this chapter I consider the subject of teacher learning as it is reflected in a range of literature. I discuss the ways in which the concept has evolved in recent years and some of the influences on this evolution. I also consider some forms of teacher learning which have come to the fore recently in Scotland, particularly in the post-Donaldson era. I then argue that there remains an 'inconvenient truth' (Korthagen, 2017, p.387) that the investment in teacher learning may not always lead to the impact that policymakers expect. I propose two possible avenues for exploration to address this: linking teacher learning to teacher identity; and considering teacher learning as a complex endeavour.

The importance of continuing to learn and develop to improve the effectiveness of one's practice is not unique to teachers (Becher, 1999). Professional learning is particularly important in all professions governed by professional bodies - such as law, medicine, accountancy, and teaching (Gold et al., 2007; Paisey & Paisey, 2020; Tran et al., 2014). Professions are subject to levels of scrutiny and accountability from their governing bodies and stakeholders. Individuals not meeting, or breaching, the standards of the profession may be 'struck off' by their professional body. The governing body for teachers in Scotland is the General Teaching Council for Scotland (GTCS). The GTCS sets professional standards across the profession from initial teacher education through to headteacher.

3.2 Understanding professional learning

Emphasis on teachers continuing to remain up-to-date in their practice is of interest to both scholars and policy makers. The notion of teachers' practice changing and evolving is known both as 'professional learning' and 'professional development' with both terms being used interchangeably by a range of scholars (Boylan et al., 2023). For this dissertation, I have chosen to use 'teacher learning' as it is the term currently favoured in literature and encompasses both the reflexive process and the continuing evolution of the teacher's professional

identity. Scholars from Canada, South Africa, Australia, and New Zealand have all contributed to understanding teacher professional learning (Campbell et al., 2016; Geldenhuys & Oosthuizen, 2015; Mockler, 2022; Timperley, 2007)

3.2.1 From professional development to professional learning

In line with this international trend from 'development' to 'learning' in Scotland over the past twenty years the shift in understanding professional learning has been reflected in changes in language (Watson & Drew, 2015) from 'in-service education' to 'continuing professional development'(CPD) and then to 'career-long professional learning' (CLPL). This shift reflects an emphasis on professional learning which is intentional rather than the broader term development which could be more closely linked to growth without intent or criticality (Kennedy & Beck, in Bryce et al. 2018; O'Brien, 2011). Discussions of teacher learning in the literature also highlight a shift in emphasis in teachers learning, from reliance on tacit knowledge often gained through experience (Eraut, 2000) to greater reliance on scholarship study (Cordingley, 2015). In addition to this shift towards more academic or 'studied' learning, there is also an expectation that teachers will *apply* that learning to their teaching practice so that it becomes core to their professional lived experience. (Campbell et al., 2016; Hall & Wall, 2019).

Whether it is understood as learning or development, needs change across teachers' career phases. Huberman recognises that teachers go through various stages in their careers as they gain experience (Huberman, 1989). Building on the work of Huberman (1989) and Day et al. (2007), Hargreaves and Fullan (2012) agree that teachers go through distinct stages in their career and, as they do so their professional identity changes. They argue that, to ensure teachers continue to learn, school leaders must seek to develop the professional capital of teachers, where professional capital is defined as a combination of human capital (knowledge and skills,); social capital (quality and quantity of social interactions and relationships); and decisional capital (the ability to make discretionary judgements). This is echoed by Furner and McCulla (2019) who argue that teachers need different forms of learning as they move through different stages of their

careers. They identify five different stages of learning for teachers and leaders from the early career teacher who they define as being an 'I need it now' learner (2019, p.510) through to 'executive leaders' whom they define as 'focused learners' (2019, p.511). They too emphasise the need for leaders to be aware of the stages that teachers are at in their learning because leaders are required to created contexts which support and sustain teacher learning which is meaningful to the teacher and within the overall context of the school.

3.2.2 Teacher learning and performativity

However, there is also a performative element to professional learning and the application of knowledge. There is an expectation that new learning applied in classrooms will result in improvements to pupil learning and, in line with the performance-driven culture, these improvements should be measurable (Chapman et al., 2016). Mockler (2022, p.167) links this to Connell's (2013) definition of the 'neoliberal cascade'. Connell notes that, in Australia, teachers were required to maintain their professional standards by taking mandatory courses set by nationally accredited providers of professional learning. By being forcing to take particular courses, teachers were subject to the neoliberal focus of the state (Connell, 2013). Lloyd and Davis (2018) describe this as placing teachers within a system which is established to 'ensure that they meet competing public and policy demands for accountability, surveillance and regulation' (p.92). This leaves little room for the situated and contextualised nature of teachers' learning to be considered. Quoting Shulman (1987), Simmie et al. (2023) describe teacher learning as 'outrageously complex' (p.1) but seek to remind us of the possibility that teacher learning can lead to transformative outcomes. This is a view shared by Boylan et al. (2023) who describe teachers as potential activists engaged in transformative work.

These views of teachers being activists engaging in activities which will transform society are fairly far removed from the lived reality of teachers. Teachers are currently working within a system which only values what can be measured. This results in performativity where teachers focus on what is measured at the expense

of the holistic development of the child. This can cause conflict and dissatisfaction with their role (Ball, 2003; Priestley et al, 2015). However, with the constant demand for improvements in measurable outcomes and the various mechanisms in place to ensure that teachers are achieving professional standards it is unsurprising that these conflicts arise. In Australia, for example, a large-scale analysis of teacher professional development was undertaken in 2002-3 by Ingvarson et al. (2005).They discovered that, despite significant investment, there was negligible impact on educational outcomes for children and young people for many of the teachers who had participated in the four different professional development programmes involved in the study. This was despite the highly bureaucratic system of accredited professional learning (see also Furner & McCulla, 2019; Mockler, 2022).

3.2.3 The contested nature of professional learning and development

Ingvarson et al. (2005) highlight components of professional development which provide some examples of effective teacher development. These include collaborative working, emphasis on content knowledge, and a supportive context for learning (Ingvarson et al., 2005). These are common themes across several studies (Garet et al., 2001; Guskey, 2002; Kennedy, 1998, 2016) but are not uncontested. For example, Fraser (2010) urges caution when embarking upon whole scale collaborative learning. Finefter-Rosenbluh (2016) raises doubts as to the effectiveness of reflective practice. Fraser (2010) also notes that teachers coming together to learn can produce tensions as different views, values and opinions can collide. Unless there is trust and negotiation these differences can prove divisive (Fraser, 2010). If, however, there is a supportive context, collaboration produces better working relationships (DeLuca et al., 2017) and can bring joy to the professional lives of teachers (Datnow, 2018).

Reflective practice is widely promoted as a meaningful way in which professionals improve (Schon, 2008) with teachers, especially those new to the profession, being encouraged to reflect on their practice (Geng et al., 2019). There is also a move within professional learning which seeks to combine reflection and collaboration within teacher learning where teachers support one another in reflecting upon

their practice (Darling-Hammond et al., 2017) but this, if situated within a high-stakes neoliberal environment can produce an ethical dilemma for teachers (Finefter-Rosenbluh, 2016) where the drive for improved performance prohibits risk, induces fear of failure, causing attrition from the profession (Santoro & Morehouse, 2011). School culture and the ways in which those in leadership positions balance these dilemmas appears crucial in ensuring that professional learning continues and has a positive impact on teachers and those they are teaching (Priestley, 2011; Schaap et al., 2019; Seashore Louis & Lee, 2016; Seashore Louis et al., 2010)

3.2.4 Teacher learning and professional identity

Policy makers seek to influence practice through the use of the GTCS Standards and, according to Torrance and Forde (2017), this 'reprofessionalising' of teaching in Scotland, is considered a main purpose of the Standard which list the professional attributes of teachers. However, the practice of teachers is not only influenced by their *professional* attributes or self but also their *personal* self (Kelchtermans, 2018). The identities of the teacher, both personal and professional are major contributing factors in their professional learning. According to Day et al. (2007), 'teachers' sense of professional and personal identity is a key variable in their motivation, job fulfilment, commitment and self-efficacy' (p. 102). Professional identity is also founded on the personal identity of teachers. George et al. (2018) note that a sense of personal identity is influenced by an individual's sex, race, socio-economic status, or cultural group. It is also influenced by an individual's personal agency, choice, efforts, and persistence when faced with life challenges (George et al., 2018).

Teaching is also described as 'fundamentally emotional work' (Schutz et al., 2018, p.245) and this may affect teachers both personally and professionally. Day (2018) links the professional and personal identities of teachers and emphasises the emotional life of the teacher, writing that teaching *'is not by definition emotional labour, but it is undoubtedly emotional work'* (Day, in Schutz et al., 2018, p.78, original emphasis). Hong et al. (2018) assert that this ability to engage emotionally, with 'professional empathy', combined with a sense of agency and

efficacy, ensure teachers stay motivated and engaged able to teach to their best (Hong et al., in Schutz et al., 2018, p.246). The personal identity of a teacher is something which inherently shapes them and is the foundation of their professional identity. Identities can be ascribed (such as an individual's sex, race, socio-economic status or cultural group), or achieved (because of an individuals' personal agency, choice, efforts, and persistence) (Richardson & Watt in Schutz et al.,2018). Identity also alters over the life course (Chien, 2020; Geijsel & Meijers, 2005). Given the complex nature of teachers' personal and professional identities, and the potential influence these have on practice, it is unsurprising that by only considering linear models of teacher learning reforms are not having the desired impact. Even if the expected changes are set out within requirements, policy, or standards, actual change may not happen in practice (Korthagen, 2017).

3.3 Professional learning in Scotland

The expectation that teachers would continually improve and develop is now clearly established in the mind of policymakers. The focus now turns to the most efficient method of investing in teacher development with the expectation that for such an investment there would be an associated return (Kennedy, in Bryce et al., 2018). As previously mentioned, there has been a significant increase in the past twenty years of neoliberal performance-driven policies. Data is gathered and reported publicly on the Scottish Government website (Scottish Government, 2023). This data covers a variety of areas including outcomes of pupil learning; class sizes; attendance and exclusion data; adherence to professional standards for teachers and a range of other data for measuring improvement, set by Education Scotland.

Given the link in policymakers' minds between the investment in teachers' learning and improved measurable outcomes, teacher learning has become entwined with performance driven professional learning. Kennedy (2005) describes some the prevalent forms of professional learning which were evident post McCrone but pre-Donaldson. She describes models such as the 'cascade model' in which individual teachers were taught something new and expected to share with colleagues; 'training model' where teachers are taught by an expert; 'deficit

model' where new skills are taught to remediate perceived weaknesses; and 'award-bearing model' a taught programme which is externally validated (Kennedy, 2005). Each of these models were based on Human Capital Theory, HCT (Hill, 2005; Gillies, 2011; Schultz, 1992).

HCT is based on economic principles and sees a direct relationship between investment and return. When applied to teacher learning, in its most basic form, it would be:

Teacher + investment of new training idea = better teaching

Alongside this would be the assumption that 'better teaching' would lead to improved outcomes for children and young people, which would be reflected in measurable improvements in data (Clarke & Hollingsworth, 2002). However, this model of teacher development was challenged (Clarke & Hollingsworth, 2002; Guskey, 2002) and number of more complex ways of representing teacher professional learning began to arise.

Andy Hargreaves and Michael Fullan have been significant influencers on the development of leadership and professional development internationally and in Scotland. Their works were viewed as core reading for aspiring leaders within the Scottish Qualification for Headship (Fullan, 2001, 2003a, 2003b; Hargreaves & Fullan, 1998) with the inclusion of literature viewed by many as a crucial aspect of leaders' professional development (Morris & Reeves, 2000; Reeves & Casteel, 1999). In their 2012 publication, 'Professional Capital', Hargreaves and Fullan sought to introduce aspects of complexity to a model of teachers' professional learning. They located professional learning within an expanded HTC model which added the dimensions of Social Capital (quality and quantity of social interactions and relationships) and Decisional Capital (the ability to make discretionary judgements) to Human Capital (knowledge and skills). This created a model which, although based on the economic principle of HTC, provides for the complexity of professional learning (Hargreaves & Fullan, 2012). However, this 'input/ output' model has limits when applied to learning within a range of professions. First, HTC

views learning as a commodity, like other resources, which can impact productivity 'when the resource is effectively exploited the results are profitable both for the enterprise and for society as a whole' (Livingstone, 2012, p.10). Second, HTC it is predicated upon assumptions of skills that will be needed in the future (Livingstone, 2012). The future is unknown and therefore the skills that will be required for future economic growth are also unknown. This could mean professionals invest in learning skills that quickly become redundant due to the exponential rate of change for example with digital technologies.

This lack of acknowledgement of the complexity of teacher learning and the over-simplification of models of professional development has caused problems for policymakers. There is evidence that teachers and schools in Scotland 'innovate without change' (Priestley, 2011, p.1). This is a view echoed internationally: models of professional learning such as top-down cascade approaches have not tended to lead to improvement in outcomes for learners (Higgins et al., 2014).

Unfortunately for policymakers, a common theme around teachers' learning is that it requires significant investment in funds and time (Ingvarson et al., 2005). If teachers are to participate in high quality learning, especially if it is academic in nature, they need time away from their classroom for study, but their pupils still need to be taught. This creates additional funding requirements as funding for the academic study and payment for the teacher who is covering for the teacher studying are required. In Scotland, most schools are in the public sector. Funding was a challenge for public services pre-2008 but, following the financial crash of 2008, funds available for investment in public services (including teacher learning) became even more challenging (Christie Commission, 2011). Despite these financial limitations, the drive for teachers to engage in professional learning has continued.

Policy makers in Scotland have also looked to influence practice through developing the professionalism of the teachers. According to Torrance and Forde (2017), this reprofessionalising of teaching in Scotland is considered a main purpose of the GTCS Professional Standards. The Standards list the professional

attributes of teachers. However, the practice of teachers is not only influenced by their professional attributes but also their personal selves (Kelchtermans, 2018). Teacher identity (both personal and professional) is also a major factor in professional learning and is ‘a key variable in their motivation, job fulfilment, commitment and self-efficacy' (Day et al., 2007, p.102).

The professional identity of teachers is currently viewed as a key driver for improvement within the *National Improvement Framework* (2020) in Scotland. However, this once again links the professional identity of teachers to a neoliberal agenda as improvements are calculated across a very narrow range of measures (McIlroy, in Bryce et al., 2018). Rather than supporting professionalism and the professional identity of the teacher, neoliberal policies can lead to teachers compromising their professionalism to improve performance (Ball, 2003). This requirement to enact policy and resulting judgement of effectiveness is seen to have a detrimental impact on teachers’ professional identity (Doherty & McMahon, 2007; Moore & Clarke, 2016). Paradoxically, rather than reprofessionalising teaching, the adherence to professional standards within the policy context of education in Scotland is leading to a de-professionalising of teachers as their sense of agency is undermined by performance driven policy (Biesta, 2015; Biesta & Tedder, 2007; Priestley et al., 2015; Vähäsantanen, 2015).

It is clear that the professional identity of the teacher and the different phases of a teacher’s career are noted within the Standards, given that there are five different standards ranging from provisional registration to headship. However, these Standards are applied universally across all teachers, no matter their sector, taking no account of context nor personal circumstances therefore their helpfulness in understanding professional identity is limited.

3.4 New practices in teacher learning

3.4.1 Scottish contexts for professional learning

Donaldson’s 2011 report was the precursor to the review of the Standards for teachers in Scotland (Donaldson, 2011; Menter & Hulme, 2011). Donaldson (2011)

suggested that different forms of teacher learning which emphasised teachers collaborating should focus on learning which directly impacts practice rather than spending time on one-off events which are less effective. This ushered in several new forms of teacher learning including: Teacher Learning Communities (Oates, 2014; Philpott & Oates, 2017b); Lesson Study (Moscardini & Sadler, 2018; Murphy et al., 2017; Wake et al., 2016)and Practitioner Enquiry (Wall & Hall, 2017; Kate Wall, 2017). Evidence is emerging that when teachers learn together, wrestling with new practices and talking about their work with other teachers they begin to change their practice which in turn impacts outcomes for their children and young people(Hargreaves, 2019; Robutti et al., 2016).

This notion that teachers could learn from one another and develop their skills in situ (rather than being released from their day-to-day classroom commitments) must have been music to the ears of some policy makers. No longer would there be the requirement for teachers to participate in expensive academic study and the costs associated with providing cover teachers. The new forms of teachers' learning, mentioned above, encourage teachers to work with one another using a more 'action research' model of professional learning. Within these models, elements of theory and practice are combined, located within teachers' current contexts with learning being applied to current classes. This represents a move away from academic rigour a major theme of Donaldson(2011). There is also evidence elsewhere that this emphasis on academic rigour viewed as an element of the 'reprofessionalisation' of teaching has not been realised (Biesta et al., 2015; O'Brien, 2011). According to Kennedy (2005) academic or 'award-bearing' professional learning has a lower capacity for professional autonomy than other more transformative forms of professional learning, as study which is academic has its parameters set by the university or college rather than by the teacher themself.

In the past ten years there have been a significant number of changes including new national policies such as: the drive for improvement via the *National Improvement Framework* (NIF) (Scottish Government, 2016b) and *Scottish Attainment Challenge* (Scottish Government, 2019b); the presumption of

mainstreaming (Scottish Government, 2017c). There have also been significant reports which have impacted practices including more integrated children's services (Christie Commission, 2011); the imposition of a national lockdown (Scottish Government, 2021) and most recently the proposed curricular changes emerging from the Hayward Review (Independent Review Group, 2023).

The rate of change and number of changes across the system require teachers to engage in forms of professional learning which have more professional autonomy as they seek to meet the challenges of policy whilst retaining their professional integrity. Many of the key themes within Donaldson's report have remained such as: collegiate working; focus on impact on young people's learning and personal responsibility for professional learning. These have been translated into policy as *teachers' professionalism*. Teachers' professionalism is considered by the Scottish government as key to achieving its priorities, being one of six drivers of the NIF and, for them, the measure of professionalism is through data which demonstrates engagement in professional learning (Scottish Government, 2019a). A new model of professional learning for teachers in Scotland was launched in 2019 (Education Scotland, 2019) below.

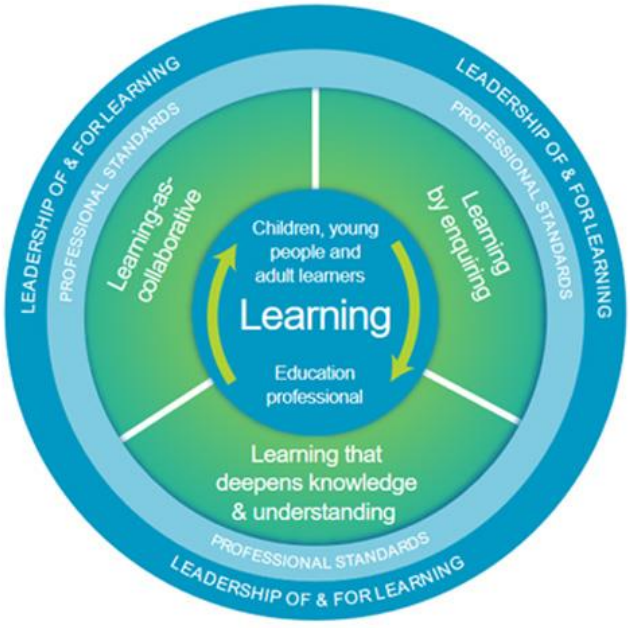


Figure 1: National Model of Professional Learning (Education Scotland, 2019)

At its core, this model links educators' professional learning and the learning of children and young people. Moving outwards the next three dimensions also include elements from Donaldson including: collaboration; enquiry-based learning and developing knowledge and understanding. These are encompassed by professional standards with the final surrounding element being leadership for learning. This final layer highlights yet another element of complexity to teachers' learning; not only does their learning have to impact them and their children and young people but they are expected to lead others in their professional learning journey, irrespective of whether they have a formal leadership position or not (Education Scotland, 2015b). Writers such as Evers and Kneyber (2015) are calling for a 'flipping of the system' where grassroots teachers lead on improvements rather than having them imposed upon them by policy makers and paradoxically here are policy makers stating that they have an expectation that teachers will lead change.

Perhaps the problem with both academic based and grass roots teacher learning is that there is a lack of agreement on purpose. Is the purpose of teachers' learning to bring new teachers in line with previous ways of being and maintain the status quo? To ensure that teachers improve performance within a narrow set of measures as defined by government? To develop more highly skilled passionate professionals within their area of expertise? (Kennedy, 2015). This lack of clarity around purpose of teacher learning may mean that people may be using the same vocabulary of 'leading learning' but with quite different expectations around what the outcome will be, especially as there are specific expectations around those in promoted posts or with a particular area of expertise in supporting teacher learning. Further analysis will follow which will consider different forms of professional learning and the leadership of learning for those who have a specific responsibility for leading teacher learning.

Three forms of teacher learning which have gained prominence recently in Scotland are: Lesson Study; Teacher Learning Communities (TLC) and Practitioner

Enquiry. Taking each in turn I will identify its key elements, relating, where possible to the model of professional learning from Education Scotland noted above.

3.4.2 Lesson Study

This form of teacher learning came to prominence in Japan and involves a small group of teachers planning, teaching, observing, and providing feedback to one another in a cycle. Used predominately in the teaching of mathematics it aims to provide focus and clarity on teaching within the classroom. It requires time for collaborative planning as teachers to work together on their line of enquiry. These collaborative aspects are considered positive and teachers who engage in the process report increases in their knowledge with the ways in which tacit knowledge is shared of particular importance (Dudley, 2013; Murphy et al., 2017).

Within a school setting, the area of study would tend to be part of an overall improvement agenda set by senior leaders, meaning that the teachers themselves have more limited agency and autonomy over their learning. Although this collaborative aspect is what many teachers find appealing, and within the diagram above is expected by policy makers, building and maintaining working relationships is complex for individuals and requires a significant time commitment from senior leaders to facilitate each part of the cycle (Godfrey et al., 2019). Lesson Study also involves teachers observing and critiquing one another which can be a barrier as either students or teachers may be uncomfortable with being observed (Finefter-Rosenbluh, 2016).

3.4.3 Teacher learning communities (TLC)

Within the literature these communities have many names: communities of practice; professional learning communities; and teacher learning communities. For the purposes of this dissertation I will work with the following definition:

> communities within schools, composed of voluntary participating teachers facilitated by school principals with a specific task to accomplish as part of a larger innovation project (Schaap & de Bruijn, 2018).

Once again, the collaborative nature of the professional learning is emphasised. Within TLCs, teachers come together and agree an area within the overall innovation project that they are going to work on. Through professional dialogue they establish a shared understanding of what they are trying to achieve and agree activities they plan to implement. Following implement they discuss effectiveness. This process of reflective dialogue with colleagues, working on the same area has been proven to improve teaching and has positive impacts on pupil learning (Doğan & Adams, 2018).

However, criticisms have also been levelled at such communities around their measures of success and improvement. By setting the parameters for the community, including what area the community will study and how improvement will be measured, senior leaders exercise control over the community and maintain a neoliberal focus on measurable improvement rather than the opportunity to explore wider areas of study which the community may like to investigate (Philpott & Oates, 2017a). And, like Lesson Study, these complex communities are based on relationships and commitment from individuals who are part of the community and from the senior leaders who must create time and space for the professional dialogue(Huijboom et al., 2019).

Learning Rounds (Philpott & Oates, 2017a) are a specific form of TLC. Similar to Lesson Study (Bocala, 2015), teachers who engage in Learning Rounds (LR) work in collaborative teams, teaching in front of one another and providing feedback. LR encourages teachers to become part of professional learning communities with the hope that teachers would be able to support one another in leading change in pedagogy(Bowe & Gore, 2017).

Philpott and Oates (2017b) suggest that for LR to be successful, a number of issues should be taken into consideration. Their seven recommendations for successful LR

include aspects which as a school leader it is difficult to meet. For example, ensuring that groups are diverse and that groups will be supported by 'informed facilitators' (p.330); ensuring that teachers are willing to have their values and practices challenged by peers (p.330). The final, and perhaps most significant aspect of LR according to Philpott and Oates (2017b), is that when teachers engage in LR they must be aware of both their agency and identity shifting. Bowe and Gore (2017) view LR as a positive way of supporting teachers learning, believing they build on the professional practice of teachers as both 'teachers and learners' p.353. They also advise caution when seeking to implement LR believing that for them to be effective three requirements must be in place: resources (including time to collaborate) in order to identify the issue they wish to address; the opportunity to gather evidence and discuss this with colleagues; the willingness to collaborate on hard issues (Bowe & Gore, 2017) This is a challenge and could be something that teachers may not be prepared to expose themselves to; requiring a culture of collaboration; and resources (including time) which managers may not have the ability to give.

3.4.4 Practitioner Enquiry

Like TLCs above, Practitioner Enquiry is known by other names with 'practitioner' being sometimes replaced by 'professional' and 'enquiry' by 'inquiry'. For the purposes of this dissertation, I have chosen Practitioner Enquiry (PE) and have located this form of teacher learning within Stenhouse's view of professional development where:

> the outstanding characteristic of the extended professional is a capacity for autonomous professional self-development through systematic self-study, through the study of work of other teachers and through the testing of ideas by classroom research procedures (Stenhouse, 1975, p.144).

Practitioner Enquiry (PE) emphasises the importance of locating the teacher's learning within their current context and studying an aspect of their own practice

to bring about improvement in it. Unlike the other examples of teacher learning mentioned above, PE is more often an individual rather than a collaborative process (in contrast to the model of teacher learning from Education Scotland). PE has been given a place of particular significance for teachers in Scotland, as it is a requirement within each of the GTCS Standards from the *Standard for Registration* to the *Standard for Headship*. There is an expectation within the Standards that headteachers and others will support PE. Due to the individualised nature of enquiry, less collegiate time is required from the school's Working Time Agreement (collegiate time is where teachers must work together at agreed times). Some activities may be done at a time and place of the teacher's choosing such as assessment, planning and preparation; other activities such as parents' evenings, staff meetings, and development activities are collegiate. As PE has an individual focus, there is greater autonomy around the timing and location of teacher learning which is not possible if the learning is prescribed by the school's development priorities (Wall & Hall, 2017).

Practitioner Enquiry (PE) has gained momentum in the UK in recent years (Wall & Hall 2018). It is seen as way to build on Stenhouse's (1975) vision of teachers shaping and designing the curriculum through becoming researchers of their own practice. By doing so Stenhouse believed that teachers could stay up to date with their practice and work with academics to bridge the research/practice divide. Stenhouse has been a significant influence on teachers' learning, an example of this being a recent edition of *The Curriculum Journal* dedicated to Stenhouse's legacy (Pountney, et al., 2024).

However, the UK is not the only country who decided PE is a helpful form of professional learning. Following publication of Timperley et al.'s (2007) report for the New Zealand Government PE had played an important role in the professional development of New Zealand's teachers. However, being part of New Zealand policy has meant that rather than being a bottom-up process driven by teacher agency PE has been seen as a lever for change and an accountability structure for policymakers (Lim, et al., 2022). Over ten years, PE in New Zealand has gone through various phases linked to accountability and policy including but not limited

to being a requirement for professional registration. This linking of policy and teacher agency can, ‘stifle teachers’ ability to engage in professional learning that extend beyond compliance’p.204 (Lim et al., 2022).

Although I have found it effective in my school PE is not without its critics being potentially an amalgam of other forms of teacher research (Peiser in Beauchamp et al., 2015) or of a variety of different forms of teacher learning (Orland-Barak, 2009). PE is building on Stenhouse’s (1975) view of researchers and teachers collaborating to add to the knowledge base of teachers’ practice as part of the process of developing the curriculum. Although valuing the voice of teachers in research Goodson(2005) urges caution on the part of the researcher due to the unequal relationship between the teacher whom he describes as *givers* with the researcher as *takers*. He cautions that Stenhouse’s model is challenging as,

> 'collaboration between two parties that are differentially located in structural terms' with the result that 'each sees the world through a different prism of practice and thought' (Goodson in Fernandez, et al., 2005, p18)

The factors which influence teachers’ practice are varied and not all have a solid research base (Opfer & Pedder, 2011). As I discovered in my own leadership practice, many teachers are relying on social media as an influencer on their practice. Strategies and resources from social media are being adopted by teachers used within their PE potentially perpetuating the spreading of poor practice with no evidenced-based educational benefit. I would argue that, by exploring a new strategy or resource through practitioner enquiry - even if it is one that has been discovered on social media - teachers would be engaging in critical reflective practice around the new strategy or resource. Otherwise, they could have adopted it without engaging in any form of critical thinking.

3.5 Conclusion

Within this chapter I have outlined the policy influences on teachers’ learning in Scotland. Pivotal in this has been Donaldson’s 2011 report with the move away

from large scale teacher development to models of teacher learning which place greater expectation on teachers themselves. I have also described the implications for headteachers who have a dual responsibility to support teachers' learning and bring about continual school improvement.

I explored former and newer models of teacher learning, identifying where these align with policy and teachers' personal responsibilities. In the next Chapter, I will explore a complex system which has been applied to teacher learning which has teacher identity at its core.

Chapter 4: The Dynamic Systems Model of Role Identity

4.1 Introduction

Building on the previous chapters exploring policy and literature around teacher learning, this chapter delves deeper into the model or learning I chose to examine. The Dynamic Systems Model of Role Identity (DSMRI) is based on complexity theory which combines developmental, educational, and social psychologies. Devised by psychologists Professor Avi Kaplan and Dr Joanna Garner (Kaplan & Garner, 2017) the DSMRI has been applied to learning in several contexts including that of teacher learning (Garner & Kaplan, 2019, 2021). The DSMRI was designed to address 'the prevalent acontextual, linear, process–product conception of teacher learning' (Garner & Kaplan, 2019, p.7). Instead, the DSMRI builds on theoretical perspectives that 'capture [teacher learning's] complex, dynamic, and personal, yet contextualised, nature' (Garner & Kaplan, 2019, p.7).

As described in chapter one, the timing of my study was significantly impacted by the global pandemic. I commenced the research element of my study in August 2019, completed my first interview with T1 in February 2020 with covid and its associated restrictions arriving in March 2020. The restrictions of covid meant Lesson Study and my planned interviews with the teacher and headteacher participants could no longer happen. Completing the first interview was extremely valuable as it proved to be a catalyst for changing the direction of my study. During the interview and the transcription process I was struck by the emotive language the teacher participant used, and the range of different factors which she identified when describing her experience of Lesson Study. Reflecting on this, I began to consider teacher learning as being much more closely linked to the identity of the teacher and therefore as being multi-faceted with layers of complexity. It was during this time that, as part of my exploration of the literature in teacher identity (Schutz et al., 2018), I read Garner & Kaplan's work on the DSMRI.

The DSMRI model (Figure 2 below) appeared to include many of the aspects identified by T1 as impacting her learning during her participation in Lesson Study

and I was keen to explore it further. I began by considering dynamic systems applied in other fields of study.

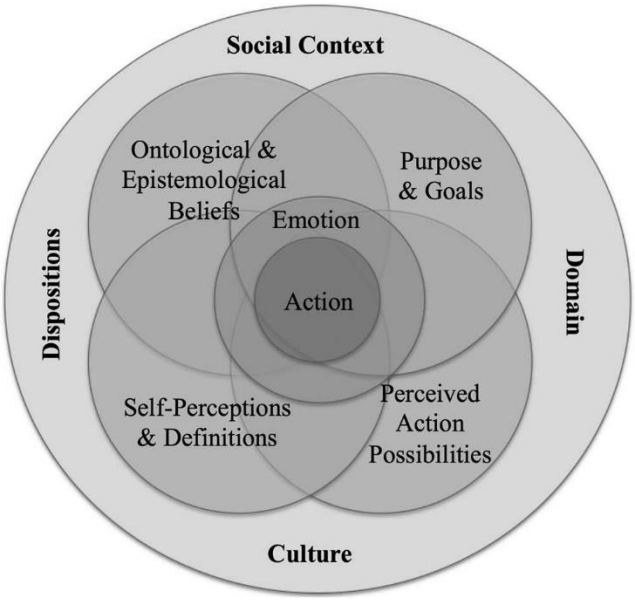


Figure 2: The Dynamic Systems Model of Role Identity (Kaplan and Garner 2017)

4.2 Dynamic Systems Models (DSM)

In seeking to define and understand the complex world around us, we have become more aware of the interdependent nature of various systems. By considering this interdependence, or dynamic interchange, we can better understand and influence the system being studied. Dynamic Systems Models are designed to support this understanding. Dynamic Systems Models (DSM) have been applied in many different areas including: the natural world, economics, and child development. I will first look at examples of DSM before looking more closely at the complexity theory they relate to.

4.2.1 Examples of Dynamic Systems Models

4.2.1.1 DSM in biology and industry

Biologists looking to enhance crop production identified photosynthesis within the canopy of an eco-system as a key factor in maximising crop production (Song, Chu, Parry, & Zhu, 2016). By considering many variables and their interdependent

nature scientists are developing their knowledge of how they can genetically modify plants to ensure sustained crop production in the event of climate change in a range of different environments.

Within industry and societies globally, there is an increasing focus on the knowledge economy (Jahan & Jespersen, 2016; Mark Olssen, 2014). In business, just as in education, there is a research-practice divide with the new knowledge being generated through research not being transferred into innovative practice (Glaser et al., 1983; Leontief, 1982; Rogers, 1995). Given the investment in research and development that industries make, it is imperative to find more efficient ways of transferring knowledge to ensure economic sustainability and competitiveness. Like education, this divide has caused analysts to look more closely at current models of knowledge transfer to develop new models which will bridge the research/practice divide and improve efficiency.

Unlike other commodities, Parent et al. (2007) recognise that knowledge is held and transferred by people:

> Knowledge in this context is viewed not as an object to be transferred but as a by-product of interactions between individuals within a social system with varying knowledge transfer capacities (Parent et al.,2007, p.90).

They assert that for knowledge to be effectively and successfully transferred into improved practices and productivity organisations and social systems require different capacities: knowledge generation, dissemination, absorption, adaptation, and responsiveness (Parent et al., 2007). They developed a DSM to represent this known as *Dynamic Transfer Knowledge Capacity*. New knowledge introduced to the system is then tested and explored by the people at various parts of complex organisations who apply their practical expertise and work together to test and refine this new knowledge. As a result of rigorous testing only the knowledge which benefits the system is assimilated into the organisation. This benefits the organisation ensuring that time, energy, and resources are not spent on knowledge which cannot be translated into practice.

4.2.1.2 DSM in developmental psychology

Given that I am an educationalist, one of the most interesting applications of DSM is within developmental psychology. Since my undergraduate days I have come across the divide between those who hold a Piagetian view of how children learn (where learning is linked to various ages and stages of development) and those who hold a Vygotskian view (where learning is impacted by the well-chosen interventions of adults). I acknowledge that my definitions above of both stances is limited and that both scholars' theories were deeper and more nuanced. In addition, context has had an impact on the application and development of their theories (Isaacs & Lawrence, 1973; Moll, 2013). But I still come across educational theorists who embrace one perspective and eschew the other (Agbenyega, 2009; Halpenny & Pettersen, 2014; Nilsson & Ferholt, 2014). I was interested to discover that these theoretical perspectives had been understood through the application of a DSM (Van Geert, 1998).

Van Geert (1998) developed a Dynamic Systems Model of Basic Developmental Mechanisms and analysed data generated on studies of aspects of child development, both from Piagetian and Vygotskian perspectives. By taking account of a wider range of factors and examining subtle changes in each he argued that there is potential for his DSM to be used as a model for understanding the complexities of child development. Smith and Thelan (1994) have also looked to use a Dynamic Systems Approach (DSA) to understand the complexities of child development. Starting from a basic nature/nurture argument and moving through interactionism and transactionism, they dismiss all as being over-simplified. Rejecting the view of cognition and locomotive development as mechanicalistic input/output models they compare development to a more organic, fluid system which is created and developed through interaction over time. They use the DSA to analyse data and apply it to empirical work in child development both in cognition and locomotive development thus they better understand the nuances of child development and the multiple factors which impact upon it. Having applied their model to cognitive development in children they argue that the principles of

cognitive development in children are the same for adults as the mental activity for both is emergent, situated, historical and embodied (Thelen & Smith, 1994).

Each of these examples from biology, economics and psychology demonstrate how complex systems are analysed and understood by considering the many factors that interact with, and have an impact on, one another. I believe that teacher learning is a complex, organic, dynamic system which is always contextualised and that by considering it as such we will begin to understand different elements and how these impact upon one another. And, once we understand this, there will be potential to create environments which enable teachers to grow and develop according to their individual learning needs.

4.2.2 Complexity theory applied to teacher learning

The challenge for policy makers is that, despite the investment in teacher professional learning, current linear and uncontextualized models of professional learning are not having the desired impact (Anderson et al., 2018; McChesney & Aldridge, 2019; Seashore Louis & Lee, 2016). Snyder (2013), Opfer and Peder (2011), Clarke and Collins (2007) and Strom and Viesca (2021) all apply a complexity theory lens through which to examine teacher learning.

Snyder (2013) provides a helpful explanation of the differences between simple, complicated, and complex issues asserting that to address complex issues requires complex thinking. An example of a simple issue, according to Snyder, is making a cake. To make a cake one follows a recipe and, once the recipe is perfected, it will produce the same results. An example of a complicated issue is sending a rocket to the moon. When sending a rocket to the moon there are many variables one has to factor in and adjust for, however, with sufficient accurate data and the correct formulae one can not only launch one rocket into space but by using the same formulae, even although the data is different, formulae enable scientists to repeat the process and launch more rockets. To illustrate a complex issue, Snyder (2013) uses the analogy of raising a child. There are many different personal and contextual factors involved in the process of raising a child, and no matter if one

has used particular parenting strategies successfully to raise one child it doesn't mean that applying the same parenting strategies will result in the same outcome for the next child (Snyder, 2013 p7). Having helpfully differentiated between simple, complicated, and complex, Snyder provides a compelling argument why education reform should be considered a complex system. He highlights many factors including the significance of integrating systems to support teachers as they transfer professional learning into professional practice.

Similar to the complex system of raising a child noted above, teacher learning is situated within both a person and context and, given the number of variables there are within each, should be considered a complex system rather than an event (Opfer & Pedder, 2011). Perhaps this is where many of the previous linear models have failed: they have considered teacher learning as one off, or repeated events rather than an iterative process where new information is assimilated into the existing systems, tested, and adapted. According to Clarke and Collins (2007) there are five main characteristics of complex systems: they are networked rather than hierarchical; feedback loops allow messages to come back to their origin; they self-organising with the ability to change to information at a local level; they embrace rather than repel disequilibrium; and they are nested (that is, they are often systems within systems all interacting with each other) (Clarke & Collins, 2007). Complexity theory seeks to integrate different individual systems within an overall system as a nested model, recognising that changes in individual systems impact upon all the others and the system as a whole. Clarke and Collins (2007) apply complexity theory to the study the practicum of student teachers. They argue that applying the five characteristics of complexity to the practice of student teachers allows teacher educators to better understand and support them to develop into more rounded and critically reflected professionals.

When applied to teacher learning, Opfer and Pedder's nested systems includes the individual systems of the person (teacher), context (school) and learning of the teacher(activity) are integrated into a complex system. They (Opfer & Pedder, 2011) argue that by considering teacher learning as a complex system, researchers will be better able to identify the reciprocal influences that the teacher, school

and learning activity have on one another. Researchers will also be able to identify patterns that arise, with the identification of patterns being seen as a key outcome of complexity theory (Clarke & Collins, 2007).

An example of complexity theory being applied to teacher learning is shown in Figure 3 below from Keay et al. (2019, p.131):

Figure 3: complexity drivers of a recursive professional learning process (Keay et al., 2019)

Unlike hierarchical systems, networked systems allow elements to travel in many different directions. A recent example where we were acutely aware of a networked rather than hierarchical system was the world's response to the Coronavirus pandemic. Governments, recognising that people could transmit the virus through their networks, sought to contain it by limiting human interactions (Scottish Government, 2021).

Another key feature of complex systems is feedback loops (Snyder, 2013). The non-linear nature of the network allows messages to loop back to their original source and can provide an opportunity for learning. This feedback loop has proven very

useful in the knowledge economy example, Dynamic Transfer Knowledge Capacity (Parent et al., 2007), mentioned above, where the testing and re-testing of ideas is a refining process. Within this feedback loop identifying what does not work is equally important as identifying what does, allows testing of ideas across complex systems ensuring resources are not squandered developing ideas which will not work.

Complex systems are also self-organising, having the ability, at the individual system level, to change according to information it receives. This means the overall system is constantly evolving itself and can never be fully known or controlled. This is particularly relevant within the Dynamic Systems Approach of Thelen and Smith (1996) above where the subject of their study, the child, assimilates the knowledge received and this is added to their overall development. Their development, however, cannot be fully known or controlled.

The final aspect of complex systems which is different from many other systems is that it thrives on disequilibrium. A complex system embraces and adapts in chaos, reorganising itself in a form that is better suited to the new environment. Song et al.'s (2016) work on genetically modified crops above is an example of where the disequilibrium is seen as being something which will help them develop better, more resistant crops able to adapt to different environments.

According to Strom and Viesca (2021) viewing teacher learning as a complex system is an 'ethical imperative'p.209. Recognising teacher learning and practice are entangled with the person of the teacher; by considering learning as a complex system teachers have the capacity to disrupt the 'inequitable educational status quo'p.222. As teachers transfer learning into practice, they can challenge old paradigms of thinking addressing injustices of class, race, language, ability, and gender expression (Strom & Viesca, 2021).

My dissertation relates to the potential application of a particular complex model to teacher learning. My research considers whether the DSMRI could usefully be applied to teachers' professional learning in my school thus gaining insights to such

learning and how it could be usefully applied to my professional practice as a headteacher. The next section explores the model in greater depth, considers how it has previously been applied, and suggests future avenues of exploration of the model.

4.3 Kaplan and Garner's Dynamic Systems Model of Role Identity

The Dynamic Systems Model of Role Identity (Kaplan & Garner, 2017) provides an example of a complex dynamic systems approach to identity which illustrates the interconnectedness of the person (in terms of both personal and professional identities), context and activity. Garner and Kaplan's Dynamic Systems Model of Role Identity (DSMRI) is based on the concept from the sciences of a complex system and, for them, it is a way to support and understand identity and change in different arenas. Of relevance to my study, the DSMRI was applied to science teachers' learning both for an individual teacher and a group of science teachers all of whom participated in a specific learning experience (Garner & Kaplan, 2019; Kaplan et al. 2019)

Garner and Kaplan write:

> A complex system is one that includes many components that interact with one another; the term dynamic in complex dynamic systems reflects the fact that such systems act and change over time in response to changing conditions and parameters, called perturbations (Van Geert and Steenbeck 2005). Unlike mechanical input-process-output systems that tend to behave uniformly when conditions remain constant, complex systems manifest several features that result in adapt-ability and resilience, as well as in the unpredictability of behaviour. Complex systems are made up of multiple, interdependent components that interact in nonlinear ways (Garner & Kaplan, 2021, p.290).

The DSMRI relates in particular to understanding identity as a complex dynamic system. A complex dynamic system has five main characteristics as defined by Clarke and Collins (2007): networked rather than hierarchical, feedback loops where learning occurs by way of many points rather than a single location, nested (containing systems within systems), disequilibrium (creating capacity for change) and self-organising (pp.163-4). The DSMRI (Figure 2) considers role identity as a *networked* system of interdependent elements which are constantly interacting with one another causing change to occur and influencing role identity through f*eedback loops.* As the elements of the model are contained within the self of the teacher it is by nature *self-organising* with high levels of plasticity to accommodate intra-individual change. The *nested* nature of the model is evident in the diagram below where layers of interconnected elements are represented.

An individual teacher's identity is therefore impacted by each of these elements constantly as the teacher adapts and assimilates both positive and negative responses to factors within each of the elements of the model. An individual acts and adapts in their professional role, never reaching stasis: professional identity is in a 'continual state of 'becoming' with behaviours constantly emerging' (p.2037) (Kaplan and Garner 2017).

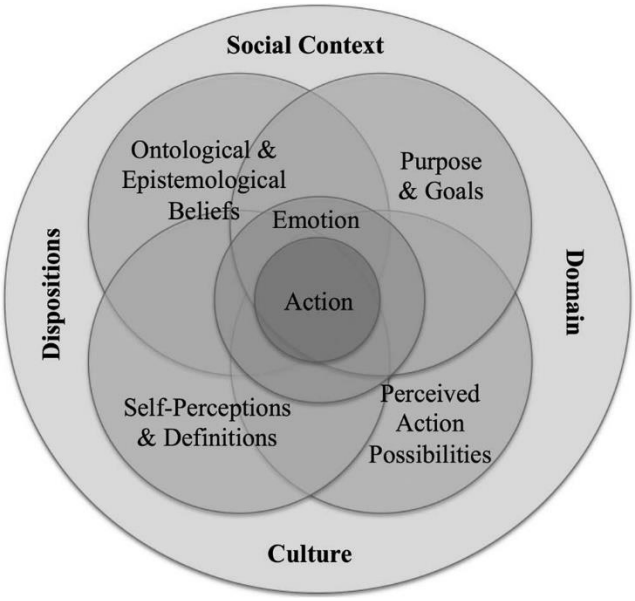


Figure 2: The Dynamic Systems Model of Role Identity (Kaplan and Garner 2017)

Figure 2 (above) indicates the different elements of the DSMRI. To gain a clearer understanding of the model, I will consider each element, beginning with the core before looking at the outer layer. I will then locate them within the context of wider literature (Section 4.4) and within the context of this study, teachers' professional learning in Scotland (Section 4.5).

Given the complexity of the model, the technical language used, and potential for misinterpretation of what was meant by each element, I wanted to provide definitions for each element for research participants (Appendix 1). Prior to sharing my interpretation with participants, I contacted Joanna Garner and Avi Kaplan to discuss my understandings and definitions of their model. I received feedback from them around whether they were comfortable with my definitions. A comparison of Avi Kaplan's feedback with my model (Appendix 2) demonstrates how closely aligned these were. In section 4.2.1 and 4.2.2 below I explore the definitions of each element.

4.3.1 Exploring the core elements of the model

The nested system of the DSMRI has three interdependent layers. Emotions and actions are shown at the core of the DSMRI. The next layer of elements within the model relate to aspects of role identity: ontological and epistemological beliefs; purpose and goals; perceived action possibilities; self-perceptions and definitions. Emotions are connected to each of the other elements and, whether the emotional response is positive or negative it impacts the each of the interconnected elements of the actor as they develop their role identity. As within other complex systems, a change in one element will affect each of the other elements and, in this system, the actor themself (Kaplan & Garner, 2017). Whether as an individual or part of a community, at the heart of the DSMRI is the acknowledgement that all the outer elements, and the emotions associated with them, influence individual actions.

Kaplan and Garner (2017) describe the actions as the 'anchor' for the individual's role identity and as such it 'feeds back into the role identity and influences future iterations of the role' (p.2040). The elements of the DSMRI are described in the 2017 paper but also both described and applied to the professional learning of a science teacher in their 2019 paper (Garner & Kaplan, 2019). Within the following sub-sections I will describe how Kaplan and Garner define each of the elements of the DSMRI from their 2017 and 2019 papers with the acknowledgement that there is a constant adjustment of each of the elements due to the dynamic, complex relationship that exists between each of elements of the model.

4.3.1.1 Teachers' ontological and epistemological beliefs

This element pertains to the knowledge learned both through formal education and informal learning and the associated beliefs the individual holds about the role that they occupy. This knowledge and beliefs shape the ways in which the teacher believes they should behave within their role in a given context. An application of this in the life of a science teacher was the teacher's belief that a student would succeed if the student put in effort to learning scientific facts. This was in contrast to the teacher's initial response to enquiry-based learning in science. The teacher was less inclined to implement enquiry-based learning as they as did not know if it would result in positive outcomes for students (Garner & Kaplan, 2019).

4.3.1.2 Purpose and goals

This refers to the individual's 'knowledge and endorsement of an overall purpose for their role' (Kaplan & Garner, 2017, p2041). For Kaplan and Garner (2017) the more clearly defined the purpose is and goals are the more likely the individual will feel success in the role. This sense of achievement of goals within a given purpose is aligned to the emotions the individual experiences as they fulfil their purpose and is therefore linked to the individual's motivation within the role.

4.3.1.3 Perceived action possibilities

This is defined as 'the actor's knowledge and perception of behaviours available to them in the role' (Kaplan & Garner, 2017, p.2041). This is the sense of agency the

individual has when occupying the role influenced by both their behaviours and associated emotions. By identifying certain behaviours and actions as being appropriate for the role the individual also identifies other behaviours which are considered 'inappropriate, ineffective or impossible' (Kaplan & Garner, 2017, p.2040).

4.3.1.4 Self-perceptions and definitions

Within the DSMRI this element is concerned with how the individual knows themself in the role that they occupy (Kaplan & Garner, 2017). Included within this knowledge is self-efficacy which is linked to the above points around goals and agency. It is also aligned with the social groups the teacher sees themselves belonging to i.e. gender, religion, ethnic and other demographics (Garner & Kaplan, 2019).

4.3.2 Domain, social context, dispositions, and culture

The outer elements of the DSMRI influence and impact the core elements and therefore also the shifting identity of the teacher as they undertake learning. They are viewed as the system's 'control parameters' which impact the system linking it to the ways in which water is impacted by temperature and pressure (Garner & Kaplan, 2019, p.13). The following sub-sections explore what Kaplan and Garner mean by: domain; social context; dispositions and culture.

4.3.2.1 Domain

In the model, four elements are assumed to be domain specific (that is located within a particular domain). These are social context, domain, culture, and disposition. In their 2017 paper, which considers role identity more broadly, Kaplan and Garner align this to the 'school, work, family; science, humanities, social science' (2017, p.2041). In their 2019 paper, however, when applied to a specific teacher, domain is usually preceded by 'subject' and for the 2019 study the domain of the teacher is as a teacher of science. Kaplan and Garner's research has focused on secondary teachers and for them the domain relates to subject

specialisms (e.g. science or social sciences). My research however is based in a Primary school where teachers are required to teacher all subjects to a single class and for them the domain becomes more closely linked to the class of children they are teaching.

4.3.2.2 Social context

Within their paper, Kaplan and Garner (2017) link the social and cultural contexts into one term: 'social-cultural context' (p. 2041). However, within the model above these are separate. In exploring this further in their 2019 paper they align this to the particular place in which the teacher lives and works. As my research was undertaken during the unique set of circumstances caused by the global pandemic this aspect of the DSMRI took on a particular relevance with the social context had a very tangible impact on the self of the teacher.

4.3.2.3 Dispositions

Dispositions, unlike the other three external elements of the DSMRI are considered intrinsic to the individual. Kaplan and Garner (2017) define these as being the 'temperament/traits, unconscious motives, repressed emotions, conditioned contingencies' (p2041). These dispositions are unique to the individual and may influence the individual's openness to or resistance towards change (Kaplan & Garner 2019)

4.3.2.4 Culture

Within the DSMRI this is defined as the accepted way in which things are done within a particular context. The cultural norms of a particular learning environment can impact the learning. For example, during the science teacher's professional learning experience he found that the culture during his intensive training was one which encouraged him to be open to new ideas rather than insisting that he took them on board. Due to this culture, he stated that he was more likely to 'buy into the approach' (Kaplan & Garner, 2019, p.22)

4.4 Application of the Dynamic Systems Model of Role Identity to teacher professional learning

Since developing the DSMRI, Kaplan and Garner have applied the model to several different learning contexts, including tracking the learning journey of an individual science teacher (Garner & Kaplan, 2019), a group of science teachers (Garner & Kaplan, 2021) and the experience of high attaining high school students (Kaplan et al., 2019). It has also been used to evaluate teachers' professional development (Garner & Kaplan, 2021) with proposals for how dynamic systems models can also be used in wider educational research (Kaplan & Garner, 2020). I believed the DSMRI may be a suitable model for my study into teacher learning therefore it is beneficial to examine two of these studies in some depth: Garner and Kaplan 2019 and 2021.

Given the professional learning focus of this dissertation the application of the DSMRI to the learning of a science teacher in the 2019 paper is of particular interest. Set in the United States, the teacher participant (Pat) is a 'veteran' science teacher. Over the past few years in the US there has been a move in science teaching towards more a more enquiry based, 'student-centred' learning. However, despite the policy drive for change in practice pedagogy has remained the same due to 'pedagogical discontentment' (Garner & Kaplan, 2019, p.16). Pat was participating in a summer school Professional Development (PD) which sought to develop more of an enquiry-based approach and although he was a willing participant his initial data suggested that his current pedagogical practice was more traditional in format. He was interviewed before, during and after the PD. His responses were analysed against the elements of the DMSRI. From the analysis it was clear that Pat's identity as a teacher was intrinsically linked to his experience as a learner/PD participant within the context of science. By examining the tensions of these and providing Pat with opportunities to make connections between his identity as a teacher and learner/PD participant Pat's learning was deepened and he became committed to changing his pedagogy and identity as a teacher from one who was very focused on data and formulae to a teacher who was more enquiry-based both for himself and his students.

The model was also applied to a cohort of science teachers participating in a similar Professional Development (PD) summer school (Garner & Kaplan, 2021). Like the study above, this research examined the responses of science teachers to PD which was focused on changing pedagogical practice towards more enquiry-based methodology. The summer school lasted eight days and at the end of each day participants had time for written reflection which included the completion of a questionnaire using a modified version of the 'Pedagogical Discontentment Scale' (Garner & Kaplan, 2021, p.239) which was collected as data for analysis. This enabled insights into the experiences of the teachers whilst participating in the PD activity, allowing for a deeper analysis of factors which impacted upon the changes in participants. Garner and Kaplan argue that teacher learning is complex and non-linear, and that several factors (including relational and content factors) can have an impact on the effectiveness of professional development. This means that the activities and participant responses to them are '*unlikely to be replicated from one institute to another or from one cohort to another*'(Garner & Kaplan, 2021, p.312, original emphasis).

The DSMRI is not without its limitations as within the model there is the acknowledgement that both external and internal factors have an influence upon identity and learning (Kaplan & Garner, 2017). Therefore, there will never be a direct correspondence between one individual or group and another. With every individual, set of relationships, nuanced change in context, or indeed the impact of time, there is change. Change in even one element has a potential impact upon an individual's role identity. The DSMRI seeks to capture the nature of this change and support helpful insights into teacher learning which go beyond previous models of professional learning.

4.5 The DSMRI as it relates to wider understandings of teacher professional identity and learning

The role of emotions is closely linked to concepts of identity in the DSMRI. Research on teacher professional learning acknowledges the significance of emotions in teachers' engagement in and response to professional learning (Datnow, 2018; Day & Lee, 2011; Day et al., 2007; Kennedy, 2016). There is a

developing body of work surrounding the way in which teachers respond to the emotions of others i.e., children and parents (Evers & Kneyber, 2015; Hargreaves, 2000; Jilink et al. 2018; Kyriacou, 2007) yet the emotional aspect of teachers' professional learning can be overlooked (Geijsel & Meijers, 2005; Korthagen, 2017).

The emotional life of teachers has been studied quite extensively in recent years, in particular the ways in which teachers' emotional states can lead to burnout (Aboagye et al., 2018; Jackson et al., 1986). New models are being developed which seek to unify the emotional, social, and cognitive aspects of teacher learning (Datnow, 2018; Golombek & Doran, 2014; Korthagen, 2017). The DSMRI is one of these models, seeking to embrace and combine the many interconnected aspects of teachers' professional identity role that may have an impact on their learning.

The emotional lives of teachers have proven significant in teacher retention and satisfaction with their role. In their work around teacher attrition rates and burnout Ryan et al. (2017) found a direct correlation between policies which have increased accountabilities to teachers leaving the profession. However, one of the insights of this study was that teachers who felt more emotionally connected to their teaching environment were less likely to be impacted than those who did not report such connection (Ryan et al., 2017). Korthagen (2017) also emphasises that, to ensure effective teacher professional learning, there should be a focus on teachers being part of connected communities and these should be linked to the person of the teacher. He suggests that, during professional learning activities, consideration should be given to what teachers 'think, feel, want, what are their ideals, what inspires them, what kind of teachers do they want to be' (Korthagen, 2017, p.399).

Given the significance of teachers' emotions for their professional development, it is important that those tasked with supporting and developing teacher professional learning display emotional intelligence (Azorín et al., 2019; Fackler & Malmberg, 2016; Hartley, 1999; Leithwood et al., 2019). Headteachers and others responsible

for supporting teacher learning must create and develop supportive communities of teachers. Ensuring that all teachers are included as part of this community is a complex task as individual teachers' identities are continually developing (see Figure 2 above).

The DSMRI also highlights the significance of beliefs: a key part of a teacher's identity is what they hold to be true about themselves, the nature of learning, and their students. Teachers, and those responsible for supporting teacher learning, hold ontological and epistemological beliefs about a range of professional areas including: beliefs about children and young people; beliefs about teaching; and beliefs about the purposes of education (Biesta et al., 2015). Professional beliefs may change over time and with experience (Eraut, 2000) but their impact on teachers' behaviours continues (Kagan, 1992; Lavigne, 2014). The ontological beliefs of teachers are what they believe to be reality(Crotty, 1998). The epistemological beliefs of a teacher relate to what they know about that reality (Arner, 1972). These beliefs are particularly significant as they can have an impact on pupil outcomes (Coe et al. 2014; GTCS, 2021a).

Also, it is through these beliefs that teachers interpret new knowledge and experiences (Pajares, 1992) with beliefs guiding and motivating behaviours and actions (Bandura, 1986). One of the most significant ways in which the ontological and epistemological beliefs of teachers influences their behaviours and practices, is their beliefs around children and young people. Believing that your teaching can have a positive impact upon children and young people's learning strikes at the core of what it means to be a teacher (Biesta, 2015) and is intricately linked to purpose and goals which we will explore later in this chapter. However, beliefs are not fixed. Perryman & Calvert (2019) suggest that, in the first few years of teaching, beliefs about children and young people change and this can affect teacher confidence and motivation as the complexity of the teaching and learning process and associated workload is comprehended. Teachers constantly have new groups of children and young people to work with, and teaching strategies and resources that worked for one set of learners may not work for the next. This may lead to beliefs needing to change or be adapted, and this can result in

disillusionment for some teachers, leading them to leave the profession (Perryman & Calvert, 2019). Lavigne (2014) suggests that teachers who can adapt their beliefs in a positive way more likely to remain in the profession.

Within the DSMRI, the dispositions of teachers are also seen as important to identity and learning. The model sees dispositions akin to temperament and ways of being (Kaplan & Garner, 2017). This relates to the 'self' discussed in other literature that is part of the teacher's personal and professional identity (Beijaard et al., 2004; Geijsel & Meijers, 2005). It also relates to their sense of themselves as a professional learner (Tait-McCutcheon & Drake, 2016; Wall & Hall, 2017). These personal dispositions influence a teacher's role identity and may have a significant impact on their approach to professional learning (Hodkinson & Hodkinson, 2004; Kyndt et al., 2016). Also, having to act or behave in a way which conflicts with a teacher's role identity can cause the individual to experience negative emotions or tension (Ball, 2003; Evers & Kneyber, 2015; Priestley et al., 2015b). On the other hand, acting in a way which is in tune with the other elements such purpose and goals can be a motivation for teachers, encouraging them to continue to develop and learn (Osman & Warner, 2020).

The challenge for teachers, and those responsible for supporting their professional learning, is to ensure that the actions of the teacher arising from professional learning are motivating and affirming. This has the potential to create a virtuous cycle of development where effective learning episodes build on one another, leading to affirmative emotions, which result in positive interactions with the other elements of the DSMRI. Thus, this sense of teacher efficacy is a significant factor in the effectiveness of teacher learning (Durksen et al., 2017; Ingvarson et al., 2005). Fackler & Malmberg, 2016 argue that school leaders have a pivotal role to play in encouraging self-efficacy which if supported can have a positive impact on student outcomes.

Other literature also supports the idea that school leaders have an important role in creating and maintaining a school culture which supports teacher learning. Korthagen (2017) asserts that teacher learning should be considered a complex

process with the identity of the teacher a crucial factor in the process. His proposed model 'professional development 3.0' integrates the person, practice, and theory. However, ensuring teachers learn within his model requires, 'deep cultural change'(Korthagen, 2017 p.400). Creating and maintaining a collaborative culture is a significant factor with current thinking in teachers' professional learning (Day & Lee, 2011; Hargreaves, 2019; Philpott & Oates, 2017a; Wall & Hall, 2016) with the acknowledgement that the culture of the school can have both a supportive and inhibiting impact on teacher learning (Hargreaves, 2019; Kennedy, 2011).

In relation to a teacher's perceived action possibilities, literature acknowledges that possibilities for professional action changes over time as teachers build up a wider range of pedagogies (Hargreaves & Fullan, 2012). The ability to act or behave in a way which aligns to one's knowledge at the time can be considered the 'agency' of the teacher (Biesta et al., 2015; Priestley et al., 2015). Teachers can often feel their agency is challenged by reforms or innovations which are externally imposed (Buchanan, 2015; Vähäsantanen, 2015). However, as policy makers have discovered, truly little change can happen without teachers being willing to apply new knowledge and behaviours within their classroom (Priestley, 2011). This is an interesting dichotomy where teachers view their agency threatened by external factors and pressures of policy (Wills & Sandholtz, 2009) with policy makers frustrated by the lack of progress with curricular reform due to lack of policy implementation by teachers (Shirrell et al., 2019).

4.6 The DSMRI in the Scottish context and in the context of my study

For teachers, their role identity is not only shaped by their own perceptions and definitions of it, but also by the perception and definitions of others. Their role identity is also shaped by the professional context they work in, the professional standards they must uphold, together with expectations for professional learning (see General Teaching Council for Scotland (GTCS), 2012a). As previously discussed in section 2.2.2 the Donaldson Report (2011) has been a significant policy document for teacher learning in Scotland, the only time the notion of 'feelings' appears within it has negative connotations where teachers feel lacking in

knowledge, under-prepared, unqualified, or unsupported (Donaldson, 2011). Within the various GTCS Standards there is little mention of emotions of teachers. In 2012 there were three Standards: initial qualification; career-long professional learning; and leaders and managers. Within these it was not until the Standards for leaders and managers that the notion of learner emotions appears as a priority, but within this context 'learners' are children or young people rather than teacher colleagues (GTCS, 2012). From 2021 there were five rather than three Standards and within these taking cognisance of the emotions of 'learners' were seen as key to being an effective teacher in Scotland. Within both the 2021 *Standard for Middle Leaders* and the *Standard for Headship* however there is a shift where the 'emotional intelligence' of the leader is an illustration of the way she will demonstrate her professional responsibility and 'Fully understand and demonstrate self-awareness and inspire and motivate others' (GTCS, 2021a, np).

The skills, behaviours and knowledge needed by teachers to effectively teach children at various stages in their primary school journey have been acknowledged in literature (Hall & Wall, 2019; Hargreaves & Fullan, 2012; Kyriacou., 2007) and in recent years there has been a particular emphasis on teaching in the early years (Campbell-Barr et al., 2014; Stephen, 2006, 2010). Despite this acknowledgement in academic literature the impact of the domain in terms of the stage a primary school teacher is teaching, or the curriculum area, is not reflected within policy such as the GTCS Standards (2021) or the *National Improvement Framework* (2019). In the extensive review of teacher Continuing Professional Development, a major influence on the Donaldson (2011), there was no mention of the significance that the class or subject being taught had an impact upon teachers' professional learning (Menter et al., 2010).

However, there are bodies of evidence round many subject areas of the curriculum for example: maths (Boaler, 2015; Dowker, 2009; Munn, 2006); science (Keys & Bryan, 2001; Southerland et al., 2011); literacy (Ellis & Rowe, 2020; Fisher, 2018). There is a depth of research on how teachers' ontological and epistemological beliefs impact their behaviours and actions within mathematics (Bursal & Paznokas, 2006; Gill, et al., 2004; Macnab & Payne, 2003; Muis, 2016).

Mathematics is known to be an area where some primary teachers lack confidence (Macnab & Payne, 2003). Beliefs about mathematics impact upon confidence and effectiveness in subject delivery, and teachers' personal experiences of mathematics is linked to their beliefs about their ability to teach, and children's ability to learn the subject.

Bursal and Paznokas' (2006) study is of particular interest as it considers the impact of maths anxiety upon both pre-service and in-service teachers. In their study there was a correlation between teachers' maths anxiety and their confidence to teach maths. MacNab and Payne (2003) studied the attitudes of student teachers in Scotland and found equivalent results where some student teachers report mathematics difficult to teach, and something which worried them. This is important in the Scottish context because attainment in mathematics is currently used as a measure of the success of an education system internationally (OECD, 2015) and within the Scottish context (Scottish Government, 2016b). The fact that teachers' ontological and epistemological beliefs have such a significant impact on their confidence in teaching mathematics is a challenge for those policy actors (headteachers, local authority officers and political figures) who are deemed accountable for the improvement in attainment in mathematics.

In terms of purposes and goals, for primary school teachers in Scotland, the purpose and goals of their identity is very varied. Not only are they responsible for teaching the curriculum but also for contributing to children's health and well-being through integrating children's services (Doherty & McMahon, 2007). The various GTCS Standards seek to formalise the purpose of the teaching profession with goal-setting part of the Professional Development and Review (PRD) process. This is aligned with a performative aspect of teacher identity where goal setting is viewed as a management tool to improve productivity (Latham & Locke, 1979). But the purpose and goals of teaching go beyond this limited, performative view, a view which can be destructive to the identity of the teacher (Ball, 2003). Teachers often have a wider view of their purpose, not being solely about achievement in examinations but a wider moral purpose (Lloyd & Davis, 2018). This sense of

purpose and achieving goals which contribute to social justice are often motivating factors in the formation and development of teacher identity(Biesta et al., 2015; Fairbanks et al., 2010; Pantić, 2015). As with other aspects of this complex model the goals of teachers change over time and with experience (Louws et al., 2017). It is important therefore, for those who create professional learning opportunities for teachers, to be cognisant of these changing teacher goals (Opfer & Pedder, 2011).

Creating a culture which supports teacher learning is included in the GTCS Standards. Headteachers and middle leaders are expected to establish and develop a culture which supports staff to learn (General Teaching Council for Scotland (GTCS), 2021d, 2021a) and fully qualified teachers being expected to contribute to such a culture(General Teaching Council for Scotland (GTCS), 2021b). That this culture should be a collaborative one is part of current policy direction (Scottish Government, 2018, 2019a). Garner and Kaplan's (2021) study is of interest here because they used the DSMRI to explore teacher learning for a group of science teachers on a summer school. The significant insight from this application was the importance of the shared learning context for the teachers who emphasised the relational aspect of the professional learning process. Although the DSMRI focuses on an individual's identity in relation to the role that they are fulfilling, it is interesting to note that the relational aspect was significant when teachers participated in professional learning. One could argue that this was true only because the study was an intensive summer school where participants were spending considerable time with one another. However, other studies have also shown that engaging in collaborative learning has proven to be an effective context for professional learning (Robutti et al., 2016; Thacker, 2017; Wong et al., 2014). In addition, Kaplan and Garner (2017) see social context as a frame for 'actors' (like teachers) to interpret and evaluate experiences and events in relation to their role and in relation to professional learning (Kaplan & Garner, 2017). There is an acknowledgement in literature that identity is influenced by and located within particular social contexts (Buchanan, 2015; Schutz et al., 2018). For teachers engaging in professional learning, the social context is identified as being a significant influencer (Christopher Day & Sachs, 2004; Doherty & McMahon, 2007; Koffeman & Snoek, 2019).

The social context for my study is schools in Scotland. With the current political significance of education being reflected in multiple policy documents (Donaldson, 2011; Education Scotland, 2015a; Scottish Government, 2019a) the social context is a major influencer on the learning and identity of teachers in Scotland. The recently revised *Scottish Attainment Challenge* (Scottish Government, 2022) maintains the focus on closing the 'poverty-related attainment gap'. This socio-political context is having a direct impact on teacher learning in Scotland, where government sponsored research projects are targeting the attainment of children in deprived areas. In these projects universities and schools are working together to address the poverty related attainment gap in literacy(Ellis & Rowe, 2020) and numeracy(Moscardini & Sadler, 2018).

The DSMRI can be related to key elements of educational policy in Scotland with policy emphasising the individual teacher and their professional development journey. The DSMRI acknowledges that a teacher operates within professional contexts and that learning with and from others is a key part of professional learning. Thus, the model aligns with recent policy and research emphasising reflective practice and collaboration in teachers' professional learning (Chapman et al., 2016; Donaldson, 2011; Mitchell, 2013). However, for many teachers, becoming and remaining a teacher is not only a career but a vocation (Day & Lee, 2011; Hargreaves & Fullan, 2012; Ping et al., 2018; Schutz et al., 2018; Trust et al., 2016). The vocational aspect therefore influences self-perception and how a teacher defines their role. Aspects of self-perception and definition are extremely complex as they go to the very heart of what it means to be a teacher and, like other aspects of 'self', they change through personal and professional experience (Hargreaves & Fullan, 2012). The GTCS recognises this in a limited way in the Standards. Rather than there being only one Standard for teachers in Scotland there are five covering initial teacher education through to formal managerial roles. However, given that these Standards are applied to all sectors of education for the lifespan of a teacher's career, they are very general and, combined with their inherent links to performativity, professional Standards such as these can have a negative impact on teacher professional learning (Lloyd & Davis, 2018).

4.7 Conclusion

In this chapter I have described the significance of teachers' professional learning within Scottish Education and the responsibilities I have, as a headteacher in a Scottish primary school, to ensure I support my staff in their professional learning. I am acutely aware of the role I have in either supporting or hindering such development and am committed to the former.

From the literature, and from my experience, the investment of time and money in many forms of professional learning has not necessarily brought about the desired changes in teachers' practice nor children's learning experiences. Having studied the various elements of the DSMRI and the interdependent nature of the model I believe it will provide a helpful framework for me to better understand the professional learning of teachers and, with this understanding, be able to better support the teachers in my school continue to develop and improve themselves as teachers.

Chapter 5: Methodology

5.1 Introduction

This chapter describes how I applied understanding of appropriate social sciences methodologies and methods to gain insight into the personal reflections of participants about teacher learning. I first discuss the methodology I used, clarifying the paradigm I worked with and why I chose this rather than another. I discuss how, by responding to data and context, I developed my questions and focus for investigation as my research progressed. I describe my research as an iterative process, adapting my interview questions and emphasis as my reading and data from initial interviews opened new and interesting themes to be explored (Stenhouse, 1975). I then discuss the methods of data collection and analysis (semi-structured interviews and thematic analysis) and my choice of participants.

As previously mentioned, my position as a headteacher in the school where I was conducting some of my research raised particular ethical considerations given the unequal balance of power in the researcher/participant relationship (BERA, 2018). When designing my research, it was imperative that I employed research methods which sought to address this concern recognising that, while I could mitigate against the impact of the power dynamic, I could not completely remove it.

5.2 The research paradigm: interpretivist action research

I am conscious that, when embarking upon their studies, a researcher must first consider themselves and the lenses through which they are conducting their research as these will impact upon the questions they ask and the interpretation of the answers they receive (BERA, 2018; Denzin & Lincoln, 2017). As a practitioner conducting research, I found the philosophical stances and numerous different paradigms with their associated challenges and benefits confusing, although thankfully I am not the first to face this dilemma(Mustafa, 2011; Seale, 2010). To guide my decisions about paradigms, I considered my research, what I intended to do, and how I intended to explore my evolving research questions. I was clear that I was looking for information, thoughts, and ideas from people and that 'the social

world can only be understood from the point of view of the individuals who are part of the ongoing action being investigated' (Cohen et al., 2000, p.19). My intention to analyse teachers' thoughts, opinions and experiences of professional learning aligned most closely with an interpretivist paradigm (Higgs et al., 2011; Seale, 2010).

For me, using an interpretivist approach was key to allowing the data to inform my study. By using this approach, I am acknowledging my willingness to explore different avenues in my research, either through reading or through interviews (Fraenkel et al., 2012). As my research progressed, this ability to respond to the context, the views expressed through interviews, and my reading became significant for my dissertation study. Blaikie and Priest (2019) write that, in an interpretive study,

> the inquiry process plays out as a series of reflexive cycles. Each cycle involves six important interwoven activities of sensitizing, questioning, exploring, analysing, theorizing, and checking. These activities commonly produce issues for the researcher to further explore, cross-check, qualify, elaborate and/or better illustrate or define when next engaging with participants. In this way participants and researcher act as coproducers of data and meaning (p.418).

I chose to gather qualitative data within an interpretivist approach despite there being relevant quantitative data which I could use. There are data gathered on numbers of teachers completing various aspects of professional learning used by government to demonstrate improvements in the profession (Scottish Government, 2019) which could be analysed statistically. However, I was interested in exploring the lived experiences, thoughts, and opinions of teachers in my school and others with a responsibility for supporting teacher learning, and an interpretative Practitioner Enquiry was an appropriate way to do this. I wanted my learning to develop by considering the views of people: data gathered through large-scale performance measures would not give me this insight.

I did consider the use of questionnaires to gathering the thoughts of teachers and others within my study. Questionnaires have been used effectively in educational research to support school leaders in examining school culture and readiness of staff to take on new practices (Brown & Zhang, 2017). However, the very act of designing a questionnaire would cause me to move toward defining priorities for participants in my research rather than being led by the participants themselves (Menter et al., 2011).

Within the interpretivist paradigm there are various frameworks which can be applied to the research design (Denzin & Lincoln, 2017; Grant & Osanloo, 2014). As I am a headteacher reflecting on and seeking to develop an aspect of my own practice, I describe my study as a particular form of Action Research: *Practitioner Enquiry* (Baumfield et al., 2013). Practitioner Enquiry combines Schön's (2008) thoughts on how, by examining their practice, teachers gain understandings which would usually be considered implicit or assumed. Baumfield et al. (2013) relate this approach to Dewey's thoughts on enquiry, where the individual searches for knowledge beyond immediate individual experience.

An aspect of Practitioner Enquiry (PE) which particularly resonates with me as an experienced headteacher, is its ability to 'deepen understanding by throwing up new questions' (Baumfield et.al, 2013, p.2). As I approached my study, I had to be willing to allow my beliefs, and biases, built up over many years, to be challenged. PE provided a framework through which I could examine my practice as a headteacher supporting teacher learning and how through applying my newfound insights I could potentially improve my approaches to strategic planning for my school.

A key consideration for me when selecting an appropriate framework and design was in relation to the power dynamic (Gaventa & Cornwall, 2015). My research is focused on teachers' learning, located in the main in school where I teach. As a qualitative enquiry it is bounded within the parameters of Practitioner Enquiry which I hoped would inform the learning experiences of practitioners in one Scottish primary school. By defining this as a Practitioner Enquiry, where I am the

practitioner conducting the enquiry, I am acknowledging that it has particular limitations and, although some principles or insights may be applied to other contexts it is not necessarily the main purpose of this research. In considering appropriate methods for my research, I had to be open to, and purposefully implement, practices which would facilitate honest responses and potentially challenges from teachers who I lead.

5.3 Practitioner Enquiry as stance

Conducting research on the practice of professionals is a complex process. The appeal for me of the DSMRI is that it sought to represent what I view as the complex process of teacher learning in the form of an interrelated dynamic model. When considering appropriate methods to approach my study I had to ensure that the methods would support me in my role as full-time headteacher and part-time researcher. Most published research in education is undertaken by academics looking to contribute to academic knowledge (BERA, 2017). The primary purpose of my research was to contribute to my own knowledge and to influence my practice as a headteacher. It was underpinned by academic rigour, but this was not its purpose it had a much more tangible purpose of contributing to my knowledge to enable me to better support the teachers in my school with their professional learning.

Practitioner research is increasingly recognised as having a valuable and sustainable contribution to the field of educational research (Woodrow & Newman 2023) as it seeks to intertwine research and the learning sciences (BERA, 2017). Enquiry can be viewed in two ways: as stance and as a project. Enquiry viewed as stance is often linked to social justice, encouraging teachers question practiced norms and giving teachers and informed voice (Hall & Wall). Enquiry as a project however, is often seen as a one-off event which either proves or disproves something (Hall & Wall 2019). My approach to Practitioner Enquiry (PE) sought to embrace both *stance* and *project*. My questions allowed me to explore the views of teachers and others giving me an informed view of why I should develop different practices for teachers' learning. By placing my enquiry within the boundaries of my dissertation I became a project with different phases, form, and structure.

Rather than PE I could have located my study within a more traditional form of Action Research with research being conducted as a project. Action Research has been widely used within education often to improve pedagogical practices of teachers (Nind & Lewthwaite, 2018). As a headteacher I am one step removed from the pedagogical practices of teachers. My role, pertinent to this study, is in supporting the learning of teachers. It is my professional practice that I am examining and, although the process of enquiry aligns with that of action research, this seemed to align solely within the *project* aspect of enquiry rather than the *stance*.

I could have conducted *practitioner research* as described by Cochrane-Smith and Lytle (2009) where I seek to challenge the inequities of the current education system. Their view of inquiry as stance is one which seeks to empower teachers by ensuring that nothing, other than that produced by or with teachers, has a place in the education system. By encouraging teachers to be constantly questioning they are seeking to bring about a more equitable system by railing against the neoliberal dominance of the purpose of education to provide for the knowledge economy (Cochrane-Smith & Lytle, 2009). Although I share their views around the purpose of education being higher than that of neoliberal performance driven measures, I am mindful of my context and of the time-limited nature of my study. Having enquiry as *stance* therefore without the bounded realities of the *project* aspect of my study would cause me to lose focus on considering ways to support teachers in their learning within the context of school improvement.

5.4 Ethical considerations

Behaving in an ethical manner is a prerequisite to high quality social science research (Baumfield et al., 2013; The National Academy of Academics, 2015). In addition to the usual requirements for Social Sciences research I was a headteacher conducting research with some teachers within my school. This meant there was an unavoidable power relationship which I had to consider throughout my engagement with these participants.

As six of the participants were employees in two different local authorities, and I was asking them to comment upon their work I had to seek approval from the relevant Heads of Service within each of the local authorities (Appendix 3) who have the role of protecting their employees from unsolicited or unwelcome additional workload. This can often be a difficult hurdle for many researchers (Spacey,et al., 2020) as a headteacher I understand how this 'hurdle' protects me from being inundated with requests for my knowledge, experience or time. I was in a privileged position of being granted access to local authority employees and others who were freely giving me their time, sharing their thoughts and experiences with me I had to be sure that everyone knew involvement in this research was entirely voluntary and that they were free to withdraw at any point in the process (Blaikie, 2019; Creswell, 2017; Shaw, 2008).

Behaving ethically impacted my choice of data gathering (mapping) but also my decision to temporarily halt my research due to the pandemic. I knew that many of my potential participants were under unprecedented additional stress and that asking them to talk to me about their professional learning would have added to that stress and therefore unethical. My decision to re-start my research was guided by my first participant, HT (one of the headteachers who had been part of the original Lesson Study group). She contacted me in January 2021 and asked if I would like to chat to her as she felt she was in a good place, having established a new rhythm to working within the restrictions. This, being guided by the needs of participants, demonstrates my commitment to not only follow ethical guidelines but to behave ethically (Fraenkel et al., 2012).

5.5 Evolving Research Questions

I approached this research as a Practitioner Enquiry. This was the most meaningful stance for my research as I looked to develop my thinking as the research progressed (Blaikie, 2019). The ability to respond to circumstances afforded by Practitioner Enquiry was crucial, enabling me to successfully complete my research. The original title for my study was: *'What factors enable teachers' professional learning in relation to changing pedagogy and practice in*

mathematics when using Lesson Study?' As I discuss below, I chose to explore this question through interviews with teachers. However, having completed and transcribed the first interview I was drawn to elements of the teacher's experience which she described as 'scary' as she was 'out of her comfort zone'. As I reviewed this interview, in conjunction with my reading. I became interested in considering professional learning as a much more complex issue with multiple factors helping or hindering the process.

I began to form a new research question linking professional development activities and teacher learning, setting this within the current landscape of teachers' learning in Scotland:

- How does professional development influence teacher learning and relate to practice/ pedagogy?

The sub-questions I created were:

1. What are some of the key features of the post-Donaldson context of teacher professional learning?
2. What views of learning underpin teacher professional development and how does this link to policy and practice?
3. How do current forms of professional learning inform pedagogy?

However, as I read the transcripts and reflected on these questions and the literature around teacher learning, I evolved my thinking. Many of the examples or models of professional learning I examined did not consider the emotional responses of the teacher or the number of factors which affect these responses (Boylan,et al., 2018). As I thought about this, I researched models of teacher professional learning which echoed my growing understanding of this as being multi-faceted in nature. Rather than a clearly defined and exact model of teacher learning I began to consider more heuristic models which seek to support understanding of complex issues. I found several models in which a person's response to a given situation is understood heuristically. Examples include models that seek to understand a person's response to racism (Piwoni, 2022), moral injury

(Litz & Kerig, 2019) and community mental health support (Sundet et al., 2020). These models help with understanding the complexities and inter-connectivity involved in individual responses. In addition, all are person-centred, recognising that responses to situations will be individual (even though influenced by many different factors).

This dynamic view of teacher learning resonated with me, and I was interested to see if it would also resonate with teachers and others responsible for professional learning. If it did, I wondered if it would it be possible to support teachers, and others with responsibility for teacher learning, to understand themselves as teachers and learners in the professional learning process?

It was from this that my final research question was formed:

Can applying a psycho-dynamic model support understanding of teacher learning and, if so, what are the implications for practitioners, managers and others who have an interest in ensuring career long professional learning?

I then reviewed my sub-questions to create the final versions:

1. What are some of the key features of the post-Donaldson context of teacher professional learning?
2. Who are the policy actors that shape teacher learning?
3. What are the key features of the dynamic-systems model, and could it potentially be used an appropriate model to support understanding of teachers' learning?

5.6 Data collection

The interpretivist paradigm acknowledges the value of gathering qualitative data as a helpful method of deepening the researcher's understanding of the matter under investigation (Cohen et al., 2000). Initially I had a particular focus on mathematics teaching and was looking to analyse a specific method of teacher professional learning, Lesson Study (Coe et al., 2014; Murphy et al., 2017). One full

round of Lesson Study took place as planned between September 2019 and January 2020. This involved three teachers, from three different schools teaching a lesson in rotation. Each teacher taught the agreed lesson to their class on one occasion, being observed by the others. This was repeated with time for planning and refining of the lesson between each taught episode. In February 2020 I completed the first interview and intended to complete the others, with teachers and headteachers who had participated and supported Lesson Study in March 2020. However, the restrictions of the pandemic brought this to a sudden halt.

Due to Covid, I was unable to pursue Lesson Study as a method of teacher learning. I therefore expanded my research to the broader field of teacher learning. I was eager to gather high-quality qualitative data which would add to my understanding of teacher learning from the view of the participants in my research. I therefore opted to conduct semi-structured interviews. Brown and Danaher (2019) describe semi-structured interviews as follows:

> those where the interviewer has prepared a list of topics to be explored, and questions to be asked, and follows that list during the interview but also ensures that the questions elicit open responses by the participants that enable lines of conversation to be developed in situ in ways that could not have been anticipated when the interview schedule was being planned (Brown & Danaher, 2019, p.77).

During the interviews, I hoped to achieve reciprocity and respond reflexively to participants (Galletta & Cross, 2013). To do this, I decided to ask more open questions in contrast to closed questions, which often have a limited set of correct answers. Open questions seek to provide respondents the opportunity to express their own thoughts and ideas. In semi-structured interviews, there is an expectation that the researcher will allow the participant freedom to answer through the effective use of open-ended questions, whilst sensitively entering into dialogue with the participant to clarify or expand on understanding of the participants' responses. The interview phase of my research began in February 2020 but due to the pandemic was not completed until June 2021.

Having decided to complete semi-structured interviews, I had to be mindful of the power dynamic when selecting an appropriate approach to data gathering. I was keen to allow participants, particularly where I was their line manager, as much influence over their data as possible while the data were being created. For example, in the early interviews I co-created mind maps (Buzan & Buzan, 2003) with participants. Starting with a blank page I wrote down participants comments in real-time, making links and clarifying meaning as the interview progressed. This afforded participants the opportunity to clarify their meaning, make links across responses ensuring that I was accurately reflecting their views. My original plan had been to conduct all interviews in this way through one to one in-person meetings where the participant and I co-constructed a map of their responses. However, due to the restrictions of the global pandemic I had to significantly adapt my methods as I had to move away from in-person interviews to on-line interviews.

From the outset, I was aware that data analysis as well as data gathering were crucial to my study. I therefore made digital recordings of each of the interviews. Digital recordings are helpful as they can be transcribed and capture what was said in an interview whereas my capturing in a written record is only the aspects which I consider significant. However transcribing interviews is not a neutral process (Oliver et al., 2005), so by recording the interviews with the potential of transcribing I was looking to afford myself a bit of a safety net. Whilst I believed in the potential for mapping to mitigate the power imbalance, I am a novice researcher and was unsure if I could accurately capture the participants' thoughts in real-time. Transcription can be seen as a 'chore' (Oliver et al., 2005, p.1273) as it is time consuming and labour intensive and as a part-time researcher, full-time headteacher I was unsure if I would have the time to complete the transcriptions. However, if I had not recorded the interviews, I would have had to rely solely on my mapping skills. As my study unfolded, I was grateful for my decision to familiarise myself with the recording and transcribing processes as, due to the pandemic, in-person map creation as part of data capturing was not an option, I was able however to use my mapping skills successfully for data analysis.

The pandemic also caused a considerable increase to my workload and that of my colleagues (Engzell et al., 2021; Lewin, 2020; OECD, 2020) and had a significant impact on my research. Time that I thought I would have for my studies was no longer available, and there was a reduced capacity for teachers to be involved in research on top of already increased workload pressures. In considering an appropriate data gathering approach I had to be mindful of the time available to me and to my participants, given that all of us were managing time very differently due to the pandemic. The teachers who were part of my Lesson Plan study were employees in two different local education authorities (one of which was also my employer). Part of the process of accessing teachers to participate in being interviewed as part of my study involved permission from Heads of Education within the local authorities. Ensuring I sought this permission is part of Glasgow University ethical protocols ensuring that there is no coercion of participants or undue pressure being put upon them as they take part in my research. The approval from each authority was given prior to March 2020 and the restrictions of the global pandemic. Other than the first interview the pandemic had a significant impact on data gathering as interviewing the teachers I had originally planned to involve was no longer possible. Not only did the pandemic alter my data gathering it also impacted my choice of participants.

5.7 Participants

Having described the methods used for data collection I will now outline the decisions I made around recruitment of participants and the iterative process of 'questioning, exploring, analysing, theorizing and checking' (Blaikie, 2019) allowing the issues that arose from the initial interview to inform my research. There is much debate around sampling and whether it should be considered for qualitative research(Sim et al., 2018). Given the way in which my research developed following my initial interview, I came to appreciate the benefit to me of not clearly defining participants at the outset as it allowed me flexibility, adapting who I asked to participant depending on the lines of enquiry as they arose.

As my research question altered and developed so too did my choice of participants. My focus remained on my school and how I could best support the professional learning of the teachers there. Within school my initial participant was the teacher who was part of the Lesson Study, who I interviewed in January 2020, and it was not until March 2021 that the other three teachers who had volunteered to be part of my study were interviewed. The process of being involved in the study was entirely voluntary. School staff knew I was undertaking an additional qualification, and I emailed to ask if anyone would be interested in talking to me about professional learning. The teachers who volunteered were at different stages in their careers, had differing levels of experience, providing a cross-section of the views of the wider staff team. As the research questions evolved over time, I recognised that my research into teacher learning would be richer if I were able to interview policy actors at various levels of the system who also had an interest in, or responsibility for, teacher learning. I was able to interview one person from each of the following: Headteacher; Quality Improvement Officer; Education Consultant; and a colleague with expertise in professional learning at national level. Although this is a small number of people, eight in total, it provided me with a variety of lenses through which I considered the subject of my research. The data gathered impacted my thinking about teacher learning, enabled me to develop a fuller response to my research questions. The data ultimately helped me to realise the intended purpose of my research: to better support teacher learning in my school.

5.7.1 Recruiting participants

When recruiting participants within my school, I was very aware of the existing power dynamics and was keen to ensure that no one felt pressured into participating. It was important that participating teachers did not feel they were in any way restricted in sharing their honest thoughts and feelings. I decided on the practical approach of mapping to reduce power differentials.

As part of the 'Open Studies' courses on the EdD programme, I had already trialled mapping as a way of gathering thoughts using semi-structured interviews with teachers in my school. Like my main research study, teachers were volunteers

who responded to an email sent to all staff explaining my study and what was involved. During the trial study, I was keen to see if staff would feel comfortable being honest and able to say things which might not be in line with my thinking. I was pleased to see that they did feel able to be honest in their responses: co-creating the maps to record the information they shared meant they were able to clarify, and place greater emphasis on, some aspects rather than others.

For my original dissertation study, I worked with two headteacher colleagues and a teacher from each of their schools. The headteachers were keen to explore whether Lesson Study was an appropriate form of professional learning for their school. During the Professional Development and Review process, they had identified staff who would be interested in taking Lesson Study forward. I too had a member of staff who was keen to be involved in Lesson Study and to work with colleagues in different schools. Of the three teachers who completed a Lesson Study cycle, I was only able to interview the teacher in my school (T1) because of pandemic restrictions. I also had to reorient my study because the restrictions made Lesson Study research impossible.

In the new study, I was keen to capture the views of teachers in my school but was aware that many were under extreme pressure, and I didn't want to add to this. I emailed teachers and asked for volunteers: three teachers responded. Two were newly qualified teachers (T3 & T4). They had only been in the school for a few months and had more limited contact with me due to the pandemic. Although I was their headteacher the relationship was less well developed than it would have been in non-pandemic times. The other participant (T2) was unable to come into school as she was shielding but was keen to contribute to my study. T2 was an experienced teacher and, unlike T3 and T4, we had worked together for several years. I knew from previous interactions that she would speak her mind freely, even if her thoughts conflicted with my own. I was fairly confident therefore that each of the participants would provide me with insights from their perspectives.

Behaving ethically was a priority throughout my study. I was always conscious, particularly with participants in my school, of the existing power imbalance (BERA,

2018). The power dynamic was something which, due to my role, was unavoidable. However, my use of mapping during Open Studies and in the first interview with T1, I was confident that I would not significantly influence their responses because the mapping enabled participants to clarify their thinking, check the accuracy of my note-taking, and add or remove things from what I had noted down. From our interactions and the ways in which participants, both in the OS trial and in the first interview with T1, clarified their thinking by adding to or taking away from what I had recorded I was confident I would not significantly influence their responses.

Throughout my study, when recruiting participants both within and beyond school, I ensured that I followed the University of Glasgow's ethical guidelines (University of Glasgow, 2022). All participants were issued with a participant information sheet (Appendix 3) outlining, amongst other things, the purpose of the study and their right to withdraw at any time. Everyone was also issued with a participant consent form (Appendix 4) detailing the agreement that we entered into regarding the information they shared with me. Finally, I developed two interview schedules one for participants within my school (Appendix 5) and one for those beyond (Appendix 6). These provided questions for each participant relevant to their role.

5.7.2 Participants beyond school

Part of my research question related to the impact of Donaldson and other policy actors. As a headteacher, and having worked as a Local Authority senior manager, I was very aware of others within the system who had an interest in, and commitment to, teacher learning. The decisions made at levels beyond the classroom have a direct impact on classroom practice (Christopher Day & Sachs, 2004) and these decisions are made by people at various levels within the system (I. Menter & Hulme, 2011). I was keen to gain insights from individuals involved in professional learning in roles beyond my own school.

Given that these interviews took place during covid restrictions I was limited in who I could access. The first participant external to my school was one of the headteacher colleagues who was part of the original Lesson Study. She was an experienced headteacher who was currently leading her third school as

headteacher. Each of the schools she led were very different ranging from a school of around 100 in the southeast of Glasgow to a school of 800 in a leafy suburb beyond the city. Headteachers are significant leaders within the education system in Scotland (Chapman, et al., 2016; Forde, et al., 2011; Leithwood, et al., 2019), and this participant (HT) played an important role in my research. She had a range of experience and had worked in different contexts from me. I was interested to discover the views of an experienced headteacher around teacher learning and to discover where her views aligned with or contradicted other participants. I had contact details for HT and, following the ethics processes as detailed above, she was willing to be interviewed over Teams, given we could not meet face to face.

For most schools in Scotland the next level within the system is that of the Local Authority (LA). Scotland is divided into 32 LAs which, within national guidelines, are responsible for the running of schools (McGinley, in Bryce et al. 2018). Each LA has officers with different responsibilities. I contacted a Quality Improvement Officers (QIO) in a local authority I had experience of working in. This QIO has responsibility for supporting teacher learning across their LA (including the learning of Newly Qualified Teachers). Given their area of responsibility, I believed their insights could help my research. QIO's perspective was interesting as they were responsible not just for the development of NQTs but also aspects of teacher and leadership development from Early Years through to Secondary. QIO provided me with a broader perspective of teacher and leadership development across my Local Authority.

Beyond the Local Authority there are other contributors to teacher learning at national level. These include universities, government bodies and independent consultants. The next participant I interviewed was someone who works as a consultant, facilitating teacher learning. Consultants in Scotland are employed by LAs or schools on an ad hoc basis, often with a particular focus. This consultant (C) worked with one of the largest consultant organisations in Scotland. C works freelance on a commission basis and was employed at the time to support teachers in developing collaborative learning in classrooms. By interviewing them I gained

the perspective of someone who works across Scotland, with practitioners from Early Years through to Secondary and who was not constrained by being linked to a particular LA.

My final participant (NE) had national expertise due to their previous positions as a leader of Continuing Professional Development (CPD). This individual had influenced policy in teacher learning as part of the national CPD programme and within Education Scotland. One of the challenges with interviewing people who currently occupy significant roles within the system is that they are often bound by particular allegiances or having to 'toe the party line'. As someone who had retired, NE was afforded greater freedom to express their views from their own perspective and was not constrained by being a government or LA employee.

Although I only had four participants beyond my school, I was able to gather a range of perspectives from these individuals who had relevance across the education system in Scotland, whom I interviewed in line with the ethical guidelines as detailed above. I was also able to access the perspectives of individuals in universities through a wide range of published materials in both journals and books. Although I did not interview university academics, I have included the thinking of many academics in Scotland throughout my dissertation. These include, but are not limited to: Christine Forde (Forde et al. 2016; Forde et al. 2013); Margery McMahon (McMahon et al 2018); Chris Chapman (Chapman et al. 2016); Gert Biesta (Biesta et al. 2015; Biesta & Tedder 2007); Aileen Kennedy (Kennedy 2005; Kennedy 2011; Kennedy & Beck in Bryce et al. 2018); Carey Philpott and Catriona Oates (Philpott & Oates 2017a & 2017b); and Kate Wall (Wall & Hall 2016 & 2017).

5.8 Interviews and interview questions

The timing of my study had an impact on the way in which I conducted the interviews. The first interview was conducted in-person in February 2020 as per my initial research plan, however, the next interview with the headteacher was not until January 2021 and was on-line using Teams rather than in-person. The

pandemic had influenced the ways in which many of us worked, including those in school. On-line and 'blended' learning were ways in which schools adapted the context around them (Engzell et al., 2021).

The next two interviews, in February and March 2021 were with T2 and T3 and were in person. As these were in-person interviews I was able to use my preferred method of data gathering, creating mind maps with the teachers where they were able to add meaning, clarify their thinking or address any misunderstandings as the interview progressed. This was particularly important given the power dynamic which existed between these teachers and me in my role as headteacher. In contrast T4's interview was on-line, this time using Google Meet, her preferred platform as she was in the 'shielding' category, unable to leave her home. Interviews with QIO, C and NE all took place between April and June 2021 on-line using the platform of the participants choosing: Zoom, Teams or Google Meet. This was challenging for me as the researcher as I had to familiarise myself with three different on-line platforms, but I was keen to be led by the needs of the participants.

To explore my research questions, I completed semi-structured interviews. Semi-structured interviews allowed me to gather data from participants either on-line or in person and as they were completed 1:1 could be done within the restrictions that were in place due to the pandemic. Having changed the scope of my enquiry I also had to alter the interview questions. I interviewed four teachers assigning each of them a simple code: T1, T2, T3 and T4. The other participants were also given a code to support de-identification: headteacher (HT); Quality Improvement Officer (QIO); Consultant (C); and colleague with national expertise (NE).

The first interview was with T1 and her questions were linked to Lesson Study (Appendix 4). Although the focus of my study moved away from Lesson Study the responses from this interview were pivotal in changing the direction of my study to focus on teacher learning in a wider sense. The interview questions for the other teachers were broadened, in line with the changes in my overall research questions and were more focussed on their views on their professional learning in

general rather than a specific professional development activity. The concluding part of the teachers' interviews was to show them the annotated visual of the DSMRI (Appendix 1) for comments which I added to the annotated model to support data analysis. The interview questions used with teachers are noted in Appendix 5.

As a headteacher I am very aware of my responsibility for both my own learning and for the learning of my staff team. When interviewing a headteacher colleague, I was interested if she too had the same approach and whether there were commonalities or differences between her own learning and the ways in which she supported the learning in others. The interview questions for HT (Appendix 6) therefore encompass both her learning and her responsibility for the learning of others. Like the teachers' questions above, and repeated in the other interview schedules below, this interview also included me capturing their views on the annotated DSMRI as a representation of teacher learning.

Although I had questions for each participant, I was very clear at the start of each interview that these were for guidance only and that I was happy to go with the conversation as directed by the participant. This was in line with both my methodological stance as a researcher looking to explore the views of individuals but was also critical due to the power relationship which existed (particularly with the teachers I interviewed).

5.9 Data analysis

When approaching data analysis I was faced with a dilemma. Informed by Braun and Clarke (2006) I was keen to develop themes as part of my analysis but their version of deductive coding was not working for me. I was looking for a way to make sense of my data, to allow it to speak and interpret meaning through the lens of the DSMRI. I felt as though I had hit a bit of a brick wall, analysing data captured both on-line and in person from a variety of people over an extended period of time, and during a global pandemic.

Data analysis is a crucial aspect of social science research, and I was keen to develop a system for data analysis which captured a sense of what participants had

said and to represent this authentically (Bryman & Burgess, 1994). To resolve this dilemma, I once again turned to mapping. I was keen to explore if mapping could provide a potential route to help organise data, a function more usually performed as it is being gathered (Wheeldon, 2010). However, maps have also been used to both gather and analyse data over different intervals (Mcgowen, 1999). On this occasion I used mapping as method of organising the data I gathered, whether that data had been gathered using maps or not. I mapped data from each participant onto a representation of the DSMRI and considered aspects of the data in relation to each of the different elements of the DSMRI.

I created a simple map (Appendix 7) with each of the sections aligned to the key aspects of the DSMRI. The inner circle related to emotion and actions. At each of the four arrows were: ontological and epistemological beliefs; purpose and goals; self-perceptions and self-definitions; perceived action possibilities. The four outer circles related to: domain; culture; dispositions and social context. I also included two other elements which were part of my overall research question: policy actors and specific references to *Teaching Scotland's Future* (Donaldson, 2011) given that this policy has been pivotal in shifting the focus in teachers' professional development. I also created space at the bottom for any interesting points not captured by any of the categories above.

Creating a map for each participant meant that I was able to identify key aspects and note which elements of the DSMRI which recurred or were more prominent that the others. All interviews were digitally recorded and transcribed using a simple line by line coding system. By organising participants' data this way, I developed a common system through which I could analyse data which had been gathered using different means.

HT's interview was more complex than the others. Each of the other participants focused mainly on themselves in one role, either as a teacher learning or as someone who supported teachers in their learning. For HT it was different as we discussed not only her own learning but also the learning of others and, given the context of the interviews, the impact of the global pandemic on learning. To

distinguish between each of these elements I used three colours one for each element when analysing HT's interview. T1's data were also different from the others as she had been interviewed prior to pandemic and my shifting focus to teacher learning in general.

Participants (other than T1) were also shown an annotated version of the DMSRI at the end of the interview. For each participant I recorded their comments on a copy of the DSMRI. This ensured that I had captured their thoughts on teacher learning prior to them seeing the model and avoided them having preconceived ideas about the model. I discuss data analysis decisions more fully in Chapter 6 when I discuss the analytic findings.

Although I used the DSMRI as part of my data analysis its use in data gathering was limited as illustrated in the table below.

Process	Use of DSMRI
1st interview – February 2020	Not used
Revising interview questions in light of changing research focus	Not used
Interview part 1- participants thoughts on teacher professional learning	Not used
Interview part 2- participants see DSMRI for first time and are asked to comment	Annotated DSMRI used
Transcription of interviews	Not used
Individual analysis of each participant's interview. Line by line thematic analysis.	DSMRI blank with additions of 'Donaldson', 'policy actors' and 'other' (Appendix 7)
Combination of all participants responses. Participants coded	Overall data analysis compared to the DSMRI and other aspects

using colour, letter and where appropriate number (i.e. T3)	of research questions created (see Table 2 below)

Table 1: Use of DSMRI

This demonstrates how the DSMRI was used to support data display and reduction which, in turn, enabled analysis and conclusions to be drawn.

5.10 Limitations

To be able to collect data, I had to significantly alter aspects of my study and adapt my methods. I had intended to co-construct maps of teachers' and leaders' thoughts on participating and supporting Lesson Study as a form of teacher learning but, due to the pandemic, this was not possible. Even without the restrictions of a global pandemic, my chosen method of co-constructing maps was not without its difficulties. Mapping in this way, beginning with a blank piece of paper and developing a map, or network of related answers creates a visual representation of the participants' thoughts. It is a recognised method for gathering qualitative data (Maxwell, 2018; Miles & Huberman, 1984). But as I was both the researcher asking the questions and capturing the responses, I was potentially steering the conversation in a way which reflected my own ontologies and epistemologies. I could potentially have asked a third party to capture the participants' responses or even asked the participant to map. Adding a third party would have become cumbersome and if I had asked the teacher to write their thoughts, they may have become focused on recording their thoughts in a particular way rather than focusing on the content of their responses (which is what I was keen to capture).

Moving to on-line interviews was also not without its limitations and challenges. I had to use three different on-line platforms depending on the participants' preference which added a layer of complication for me. I consciously prioritised my participants, hoping to have them respond in as natural a way as possible (BERA, 2018). On-line communication is not as natural as in-person, however the circumstances at the time prohibited in-person interviews with people beyond my school.

In relation to data analysis, there will always be limitations. Miles and Huberman (1984) produced a helpful diagram to explain the processes used when analysing qualitative data. It demonstrates the process I followed following data collection T1 and how the conclusions I drew from this interview influenced future data collection. It also clearly articulates the processes I followed for each of the other interviews.

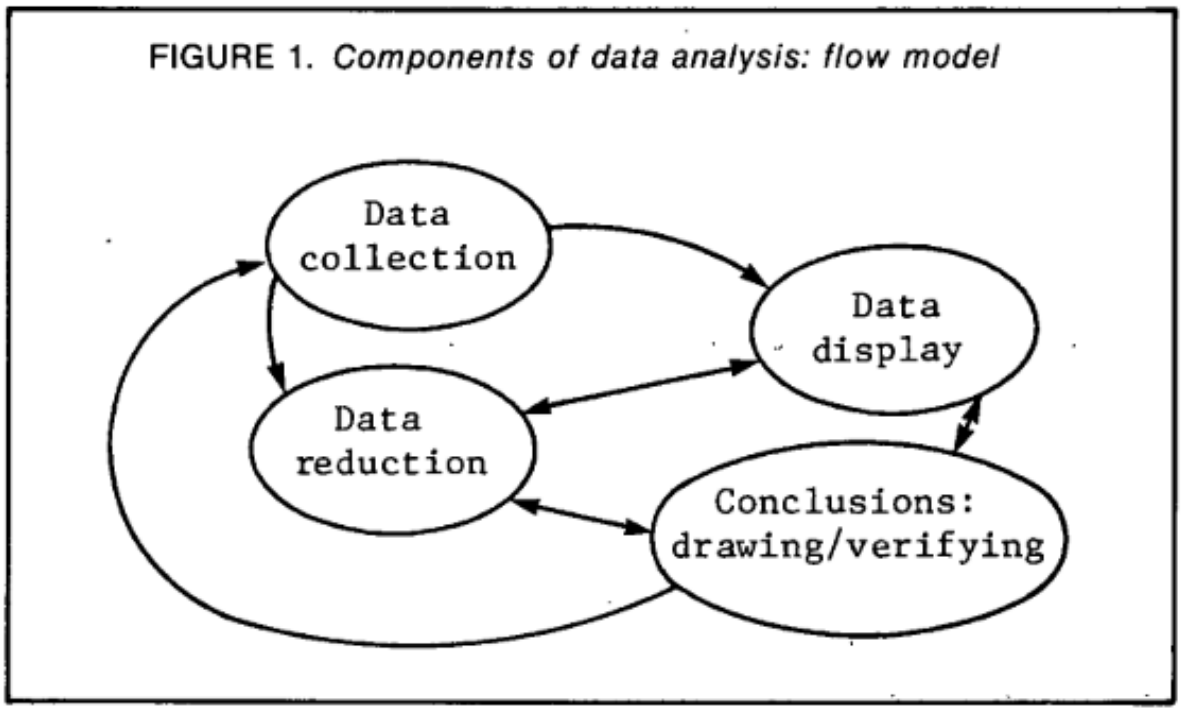


Figure 4 p. 23 Miles and Huberman, 1984

In my study, data were analysed either in the form of a transcribed interview or a map. The processes of data reduction and display after this were similar with all individual maps being created for each participant, to consider any alignment (or otherwise) to the DSMRI, policy actors or Donaldson (Appendix 7). Through a process of deductive coding, I sought to examine whether or not the DSMRI aligned with participant views of professional learning. Deductive processes are sometimes criticised within qualitative research because the researcher is setting the parameters and, in some way, making the data fit with existing theory (Braun & Clarke, 2006). However, even with inductive coding the parameters are still set by the researcher: 'researchers cannot free themselves of their theoretical and

epistemological commitments, and data are not coded in an epistemological vacuum' (Braun & Clarke, 2006, p.84).

5.11 Conclusion

This chapter has discussed the methodological approach, and the methods used, to gather and analyse data in my study. It has explained how I evolved my research question and how I approached ethics. This was an iterative Professional Enquiry which altered due to the emerging data and context. I described the process of research gathering and analysis, providing reasons for the adjustments in research focus, and outlined how I selected the range of participants. I briefly outlined the approach to data analysis, and in the next chapter will detail that approach in more detail as it relates to use of the DSMRI. I will then present the findings.

Chapter 6- data analysis and findings

6.1 Introduction

This chapter outlines in greater detail the processes I used to analyse the interview data and present the findings of that analysis.

6.2 Initial analysis

Having created individual maps for each participants' data I was interested to see if there was an alignment between the data and the DSMRI model, taking care not to force alignment where none existed. I wondered if any elements of the model aligned and if there were any that did not, always returning to the transcripts to ensure that my interpretation of the data reflected the intent of the participant. I combined the individual maps into one overall map which recorded the number of comments within each of the elements by each participant. To support my data analysis I chose three organisers: participant identifiers (T1,T2,T3, T4, HT, QIO, C and NE); colours (blue teachers; pink HT and green others) and line numbers or in the case of T3 and T4 words as I had numbered each line of each transcript to support coding during my analysis. This meant I had one overall map (shown below) with all comments supporting me to identify commonalities and differences between participants with different roles in addition to noting aspects of the DSMRI which seemed to feature more prominently in the data than others.

From my analysis, all participants mentioned almost all the core elements with only one being missed by one participant. Only four of the participants mentioned social context but almost all mentioned the others. All eight mentioned multiple policy actors and six made references to concepts which have come to prominence post Donaldson (2011). Although I am working within a broadly interpretivist paradigm which generally eschews placing value on numerical data (Denzin & Lincoln, 2017) I believe that, on this occasion, it was important to plot and calculate the data I had collected to establish whether the elements of the model were meaningful to participants. In all there were 264 comments relating to the ten elements of the DSMRI. In addition, 61 comments related to policy actors and Donaldson with only ten comments in the 'other' category. Given the number of

data points the elements of the DSMRI can be said to align with the participants' pre-existing views of professional learning suggesting that the model does appear to capture aspects relevant to teacher learning.

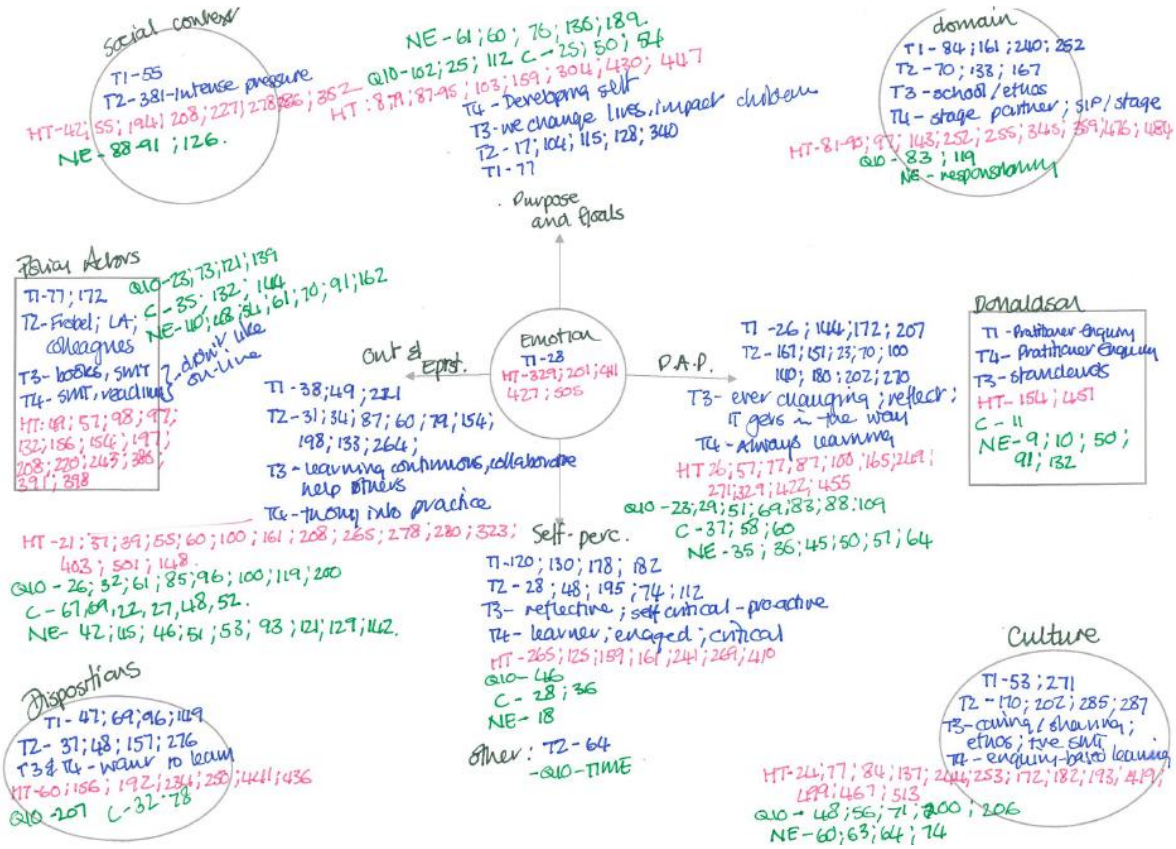


Figure 5: Map of data

The DSMRI has two broad elements, the first is internal to the individual with the second being more an external influence. From the eight participants there were a total of 264 comments which related directly to elements of the model. Of these 162 related to internal and 102 to external.

Seven of the eight participants were shown the model as the second part of their interview (T1 was interviewed before I found the DSMRI model). In total there were 50 comments from participants once they had seen the model. Although each of the participants acknowledged that there were aspects of the DSMRI which they understood, for most participants it caused them to further reflect on their own learning. This was particularly true of the two teachers (T3 and T4) with whom I

developed maps. They added to their original maps emphasising and refining them to represent their thinking more fully.

Although I recognise that, within a dynamic system, elements are interconnected and dependent upon each other I had to structure the sensemaking of the data. I therefore chose to analyse each element in turn, beginning with the internal elements and moving to the external. To ensure I present my findings logically within each of the elements I will present my analysis of data from teachers (T1-T4) who are discussing their own learning first. This will be followed by HT who talks about her own learning and the responsibility she has for developing the learning of others. Finally, I will present my analysis of the others (C, QIO and NE) who have responsibility for the learning of others. Within each section I will also discuss my engagement with the data and the questions or changes to my practice that began to emerge as I engaged with the data, learning from it. Once I had completed this analysis, I analysed comments in relation to the annotated model itself (Appendix 1). I provide a summary, in the form of a table, of the themes that arose for each of the elements of the DSMRI.

6.3 Analysis of data: findings relating to internal elements

6.3.1 Ontological and epistemological beliefs

The internal aspects of the DSMRI had more data points than the external, with *ontological and epistemological beliefs* having the greatest number of all. Every participant made multiple references to their own beliefs and values recognising that these influenced themselves as learners.

All teachers (T1-4) expressed a belief that learning was a continuous process with T1and T2 describing it as 'a journey'. The other aspect that all four mentioned was that it was important to 'collaborate' and to 'learn with and from others':

- 'learning from others often triggers areas of interest which I can then explore in my own time'(T4)
- 'stick in [with on-line learning] to help each other out' (T3)

- ‘learning from other people…for me is very important. You can have a good idea, but it’s not a great idea unless you share it’ (T2)

T4 was keen to see ‘theory put into practice’ and this was reflected in both T1 and T2’s responses. T1 and T2 are the more experienced teachers, and they expressed many more beliefs about their learning. Expanding on the notion of learning as a process, T1 commented that, ‘in order to develop (I’ve) got to go through the process’. They were also clear that for them professional learning had to be ‘intrinsically motivated, engaging, relevant’ T2 and ‘genuine’ T1. T2 expressed a belief about what prevented professional learning, ‘judgement and criticism prevent learning’ with T1 placing value on her belief that ‘if I change then I can change children’.

A key to HT’s beliefs about learning was that it had to be intentional, both for herself and others, recognising the ‘voluntary nature of learning.’ She valued learning as it ‘empowered others’ to do this she knew she had to ‘know her field’ and develop ‘political and critical thinking’ which she believed would result in ‘credibility’ and ‘respect’ from those around her. She was very aware of the ‘changing field’ of education. When thinking about her responsibility to support others’ learning - like the teachers above - she valued collaboration in the form of ‘professional dialogue’ and believed that it was important that everyone’s voice was heard. She therefore sought to ‘engage objectors’ valuing the input they gave as part of the learning process. Like T1 above HT believed that ‘we’re here to do the best that we can and to do that we need to always be bettering ourselves’.

QIO and NE also expressed the belief that learning was ‘collaborative’. QIO valued relational learning ‘relationships matter,’ ‘sense of camaraderie’ and ‘dialogue is powerful’ with NE believing that, ‘learning together is key.’ All three of these participants (QIO, NE and C) had a responsibility for developing learning in others. They also acknowledged that ‘participants need to own learning’ and ‘desire to know more’ C. NE stated: ‘I don’t know anyone who learns unless they want to… they need passion’. QIO believed that there had to be ‘agency and autonomy’ for

professional learning to be effective. However, QIO and NE mentioned measurement of learning. QIO believed that 'personal learning was easier to evidence than the impact of children and young people.' However, NE held very different beliefs about the measurement of learning:

- 'give them[teachers] an opportunity to reflect ...and don't bloody judge or measure them...';
- 'it [professional learning] became about measurement, and I don't know if that was helpful in really allowing teachers to grow'.

Although with QIO the main focus was in supporting others in their professional learning he also, as part of the interview, expressed beliefs about his own learning and in particular the influence of a colleague who had impacted his learning by being, 'a humble headteacher and an inspirational learner'. The conversation revealed the profound impact that his headteacher had on QIO's learning, connecting to the emotional aspect of the DSMRI.

As I reflected upon this data, I recognised the truth of it for my own professional learning and the ways in which my beliefs and values have changed and evolved throughout my teaching career. This challenging of the status quo in my thinking, however, was not always a comfortable place. The emotional impact of going through change is often underestimated yet for T1 and HT it was significant. My practice as a leader was also challenged by this element of the DSMRI. I recognised that often when developing learning opportunities for staff or planning for school improvement I had been heavily influence by Human Capital Theory(Becker, 2006; Spengler, 1977) and the pervasive performative culture of Scottish education (Croxford, 2010; Scottish Government, 2017b). I had often devised school improvement plans, allocating time, resources and perhaps expert input expecting that all staff would take on board the learning and improve in the measurable ways I expected.

However, as I reflected on the significance of teachers' ontological and epistemological beliefs on their learning, I recognised that on many occasions I had

tried to force learning on teachers and that, not unsurprisingly, this had not been effective. Rather than encouraging them to reflect on their practice (Brookfield, 2019; Schon, 2008), consider new pedagogies and have time and space for integration of new and old practices, I had tried to force teachers to change. Some did, some didn't, and some just closed their doors. I have been struck by the reality that change in practice only really happens when the teacher is actually in their classroom with their children, interacting and responding to their needs implementing the pedagogies they believe in, and that as a headteacher looking to support teachers' learning, I must seek to provide opportunities for them to engage fully with any proposed improvement priority of the schools but beyond that must seek to ensure that there is scope for teachers to learn around areas of particular interest to them. Finding alignment or allowing a shift to occur in their ontologies or epistemologies because the heart of teachers' learning is closely linked to the next DSMRI element of purpose and goals.

6.3.2 Purpose and goals

All four teachers highlighted the importance of developing themselves to develop children. Comments included:

- 'enter a career to be the best you can be…an intrinsic, innate process, reflecting [on her learning] in order to impact children' (T3)
- the 'learning of teachers must focus on children's learning' (T1)
- 'you get the best out of everybody...and it's for the children at the end of the day' (T2)
- 'impact on children...the reason I do what I do' (T4)

T3 commented on what she considered to be a crucial purpose of education: 'that's the importance of teaching-we change lives'. T1 placed an emphasis on pupil voice in developing her teaching, one of her goals being about 'using children's voice and their opinions as learners. And taking that on board to…to think about your planning and next steps. Like properly listening to them...' (T1). T2 was also clear about what she thought got in the way of the purpose and goals of professional learning: 'it [professional learning] becomes a paper exercise and

people disengage from it...I write it up to prove to you that I've done it... it becomes a test'. T2, a more experienced teacher, also emphasised the importance of developing others as part of the purpose of her learning, in order to 'lead the staff team, nurture them'.

HT focused on herself and the purpose and goals that she had in pursuing professional learning but, like T2, she linked her own learning to the learning of others, particularly her staff team. HT was clear that her purpose was to support her staff team in their professional learning. She had to 'think critically' and 'politically' and be 'reflective':

> your role [as a HT] is very much understanding your staff team and understanding where they are on the journey. Where they are in their own personal lives. And understanding the ebb and flow of people's careers. (HT)

HT used the analogy of a chess game to describe the different ways members of her team would respond to her supporting them in their learning journey. Some were 'pawns' and would move forward steadily whereas others she had to be more strategic with because,

> they could go in any direction, but you also need to know... well how far in any direction will they go. So, thinking about some as knights… they might go lots of different ways but, actually, they'll go the same amount each of the different directions and then the queens who'll either go flying across to the other side but equally can come flying back again. (HT)

For HT, her purpose was to 'motivate and influence.' She describes how - despite having the same input - different members of staff take things on board differently and with some moving with the change and others not. She was keen to 'orchestrate different working' to 'go with people's interests' to develop the whole staff team effectively.

All three of the other participants (C, QIO and NE) agreed that teachers' learning had to be relevant and again, like the teachers, believed that this should relate to children's learning. These participants stated that teachers' learning:

- 'must relate to what they're doing and improve it' (C)
- 'is what we do to improve knowledge skills and abilities as professionals in order to improve the experiences of and outcomes for learners' (QIO)
- 'must impact children' (NE)

C spoke in more depth about their role in this describing her belief that the person participating in professional learning must 'desire to know more' with her role being to ensure that the professional learning opportunities she facilitates, 'hook into where they are at going' going on to describe how during these sessions she, with colleagues, is 'not taking them from scratch , we're taking them from where they are'. NE was clear in her belief that 'teachers were experts' and that the purpose of professional learning was to 'improve the way teachers think about their job.' Throughout the interview, NE expressed positive views about the expertise of teachers and negative views around what she saw as the over bureaucratic emphasis within teachers' professional learning programmes. She commented that the purpose of professional learning 'is a solution to a problem not to write a five-thousand-word essay on' (NE).

The relevance of teachers' professional learning to their everyday experience appears to be an important factor for all participants, this could on the surface, seem fairly obvious but for T3 it went beyond the narrow focus of the here and now into her broader reasons of ensuring that she was equipped to teach children and 'change their lives'. Encouraging teachers to connect with the bigger purpose of their role is something which, as a headteacher I continually return to, particularly within the realm of teacher learning. Whilst I do not fully ascribe to the rhetoric around the performance culture of school improvement, (Scottish Government, 2019) I am committed to system improvement that benefits the practice of teachers and children's learning. As headteacher I am very conscious of

exponential rate of change within society and the necessity for teachers' practices to continually develop in order to meet the changing needs of children and the society they are part of (Darling-Hammond et al., 2017).

Another point of interest for me in this element of purpose and goals were the strong views expressed by T2 and NE about teachers having to write about their learning with both expressing they didn't see the value in teachers writing about their learning. I would argue that this view potentially limits teacher learning. The process of writing helps clarify thinking, facilitates critical reflection, and potentially provides an opportunity for teachers' learning to be critiqued by others. This process can provide clarity of thinking and a broadening of understanding. Perhaps the challenge is also that if there is no sharing or criticality around teachers' learning then teachers may just be replicating poor practice, built upon poor foundations. The challenge however is to make the recording of learning a meaningful process for teachers. With competing demands on their time writing large essays about their learning is something which both NE and T2 had very strong negative feelings about. But what if there was another way to share learning, engage with colleagues and critically reflect upon one's own learning?

6.3.3 Perceived action possibilities

The first element analysed where there was not a common thread amongst all teachers, was perceived action possibilities. However commonalities were evident between T1 and T2 the more experienced teachers and T3 and T4 the new career teachers. T3 and T4 emphasised the need to be continually learning and that this was something, as new entrants to the profession they embraced as something which they would be required to do. T3 stated: 'I need to reflect or I will become stagnant'. They were both keen to be engaged in learning experiences which they could use with their children, and both were clear on elements which they did not want to do as part of their learning. T4 did not want 'courses which don't have a practical application'; T3 expressed her dissatisfaction with online rather than in person learning, stating that 'I.T. gets in the way of learning'. When probed on this, T3 said online learning was 'not helpful as there's a lack of participation'.

Both T1 and T2 were keen to engage in learning which although practical required elements of critical thinking. For example T1 said that 'enquiry learning has impact' and felt that they 'should do more'. T2 said: 'I don't like that feeling of being told this is the right way of doing it. I want to decide that for myself'. Both were also clear that the learning process was not straightforward with both using emotive language to describe the process. T2 spoke about 'learn[ing] through failure', and T1 spoke about being 'out of your comfort zone... scary... there's fear there'. However, both recognised that the process of learning, although difficult, was valuable. T2 felt they were 'able to get it wrong and fix it' and 'able to try again' while T1 thought that 'difficult processes are worthwhile'. They were also both keen to learn with and from others, for example by 'visiting and being visited' (T2) or 'working together through a [learning] process' (T1).

These conversations gave interesting insights regarding the differences between the more and less experienced teachers. The less experienced teachers were enthusiastic about ideas that they could immediately put into practice whereas, for the more experienced teachers, there was the acknowledgement that going forward with their learning involved thinking and challenge, both of which could be a threat to their perceived versions of themselves or their previous ways of being (Fraser, 2010). It is perhaps understandable that teachers would find learning new ways to teach a challenge as they may feel that they have not provided the best they could for children they taught in the past. Once again, the complexity of a teacher's learning journey is revealed, because in learning and adapting to new strategies they have to reconcile that the old strategies they are leaving behind were ones they once held tightly to and used to teach previous groups of children.

Although there were differences between both sets of teachers there was agreement on the importance of collaboration in their learning (Ainscow et al., 2016). T3 found learning on-line hindered genuine collaboration with both T1 and T2 highlighting the importance of learning with and from others. Collaboration emerged as something which teachers craved in their learning and one which others, who were responsible for teacher learning, knew they had to facilitate.

There were three aspects of HT's role regarding professional learning: responsibility for staff professional learning; responsibility for her own professional learning and the impact of the global pandemic. She was clear that to support her staff in their learning she had to 'understand the team' and 'know staff.' She spoke about engaging those who may have been objectors to change by giving them opportunities to learn in diverse ways to support their learning and the overall learning of the team. The pandemic had a significant impact on what HT could do and the ways in which she described herself as having to behave that were not her natural leadership style:

> The whole of my headships have been towards distributive leadership and empowering those around me …. And all of a sudden, I had to be very directive. (HT)

She also realised that, coming out of the pandemic, there were wider changes within Scottish Education because several new Directors of Education were to be appointed. She thought this would create different opportunities for herself and her staff which she would be required to lead:

> 'I'm aware that we are coming into a new realm and as a leader I want to be ready for that. As a leader I want to say, 'no' and be able to stand up for what I think is right'. (HT)

To do this, she had to be mindful of her own learning and the learning of her staff team. She was conscious that they will be moving from learning done during the pandemic which was 'operational' e.g., writing risk assessments or learning how to operate online systems. She said: 'learning has been so driven this year by, 'you have to do this..because..well you have to'...' (HT). This was in contrast to teacher learning which had a greater focus on broader aspects of learning and teaching, recognising the need for staff to follow their own interests. HT was also keen to support teachers' collaborative learning by providing them with opportunities to learn together. She explained this approach as: 'here's the

structure of what we need you to do. Now I want you to go away, and do it together and then come back and present what you've found, present impact' (HT).

HT also recognised that the pandemic had impacted her own professional learning and things which she valued, and would usually do, she did not have the capacity for. These included 'professional reading' and 'dialogue with likeminded people.' She also repeatedly mentioned the word, 'intentional' when referring to her own learning. HT described her approach to learning:

> 'you can take and CLPL and make it into something positive if you go in with the right attitude…ok I might have heard this before but how do I need to use this now? What can I take from this? Even if that something is... Well, I'd never do that. You've really gotta think.' (HT)

Once again, collaboration emerges as important in HT's thinking. She is very aware of how the pandemic has prohibited this for both her staff and herself. She is looking forward to engaging in collaborative learning and supporting her staff to do so. Like T1 and T2 she is also aware of the importance of being critical and is looking to be well informed so that she can contribute meaningfully to educational change rather than be heavily directed by others.

In their roles supporting teachers' learning C, QIO and NE were committed to supporting teachers by providing time for collaboration, reflection, and enquiry. Comments included:

- '[on learning] where you've had the time together, partly lecture partly group activities, it's going away and thinking and doing, and reading and reflecting and coming back with questions' (C)
- 'I think the opportunity to collaborate makes the enquiry more powerful…just having people to sit down and dialogue with is very powerful' (QIO)

- 'there's so much that professionals learn from each other, I'm there as the catalyst' (C)
- 'teachers will invest [themselves] when you give them an opportunity to learn with a colleague...give them an opportunity to reflect and crucially don't bloody judge them ' (NE)

NE emphasised both collaboration and critical thinking, explaining in more depth her thinking and actions. She described her own journey in supporting teacher learning from being a headteacher to local authority manager and finally national leader. The reason for this journey was her dissatisfaction with the models of teacher learning at the time and her belief that she could change things. She said that 'the models of CPD that were around were not actually hitting the mark…a simplistic model that didn't work…I began to experiment' (NE). However, NE became

> 'a bit disillusioned with the university models because. They seemed to me to be focused on the old idea of filling up vessels rather than developing skills and knowledge and understanding'. (NE)

NE developed a commitment to Learning Rounds(Philpott & Oates, 2017a) as a form of teacher learning as, for her, it provided a framework for teachers to collaborate and learn. NE said 'you give people an opportunity to observe what other colleagues do. You give them an opportunity to talk about that, you don't judge, you say, "I learned this"'. NE also commented that she thought 'Learning Rounds were strong'.

It is interesting that the four 'non-teaching' participants recognised that teachers needed time to think and reflect, collaborating with each other where possible. However, none of these participants mentioned the potential anxiety that critical reflection could cause an individual teacher or group of teachers that have been collaborating. An example of where this anxiety might manifest comes from HT's expectations noted above. Although HT is keen for teachers to have time to collaborate, she is also looking for a tangible improvement from that

collaboration. What if by collaborating and trying something new it doesn't work? What if there has been no impact or if they, as a group of teachers, were unable to work together and collaborate? What would they share with HT then?

I believe that learning occurs when things fail just much as when they succeed, but is this act of sharing failure something which teachers perceive as possible? Are they confident or comfortable to share their failures with one another? Being aware of the potential conflicts a teacher may be going through during the learning process is something that I have been mindful of, a discovery from my research which has impacted my practice as a leader causing me to share failures and what I learned through failing.

6.3.4 Self-perception and definitions

Other than the core elements, the final of the internal elements of the DSMRI is self-perception and definitions it had the fewest comments of the internal, non-core, elements. All teachers described themselves as 'learners,' describing what that meant to them using the following terms:

- 'engaged and critical' (T4)
- 'reflective' (T3)
- 'reflective, able to see different perspectives' (T2)
- 'a practical learner who has to try things out' (T2)
- 'a learner, not an expert' (T1)

T1 who was the most experienced teacher described herself in more ways than the others, stating she was 'creative' and 'flexible', and explaining how participation in Lesson Study had caused her to 'grow in confidence.'

HT was also clear that she had a role as the 'lead learner' in the school. She described herself as having a responsibility to her whole staff for 'empowering others' and 'developing people'. She also described herself as being 'operational' and 'strategic.' This was evident as she once again within the interview reflected

on the impact of the pandemic. Describing how she was ‘directive’ and that this was necessary at the time, she said: 'it’s been good to see that here really is a place for different types of leadership… and that (during covid) being directive helped people stay safe' (HT). This was the only area of the internal elements of the DSMRI where there was a marked contrast between participants. QIO still saw himself as a ‘learner’ whereas C described herself as 'the catalyst and the person who stirs it up, the alchemists more than the providers'. Perhaps because she was no longer involved in a formal sense in teacher learning, NE did not mention this element within the first part of the interview, prior to seeing the model.

When describing their role, almost all participants discussed the importance of being reflective and critical of themselves. Creating space for teachers to grow and develop was key for HT and C. With C very clear that her role was to provoke and encourage critical reflection. This final aspect of the internal factors leads us into the first of the external elements, culture.

6.4 Analysis of Data: findings relating to external elements

6.4.1 Culture

This external element had the most comments (37), with everyone, other than C, commenting repeatedly on it. All four teachers considered the culture of the school a key driver in their learning. Citing the importance of a ‘positive learning ethos’ T3 which supported T4 to adopt an ‘inquiring approach’ to her own learning. T2 describing it as 'having the freedom to try things and see what works without the judgement'.

Establishing and building a culture which supported teacher learning was a key priority for HT. Her comments included the following:

- 'As the headteacher your role is absolutely crucial for your teaching staff because you are shaping that culture.'
- 'the culture (which values professional reading) that I am creating here I can see it in some of the people that are around me.'

- 'There's a real need for schools to get the culture right….and that's what I feel about my staff, they like learning. So, it's actually a pleasure thinking about moving forward (out of covid) to continue to create a sense of 'it's good to learn'.'

QIO and NE both described aspects of culture which they saw as being important in supporting teachers' learning. Reflecting on his own journey as a learner QIO was clear that having his headteacher value his professional learning was significant:

> 'another aspect of professional learning that's really important is having the backing of your headteacher or line manager... where they keep time aside for you' (QIO)

As mentioned above, NE was an advocate of Learning Rounds as she believed they created a culture which was 'non-judgemental and collaborative'. NE said: 'I think it was the fact that teachers felt a sense of empowerment from it'

I realised through my research that, of all the elements of the DSMRI, this is where I can have the greatest influence either positively or negatively as a leader (Priestley, 2011; Schaap et al., 2019; Seashore Louis & Lee, 2016). Valuing the process of learning and providing space for teachers to learn has become pivotal in my leadership practice in recent years. I encourage the whole staff team to consider an aspect of their practice they want to develop and build this into the systems of the school such as the annual school calendar, working time agreement and school improvement plan. By being very intentional, dedicating time and resource to teachers' learning I am demonstrating that it is something that I value. As I have taken on board the learning from my research, I now ensure there is time and space for teachers to collaborate, critically reflect on their own learning, and share their learning with others in a non-judgemental fashion.

6.4.2 Dispositions; social context and domain

Comments relating to the other three outer elements – dispositions, social context, and domain - were less frequent than comments relating to the other elements. These three elements are probably the ones that are more factors of influence beyond the control of the teacher. As previously mentioned, within the DSMRI, the domain for teachers is the school or class of children that they teach, with the children bringing their own selves and histories into the teacher's domain. The social context of where the teacher's learning takes place is also impacted by factors beyond the teacher's control for example the socio-economic background, where either poverty or wealth impact children's life experiences. The social context for this study was during a global pandemic which very clearly had an impact on teachers' learning. HT commented on the immediate and potential long-term influence of the pandemic on her and others' learning. Finally, the teacher's dispositions, within the DSMRI, is the teacher's way of being. Both nature and nurture influence teachers' ways of being for the DSMRI, and these ways of being are known as *dispositions*.

When considering their dispositions, T1, T2, T3 and T4 all expressed they 'wanted to learn' with critical reflection and collaboration again being mentioned:

- '[learning has] got to be intrinsically motivated; you have to want to do it, otherwise it's pointless' (T2)
- 'reflecting on input …being critical and asking 'Did I get anything out of this?' (T4)
- 'reflection is an innate process…. It's second nature …a natural process' (T3)
- 'Am I doing the right thing? Could I be doing better? ...being reflective' (T1)
- 'you need to be able to really listen to everybody and work collaboratively properly' (T2)

HT also expressed her disposition of continuing learning to 'know her field' and be a 'role model' for her staff. Throughout the interview she described her approach to learning with critical thinking a key element. She commented:

> ‘We’ve got to think critically about what we are reading... you’ve got to know the reasons why you might not do something and just go along with something because it’s the latest shiny thing.’ (HT)

She also said that she was at the stage in her career where 'I think…yeah that’s not new, it’s just re-written ... [writers] just making books now because you’re taking your last one and you’re reprinting it with an extra chapter in it'.

HT was also very aware of her responsibility to support the learning of others, describing how she would collaborate with different members of her staff team - teachers, Principal Teacher (PT) and Depute Head (DHT) - supporting them and engaging them in professional dialogue. She said, 'I think probably the professional discussions with like-minded people... I can see her [the DHT] transforming ... because of the discussions we’ve had' (HT). HT also describes how significant these discussions are to her recently permanently appointed PT. She speaks enthusiastically about the challenge that PT brings to her during these discussions and how she relishes the opportunity to become involved in ‘meaty’ debate. HT describes these discussions with PT as being mutually beneficial, with PT now able to raise points and suggest ways of moving things forward:

> ‘there’s somebody [PT] who over the couple of years that I’ve been there [as HT at the school] has gone from somebody who wouldn’t have talked about things to somebody who will come and share something and will say, ‘ You’ll like this.. I read this by such and such’. (HT)

C, QIO and NE also described the ability to critically reflect and collaborate as dispositions they saw in teachers who engaged in learning. This was something they sought to make space for and value:

- 'having people to sit down and dialogue with is very powerful.' (QIO)

- 'I think I ask good questions and help people to reflect on what they are doing.' (C)
- 'The only experts I knew were the experts in the classroom, doing the job and continuing to reflect and improve.' (NE)

Of the other external factors social context had the fewest mentions within the data (16) although domain (school or class) was fairly high (27). Only T1 and T2 mentioned social context impacting their learning with T2 describing the intense pressure she feels at times from the local authority who, 'squeeze very last bit out of you'. T1, who was the most experienced teacher, reflected on the fact that she had to keep learning in response to the changing needs of children. She said she was 'continually aware of the need to develop…. to make sure that your skills match the change in pupils' (T1).

HT made the most comments about the social context and how it impacted her own learning, the learning of her teachers, and the impact created by the context of a global pandemic. Her comments included:

- 'the world is changing and you need to take cognisance of that'
- 'you need to think about the new structures of a different authority'
- '...and I think it's a bit scary because (due to covid) the government has managed to almost take ownership of education and whether or not when we come out of this will they let it go again?'

She also considered the domain of her school as being particularly significant in developing her own learning and the learning of others. Noting that her desire to continue to learn and to learn differently was impacted upon by the needs of her school and the staff she had a responsibility for supporting. Domain was also particularly relevant for the teacher participants, with each teacher mentioning it multiple times. Comments included:

- '[school], with a caring sharing ethos where I can learn from others' (T3)
- 'there's an impact (on my learning) from the school improvement plan and any whole school development' (T4)
- 'I love working with young children because you get the authentic self... rather than rumblings form older children you get the three-year-old who says, 'I don't want to do that'' (T2)

For the teacher participating in Lesson Study, this was particularly pertinent as the same lesson was taught in different classes in different schools. She said: 'You can't really understand that until you have something to compare it to... It was nice to see a mix of schools' (T1).

There were fewer comments from C, QIO and NE around social context and domain, with only NE mentioning social context prior to seeing the model. NE said that 'good teaching in a posh school in Edinburgh will look very different to you know [name of area] where I worked which was an area of huge deprivation'. NE also said that professional learning 'has got to be about the context where you are at any given time'. C did not mention domain; however, it was mentioned briefly by QIO and NE, with QIO referring to the difficulties of schools learning from one another as schools can be 'very busy silos.'

Acknowledging that domain, social context, and the dispositions of teachers all have an impact on their learning is something I have been aware of as I sought to support teacher learning in different schools with different staff groups, socio-economic backgrounds, and numbers of children. However, the DSMRI captures these elements as part of a model that encouraged me to reflect more fully on the complexity of professional learning as I sought to change my practice as a headteacher. Knowing that for all of us, leaders, and teachers alike, there are elements which impact our learning, but which are beyond our control, is quite challenging at times. As this research was conducted during the global pandemic the significance of external factors on learning was keenly felt by all. As a society

we learned new ways of being and communicating in response to external factors with teachers and children having to adapt in so many ways. One of the key strengths of the DSMRI is that it was able embrace the impact of the pandemic as a significant factor for teacher learning. During the pandemic the social context clearly impacted many aspects of people's lives, and this included the professional learning lives of teachers.

The final aspects of the analysis related to the internal elements of emotions and actions which I explore next.

6.5 Analysis of Data- findings relating to core elements

6.5.1 Emotions

All four teachers expressed positive emotions connected with professional learning. These included:

- 'love' (T2 and T4)
- 'confidence' (T1)
- 'excited by learning' (T3)
- 'passion' (T2)

However, T1 and T2 also described negative emotions associate with professional learning, especially when engaged in collaborative learning tasks. T1 used the words, 'scary; fear; guarded and threatened' with T2 expressing her, 'fear of judgement' and 'being afraid'.

For HT there were also both positive and negative emotions. The positives being: 'value; courageous; entrusted; positive; strength; buzz'. The negatives were 'frustrating; sceptical; worry; scary'. She had extremely negative emotional responses to the impact of the pandemic describing it as, 'really, really hard; crisis management and producing elevated levels of anxiety' (HT). However, she described her emotions about moving out of the pandemic in a much more positive

light: ‘it’s actually a pleasure thinking about so how do we move forward after we come out of here to continue to creating a sense of ‘it’s good to learn’

All of those with a responsibility for supporting professional learning commented upon emotions in relation to professional learning. C noted that teachers needed the ‘desire’ to learn. It was interesting that in this area both QIO and NE talked about their own emotions rather than those of others, expressing both positive and negative emotions. QIO commented on the positives of ‘camaraderie; confidence building and being part of a happy, motivated team’ however he also described feelings of ‘frustration’ spoke negatively when things were ‘risky.’ NE, when talking about her own experience described how she ‘loved’ her job; was ‘passionate’ about learning and was ‘delighted’ about a programme that is still running. However, she also describes how she was ‘disillusioned, disappointed and not happy’ and how one particular experience where a teacher who had volunteered to be part of a Learning Round which hadn’t gone well ‘haunted’ her. NE recounted that the class teacher stated: ‘Just because the children in this class refused to learn that does not make me a bad teacher’. For NE this completely missed the point of teaching as the teacher ‘[thought] that the process of teaching is something separated from the outcome’. When considering the learning of teachers NE also commented upon the fact that during professional learning teachers were at their ‘most exposed.’

This understanding and acceptance of the positive and negative emotions associated with teacher learning is an important aspect for me to remember as I look to support the learning of my team (Day & Lee, 2011). Although collaboration and critical thinking have come out as key aspects which support teacher learning there is also a sense in which they can engender emotional responses, both positive and negative. As the headteacher looking to support teachers’ learning I need to ensure we create a culture which welcomes challenge and criticality but does so from a respectful and focused way, always seeking to learn rather than to judge.

6.5.2 Actions

The final internal aspect of the DSMRI is actions. There were various actions which teachers undertook either to learn, or because of their learning, these included: reading; dialogue with others; visiting other establishments/classrooms; critical thinking and writing. For example, T1 participated in Lesson Study and one of the key parts of this was visiting other classes. She described it as being extremely beneficial. T2 also talked about the learning she gained from visiting other establishments, recognising she thought about things she may not do as well as things she might try following a visit. Linked to these visits for all teachers was the dialogue with others.

Teacher participants also cited professional reading, critical thinking, and writing as actions which supported their professional learning. T3 said they usually enjoyed 'reading documents and books which have been recommended by others who have been teaching for a long time', while T4 said that books 'sparked interest'. T2 was particularly keen that her action of reading then resulted in action within her classroom: 'When you're researching or like reading up on theory that kind of thing, you have to be able to use it in order for it to become... make sense' (T2). T3 and T4 stated that they applied critical thinking to their learning, while T2 and T1 had differing views on the significance of writing in the learning process. For T2 it became a test which became, 'inauthentic'. T1 on the other hand, had to agree and adapt written plans with her colleagues which she found benefitted her learning.

In relation to actions, again HT had two responsibilities: the responsibility for her own professional learning and that of her staff. She emphasised the need for professional reading, dialogue, and critical thinking for her own professional learning and that she needed to support others in their reading, dialogue encouraging them to think critically. The actions of HT we much broader for others learning as she was aware that her actions impacted upon others 'but we've also got to think critically about what we're reading' (HT). To address development needs HT had to think 'how can I orchestrate different working' (HT). She also had

a broad view of the actions which brought about professional learning for herself and others. She said:

> ‘[teachers] realise that your professional development is not that course... It is that team teaching, it is that professional dialogue it’s that article that gets you talking in the staffroom, it’s the Facebook post that somebody shares in the teachers’ chat that then gets discussion happening, those are as valuable as going on a twilight on how to use Teams.’ (HT)

HT was also aware that, due to the pandemic, her actions had been at times much more directive that she would usually have been. Her learning had been focused on health and safety and enabling her staff team to learn new IT (Information Technology) skills as learning moved on-line and there were increased expectations of what this would look like for children. She was looking forward to several types of professional learning to give 'a chance to have discussions with each other, have dialogue with each other which isn’t just about stuff we need to do' (HT).

All those responsible for the professional learning of teachers were aware of the actions they took to support teachers. For NE and C in particular their actions included supporting teachers to collaborate with one another, for NE through Learning Rounds and for C through facilitating discussion and asking pertinent questions which stimulated discussion. QIO was aware that collaboration was key to untapping professional learning and was keen to explore how newly established bodies such as the West Partnership could contribute to this. However, there were a few areas of discord within this group. QIO recognised that time was a factor which inhibited professional learning, particularly when it came to collaboration, but C thought that if people have the desire to work together, they would ‘be creative, make it happen and think outside the box.’ QIO also described the benefits to his professional learning of having to complete a written task, whereas for NE written tasks got in the way of teachers’ learning.

When considering the actions of the teacher in my team I am aware that I can suggest a range of possible actions associated with professional learning but cannot act on behalf of the teachers undertaking the learning. I can provide time, resources and opportunities for collaboration or critical thinking, but it is the personal responsibility of the teacher to engage with their own learning (Day et al., 2007)

6.6 Response of participants to DSMRI

The themes from the participant responses to my interview questions aligned with particular elements of the DSMRI (see Table 2).

Element	**Themes arising**
Ontology and epistemology	Teacher learning • continuous; a journey • should enhance children's learning experiences • is reflective, critical and active • flourishes when collaborative • is owned by the learner • uncovers potential conflicts between policy and practice
Purpose and goals	• change throughout a career • different for individual teachers • (learning) should be linked to the individual • different views around the importance of academia
Perceived action possibilities	• professional agency significant • self-determined learning can induce negative emotions

	• during covid actions were limited but learning took place with improved teacher agency
Culture	• key factor in teacher learning • leaders have significant role in creating and maintaining a learning culture
Emotions	• both positive and negative emotions are experienced during learning • a supportive culture helps mitigate against negative emotions • political pressure produces negative emotions in headteachers • teachers feel anxious when being observed by others but enjoy watching others teach
Actions	• learning needs to be intentional • a wide variety of actions constitute teacher learning • learning with others is positive • headteachers need to create learning opportunities for staff • reflection, critical thinking and being present on social media are all actions which impact teacher learning

Table 2: Summary of themes

This highlights that perceptions did, in many ways, align with the model.

When it comes to looking at participants' specific responses to the DSMRI itself, there is no response from T1 however the responses of the other participants are discussed below.

6.7 Responses of participants to the DSMRI

As I discovered the Dynamic Systems Model of Role Identity (DSMRI) after I had completed my interview with T1 there are no comments from her. All three of the other teachers found the model resonated with their understanding of their own professional learning:

- 'That [the model] fully fits me as a practitioner and my personality' (T2)
- 'This [developing my identity as a teacher] is key for me at the moment' (T4)
- 'reminds us to think of other things which impact each other' (T3)

HT also found the model interesting stating:

> ‘I could see how using that with a staff team to try and get them to understand that when you are moving forward with something as a school all of these things will influence you ‘(HT).

She also recognised the four areas in the outer elements are where she, ‘as the leader I would be more aware, or have more understanding.’

Other participants saw a potential place for the model in their role of supporting professional learning with C noting how it ‘kept the focus on why we are teachers’. QIO liked the model because 'it looks organic and distributive as opposed to distributed so there’s that chance for learning to grow from the ground up.' He saw culture playing a key part and that this could be applied to a school and to a local authority:

> It seems very much like establishing the right culture, you know the right conditions where you have a happy and motivated team and workforce who want to learn ... It looks like you could apply it in a school or a local authority. (Q10)

NE, once she had explored the elements and their interconnected nature, was also enthusiastic about the model:

> I like this model; I totally endorse it…. There's nothing here that doesn't chime with my own experience and my own understanding, it is very congruous with the kind of stuff I was thinking. (NE)

Given that the model when presented to participants resonated with them, it could potentially be helpful in supporting both teachers and those responsible for teachers' learning in understanding some of the complexities of teachers' professional learning.

6.8 Analysis of data: findings relating to policy actors and the post-Donalsdon context

In addition to analysing data in relation to the DSMRI elements, I also analysed the interviews in relation to the other aspects of my research question: policy actors and the 'post-Donaldson' policy context. Taking each item in turn and following the convention above I will present the analysis in the following order: findings relating to teachers, to headteacher, then to other participants.

6.8.1 Understanding of policy actors

All four teachers mentioned the Local Authority as having a place of influence in their professional learning journey. T2, 3 and 4 also highlighted for them the importance of professional reading, and all mentioned the ways in which other teachers and senior managers supported their learning journey. T3 and T4 both mentioned using on-line sources and social media forums as influencers on their professional learning. For T1 one of the most significant influencers on her learning, mentioned repeatedly throughout the interview was children. Where on reflecting on previous attitudes to learner voice she is aware that although she was keen to listen to children she did not allow learner voice to shape her practice in the way she does now. She then gave an example of how listening to a child caused her to reflect on her own practice,

> she [child] said well em .. well I think she should have maybe shown us the harder example first. And my instinct was to say, yeah but you don't understand why I was doing it that way rather than... do you know what? Let's maybe try it that way and see if it does make any difference to you. You know so I guess, don't always go with your own assumptions. (T1)

HT was very aware of a wide variety of policy actors who impacted her professional learning and the professional learning of those she was leading. Closest to her school she described how teachers and other staff influenced one another, playing a pivotal role in the success or otherwise of one another's professional learning. HT mentioned the Local Authority and specifically directors of education, as well as education specific organisations of Education Scotland, The West Partnership, and the General Teaching Council for Scotland (GTCS). She also mentioned political influencers such as Scottish government and the First Minister as having and influence which she expressed the following opinion about:

> My view is that unfortunately education has become political whereas it should be separate. I think the day that Nicola Sturgeon said that education was going to be her legacy… that's what puts on pressure. (HT)

Like the teachers above, HT stated that on-line sources and social media forums influenced her own and her teachers' learning. She too mentioned professional reading although she was also critical of authors who in her eyes,

> I'm at that stage in my career where I listen to it and I think, that's not new, it's just been re-written… you're taking your last one (book) and you're re-printing it with an extra chapter. (HT)

The final two policy influencers HT mentioned were a specific professional learning programme (Columba 1400) and the impact of covid.

NE mentioned the largest number of policy actors (9), including almost all of those mentioned by both the teachers and HT above. In addition, she mentioned the universities, who were also mentioned by QIO. But unlike QIO, NE did not mention the West Partnership possibly due to its more recent addition to the education landscape. Out of all the participants C mentioned the fewest number of policy actors: Education Scotland, GTCS and the organisation she worked for as a consultant.

The significant aspect that was missing from these participants' discussions was the importance that both teachers and HT gave to professional reading and to learning from on-line sources and social media forums. This was an important discovery for me. Through my studies I am very aware of policy actors such as the OECD and other large organisations who I believe are playing a pivotal role in influencing education policy in Scotland (Menter & Hulme, 2011; OECD, 2021). For teachers the rise of social media and often unregulated or unchallenged platforms for sharing learning appears to play a bigger role in their day-to-day learning (Goodyear et al., 2014). But where is the challenge and the rigour around some of the ideas or wisdom gleaned on social media? A key aspect of this dissertation, arising from the data, has been the importance of critical thinking. I believe as a school leader it is important to support my staff in challenging the perceived wisdom of a range of policy actors, both formal (the GTCS, Scottish Government and Local Authority) but also informal (social media platforms, books, and on-line sources).

6.8.2 The post-Donaldson context

Within the 'post-Donaldson' aspect of my analysis, I wanted to explore whether there were elements of professional learning for teachers which appeared to be influenced by the ideas contained in *Teaching Scotland's Future* (Donaldson, 2011). I wanted then to identify whether or not there were areas of congruence

with the DSMRI and if there were any aspects which are not reflected in elements of the DSMRI.

T1 mentioned research and the importance of bringing research and practice together and saw Practitioner Enquiry and Lesson Study as two approaches which encouraged this. T4 and T3 also mentioned Practitioner Enquiry as encouraging them to marry research and practice. Teachers critically applying research was a key feature of the Report and the various elements of the DSMRI would be where the criticality would come. As a teacher receives a new piece of information, or tries something new in their classroom ,the elements of the DSMRI adjust and act as filters to influence the actions of the teacher. This application of the DSMRI helped me in my understanding of the complex nature of Practitioner Enquiry and the application of research. Too often I, and probably other colleagues, have presented staff with new initiatives or research and not given enough time for those research ideas or initiatives to be tested and challenged by teachers. The drive for performance improvement has in the past forced me to seek a quick turnaround and evidence of improvement within a year. This I now understand to be unrealistic, and I now give more time for discussion, collaborative working, testing, and integrating into practice where there is alignment and opportunities for staff to reject ideas that don't work for them or for a particular cohort of children.

HT was aware that, due to the impact of the pandemic, her staff had lacked the opportunity to develop and take ownership of their professional learning in ways that they had previously done. She was keen to facilitate learning of this type where staff were encouraged to follow their interests and viewed Practitioner Enquiry as a possible vehicle which would support this. She also described participating in professional learning which was specifically directed at her as a headteacher who had been in post for several years. The on-going development of leaders at all levels of the education system was another key recommendation of the report.

C didn't reference the Donaldson report, however for NE it was significant as she saw how it and its predecessor the, McCrone Agreement, impacted upon teachers' professional learning. NE comments:

> In the early part of my career, there was no expectation that teachers would continue to develop. That was kinda just once you got your job, you just got on with it. And the big change of course, came with TP21 Teaching Profession for the 21st Century. Which put a new expectation on people. And I loved all that. I just thought it was absolutely that we should be. (NE)

For NE, the way in which teachers' learning was supported well was through Learning Rounds and this seemed to capture many of Donaldson's ideals. The aspect of Donaldson which QIO referenced was developing enquiry as a mindset. He viewed Practitioner Enquiry as a way for teachers to continually update their practice:

> It's about developing those habits of enquiring, understanding that you don't need to write it up into a formal report each time you complete one. It should be about the way you work, the way that you learn, the way that you learn alongside the pupils who are learning and the way you learn alongside and with your colleagues. (QIO)

The purpose of analysing the data collected through the lenses of policy actors and the Donaldson Report, was to in some way gauge the extent to which these were reflected the lives of participants, all of whom had an interest in some way in teachers' learning and to establish where there was congruence or dissonance between the DSMRI and these two additional elements.

For teachers and HT the most significant policy actors were the Local Authority, the management or other teachers in the school, and children. Each of these could easily be aligned with the external elements of the DSMRI: children with *domain*; management and others in school with *culture*; and Local Authority with *social*

context. HT, in common with the other participants who had an interest in teachers' learning, mentioned a number of other policy actors who were much further removed from the teacher and although these are external elements I would argue that some, such as the GTCS have an influence on some of the internal elements of the DSMRI such as *purpose and goals* or *perceived action possibilities* particularly for newly qualified teachers or teachers who use the GTCS Standards as part of their annual review process where they seek to map out their professional learning for the following year.

There were many ways in which enquiry and collaboration were mentioned effective features of teacher learning and it is clear to see how this aligns both with the DSMRI and with Donaldson's vision of teachers continually learning and improving their practice in response to changing needs. However, the area where there was most difference was in the arena of digital technologies being used for teachers' learning. Donaldson saw digital learning as being one of the ways in which teachers could collaborate and learn and this has happened to a certain extent. At the time of the interviews almost all formal professional learning for teachers was on-line but it was interesting that some of the participants viewed this as missing elements of collaboration and hindering rather than helping their professional learning.

At the time of writing (2011), Donaldson would have been unaware of the ways in which digital technologies and the rise of social media and 'influencers' would shape future society including that of teachers' learning. The *social context* for many teachers now includes various social media platforms including Facebook, Instagram, X (formerly Twitter) and TikTok or companies such as Twinkl who mass produce resources for teachers. Posts and resources on these platforms are unregulated with many having only tenuous links to educational theory and yet they would appear to have significant influence on the practice of teachers and leaders in schools.

As a headteacher I have become aware of the impact of social media and of the ways in which companies who supply resources influence teachers' practice and at

times I find it worrying. I cannot however deny that this is part of the social context and therefore encourage my staff to question what they are seeing and to critically consider resources or ideas they access via digital technologies rather than glibly trying to replicate another's practice. By using the other aspects of the DSMRI, both internal and external I encourage my staff to filter what they are viewing, to critically reflect on whether the idea would work for their class and with their children or even if it aligns with what they believe about learning. In this way the DSMRI has proven useful in ensuring that teachers are learning and reflecting on their practice rather blindly following the latest trends without critical thinking.

6.9 Conclusion

The key findings from the data analysis indicated that the DSMRI was an appropriate lens through which to consider teacher learning. I considered which aspects of the DSMRI were found within the data and whether there was a strength of evidence either by the language used or the number of data points for each element. Reflecting on this, I recognised recurring themes emerging of teachers' identity, collaboration, and the role of leaders in creating school cultures which support learning or collaboration. I was able to reflect upon my own responses to the data linked to the DSMRI and begin to explore the potential implications for practice. I also considered the data in relation to other aspects of my study such as policy actors and the Donaldson Report (2011) and the implications of this within my role of headteacher. I will now discuss these findings in relation to literature and policy.

Chapter 7- Discussion of findings

7.1 Introduction

The chapter draws together the findings from my research with key points in the literature to address my research question: *How, if at all might a psycho-dynamic model support understanding of teacher learning and what are the implications for practitioners, managers and others who have an interest in ensuring career long professional learning?*

Returning to my original research questions I will draw conclusions from reading and data gathered to respond to my three sub questions:

1. What are some of the key features of the post Donaldson context of teacher professional learning?
2. Who are the policy actors that shape teacher learning?
3. What are the key features of the dynamic- systems model and could it potentially be used as an appropriate model to support understanding of teachers' learning?

Question one will lead me to clarify my findings on the following key aspects of teacher learning in a post-Donaldson context: learning which is collaborative; learning which is continuous; learning which is relevant; and the place of research in learning. In my final analysis of this section, I will discuss the mismatch between Donaldson's desire for learning to be within a 'masters' or similar framework and the lived experience of teachers.

In considering the second question I will discuss the awareness of policy actors in teachers' learning. I will explain the differences I noted from the distinct levels within the system and, how for classroom teachers, their learners, their school, and their Local Authority appeared to be major influencers on their learning rather than external policy actors. I will also discuss the emerging impact that social media and on-line learning is having on teachers' learning and the implications for

other policy actors who are behind the curve or unaware of this as an influencer on teachers' learning.

In answering the third question I will outline some of the key emerging themes from my research and how these are evident within the Dynamic Systems Model for Role Identity (DSMRI) discussing where in the literature and data gathered the DSMRI supports my understanding of teacher learning demonstrating how by applying this model my practice as a headteacher has changed.

This will lead me to my final research question and to discussing my reasons for concluding that the DSMRI is an appropriate model as well as acknowledging the limitations of my research. This will pave the way for my concluding chapter where I will describe ways in which I have applied the DSMRI to my practice as a headteacher, as a local authority senior manager, and mentor to aspiring leaders.

Using Practitioner Enquiry as my paradigm I sought to fulfil Wall and Hall's argument that 'practitioner enquiry will lead to an engagement with research as a means to generate answers to questions' (Wall & Hall, 2017, p.35). By answering the questions noted above, my research has supported me to better understand the process of teacher learning and the factors which may contribute to or detract from teachers' engagement in professional learning.

7.2 What are some of the key features of the post Donaldson context of teacher professional learning?

Donaldson's 2011 report is considered by many to be a pivotal document in relation to teachers' professional learning proposing changes for initial teacher education, on-going teacher learning, leadership, and professional standards (Forde & Torrance, 2017; O'Brien, 2012; OECD, 2015; Priestley et al., 2015). I was interested to see if this policy, which is now over ten years, old has shaped practice for teachers and others who are responsible for teachers' learning.

Having been a teacher in Scotland for more than thirty years, with twenty of this in senior leadership positions, I am very aware of the expectations placed upon teachers to continue to change and develop their practice. Although Scotland has a 'long and proud history' of developing the teaching profession (Kennedy, in Bryce et al., 2018, p.826) the expectations on teachers to constantly evolve and develop their skills has been more apparent since the both the McCrone Report (2001) and the Donaldson Report (2011). This shift is well illustrated by participant NE whose experience spanned a number of decades from class teacher to national leader,

> *In the early part of my career, there is no expectation that teachers would continue to develop. That was kinda just once you got your job, you just got on with it. And the big change of course, came with TP21 [A Teaching Profession for the 21st Century], which put a new expectation on people. (NE*)

Agreement was reached following acceptance of many of the recommendations of the McCrone Report and brought about significant changes to the salaries and working conditions of teachers and, in line with international tends, a more performative framework for Scottish teachers (Doherty & McMahon, 2007). Of particular interest to this dissertation was the contractual obligation that teachers complete 35 hours professional development annually. Following on from McCrone, Donaldson's 2011 report focused on the development of teachers across the education system, from Initial Teacher Education (ITE) to Headteacher. Drawing on international reading Donaldson's report emphasised Human Capital Theory as a premise for teacher development. This located teacher learning and development within a framework more commonly associated with economic development and emphasised the significant role that teachers could pay as part of the emerging 'knowledge economy' (Day & Lee, 2011; Menter & Hulme, 2011; Olssen et al., 2004; Schultz, 1992).

Donaldson (2011) made fifty recommendations in all. Most of the recommendations were around ITE but around ten related to teacher professional learning. For the

purposes of this study, I will focus on seven of these recommendations: 33, 34,36, 37, 44,46, and 47.

As outlined in chapter 6, Donaldson recommended that new models of teacher learning be considered. This is congruent with literature (Brouwer et al., 2017; Philpott & Oates, 2017; Wall & Hall, 2017) and what I discovered through interviews. All participants spoke of different forms of professional learning beyond the previously accepted model of formal input which was then cascaded to colleagues. In addition to being very expensive, the cascade model was slow to implement change and could lead to elements being lost in translation as the training passed through the filter of the 'expert' teacher who had received the initial input and was then transferred to colleagues(O'Brien, 2011). Moving away from this cascade model and embracing the notion that all teachers should constantly be refreshing their pedagogies adapting to societal change was also clear in literature (Campbell et al., 2016; Hattie, 2017; McMahon et al., 2015; Timperley et al., 2007) and from interviews. All teachers expected to continue to learn and to others to support teachers' learning.

I believe Donaldson's report has clearly impacted the context of teacher learning. The next few sections outline from my study where I believe these changes are evident, where there is disagreement, and where the context, particularly in relation to digital technologies, has gone beyond the expectations of Donaldson.

7.2.1 Recommendation 33 new models of professional learning

Recommendation 33 states:

> The balance of CPD activities should continue to shift from set-piece events to more local, team-based approaches which centre around self evaluation and professional collaboration, and achieve an appropriate blend of tailored individual development and school improvement. (Donaldson, 2011, p.96)

New models of professional learning were becoming apparent in the literature and for the for this study three in particular were mentioned: Learning Rounds; Lesson Study and Practitioner Enquiry (Brouwer et al., 2017; Philpott & Oates, 2017; Wall & Hall, 2017). From the interview data there were examples of models for supporting professional learning including Learning Rounds, Lesson Study and Practitioner Enquiry. All mentioned the significance of learning from others and collaboration. The use of emotive language such as 'fear' and 'scary' from the two most experienced teachers (T1 and T4) was recognition that learning in this way was challenging, however, both teachers determined that it was worthwhile. There was a definite move away from what Donaldson described as 'set-piece events' with a much greater emphasis learning activities which were school-based, completed as part of the working week and on-going rather than activities which were seen as one-off events with the expectation that learning by individuals would be cascaded to colleagues on return to school.

One of the most significant conversations I had around this recommendation and its focus on the development of the teacher as an individual was with T2. She was an experienced teacher and challenged the way in which I had previously implemented Practitioner Enquiries within the school. I had thought I was providing staff with a flexible approach where they were able to opt to complete an Enquiry on an aspect of the School Improvement Plan, however she challenged this view, reminding me that I had given them limited parameters of literacy and numeracy (the school's focus at the time) whereas she would rather have spent her time learning about neurodiversity as she had two neurodiverse children in her class whose needs were very different both from each other and from the rest of her Primary 1 class.

This was a significant insight for me and challenged some of my thinking around school improvement. Did I believe that I could enforce change or was I willing to take the risk of allowing teachers to lead their own learning? I decided to take the chance, especially from my understanding of teacher learning through the DSMRI. I was aware that so much of teacher learning was located within the individual

teacher and therefore sought to provide ways of facilitating teachers' personal learning interests, giving time for this, and weaving it into the systems and structures of the school. This insight brought together the insights gained from the DSMRI enabling me to implement Donaldson's recommendation with the emphasis on individual teacher learning but from a whole school improvement perspective.

7.2.2 Recommendation 36: learning should be a career long process

Recommendation 36 states:

> A new 'Standard for Active Registration' should be developed to clarify expectations of how fully registered teachers are expected to continue to develop their skills and competences. This standard should be challenging and aspirational, fully embracing enhanced professionalism for teachers in Scotland. (Donaldson, 2011, p.97)

Since Donaldson, the GTCS Standards for teachers have been revised twice (GTCS, 2012, 2021). Literature detailing the rising importance of the on-going nature of teachers' learning was wide ranging. Campbell et al. (2016) for example conducted a longitudinal study on teachers who have been given the opportunity to direct their own learning. They found that this increased teachers' professional capital and was beneficial to teachers and students alike. In New Zealand Timperley et al. (2007) found that teachers were now more inclined to recognise the need to continually learn. However, the purpose and effectiveness of professional standards was reviewed by McMahon et al. (2015). They highlight the tensions that can arise for teachers and others when there is a perceived forcing of learning through extrinsic means (such as professional standards) rather than an intrinsic motivation to learn by the teacher (McMahon et al., 2015). This emphasis on teachers' learning was clear for all participants with a clear expectation that teachers would continue to engage in learning throughout their careers. This was summed up by one teacher who said, 'we're here to do the best that we can and to do that we need to be always bettering ourselves' (T3).

However, the place of professional standards as a driver of teacher learning was not prominent across all interviews. It was most evident in the interviews with T3 and T4 and perhaps this is due to them being the closest to having to demonstrate alignment with the Standard for Registration. As a staff team we use the GTCS professional standards as part of the professional review process, aligning staff intended learning with aspects of the Standards. However, given some of my findings around collaboration each teacher now spends time with a trusted peer discussing their strengths and areas where they would like to improve their professional practice in line with the Professional Standards prior to the formal Professional Review and Development (PRD) meeting with their line manager. This has proven popular with staff with feedback from them being that they are keen to continue with this practice as part of their PRD cycle. Once again, my learning from the DSMRI around *culture, purpose and goals,* and *self-perception* influenced my behaviours regarding the implementation of policy this time in relation to engagement with Professional Standards.

7.2.3 Recommendations 34 and 37: that learning should have measurable impact

Recommendation 34

> Teachers and schools should plan and evaluate CPD more directly on its intended impact on young people's progress and achievements (Donaldson, 2011, p.96).

Recommendation 37

> At the outset of any CPD activity, the intended impact on young people, and the aspects of the relevant professional standard the teacher will improve as a result of the activity, should be clear. Subsequent PRD discussions should review progress with previous intentions. This process should be captured in a continuing online profile of professional development (Donaldson, 2011, p.98).

This was an interesting recommendation for all participants. There was overall acceptance of the fact that teachers' learning should result in a positive impact on

the children they teach and that when this happened, they engaged more in the process. However, when it came to 'measurable' impact there was less agreement with the QIO acknowledging it was challenging and NE describing it as being harmful to the process of teachers' learning.

As noted above I changed my approach to the PRD process including more opportunities for collaboration and reflection as part of the process. Within my school every member of staff completes a Practitioner Enquiry (PE). This is not necessarily clearly defined at the time of the PRD as part of the way in which PE has evolved is that teachers have a level of autonomy around what they would like to study and that this is related to the children they teach, including what they would consider to be an appropriate measure of impact. This is not defined during the PRD process but rather is evolves over a few months. It is important that what is measured as impact is reasonable and appropriate to the children and that, where an Enquiry hasn't had the desired impact, we celebrate this as learning. Thus, we are acknowledging that we learn from enquiring, whether there is an impact or not.

7.2.4 Recommendations 44, 46 and 47: accreditation of learning, particularly of school leaders

Of all the recommendations considered, this was the one where there was least positive evidence and most disagreement with the recommendation. Head Teacher (HT) and QIO were both fairly positive about their involvement in the *Standard for Headship* although QIO described it as being challenging. One of the teachers (T2) and NE both expressed that they felt the formalisation of learning detracted from its relevance and impact. None of the teachers mentioned a desire to gain additional qualifications. This was of particular interest as the early career teachers (T3 and T4) are part of a cohort of teachers who are actively encouraged to pursue Masters level learning. HT was very enthusiastic about her own learning and supporting the professional learning of others. She had completed further study to gain the *Standard for Headship* but studying for further accreditation although mentioned was not being actively pursued.

It is now a prerequisite for headteachers in Scotland that they attain accreditation in the *Standard for Headship* (General Teaching Council for Scotland (GTCS), 2021a). However, there is a national, and international, dearth of applicants for headteachers (Forde et al., 2013). Will the need for formal accreditation help or hinder the recruitment of suitable applicants for the post of headteacher?

T2 and NE dismissed the need to write about learning. As previously stated, I would argue that the process of writing helps one to clarify thinking and allow our thinking to be critiqued by others. Although the staff team in my school are not expected to write extensively on their Practitioner Enquiry(PE), we have developed a format for recording what we intend to study (Appendix 8) with everyone expected to share their learning with one another at the end of term. Once again, my learning from the DSMRI around the importance of *culture* in teachers' learning came to the fore. We have created a culture where sharing our learning and collaboration are commonplace, with teachers able to share their learning gained through PE whether there has been a positive impact on children's learning or not.

Overall, I would say that many of the elements expressed by Donaldson relevant to teachers as part of their on-going professional learning were clearly evident in both the analysed data and within literature. Applying learning I gained through my unpacking of the elements of the DSMRI and viewing teachers' learning as a complex rather than simple system has enabled me to appreciate the strengths and limitations of Donaldson. I have been able to establish a culture where teachers are capturing and sharing their learning, collaborating with one another with an opportunity for them to consider relevant ways for improvements to be measured which are meaningful to them and the children. I have also established a culture where there are numerous opportunities for teachers to lead learning and participate in learning around theories of leadership. Although this is not formally accredited learning it has provided the opportunity for a number of teachers some in formal leadership positions and others not to read and reflect upon aspects of leadership and my hope is that should any of these staff embark on accredited

leadership study they would be well placed to do so having had this opportunity in an informal setting.

7.3 Who are the policy actors that shape teacher learning?

Prior to starting my Doctoral studies in 2016 ‘policy actors’ was not a phrase I was familiar with. However, during my studies I have become more familiar with the concept and aware of the influence that various policy actors have within education. For the purposes of this dissertation, I use the following definition of a policy actor: 'an individual or social group concerned by the collective problem addressed by a policy can be considered as a potential actor capable of being part of the ‘arena’' p33. (Knoepfel et al., 2011).

One of the main findings of my research for my Masters in 2008 was that existing headteachers needed more support to ensure they were politically aware (MacDonald, 2008). In the intervening years, the level of political influence on education in Scotland has increased (Bryce et al., 2018) with wider societal changes in the use of technology impacting on education (Bulfin et al., 2016; The Scottish Government, 2016; World Economic Forum, 2015) and an increasing emphasis on the global economy including human capital theory (Lee, 2012; OECD & Schleicher, 2018). Each of these has potentially influenced teacher learning and I was interested to discover how these changes were manifest, who the associated policy actors were, and the level of influence they had on participants.

7.3.1 Scottish Government

From my reading it was clear that there has been a significant shift in Scottish Education towards a more centralised approach (Bryce et al., 2018; Doherty & McMahon, 2007). The Scottish government have sought to garner support for their proposed changes by looking to international bodies such as the Organisation for Economic Cooperation and Development (OECD, 2015, 2021) and establishing the International Council of Education Advisers Scotland (Scottish Government, 2020). They also made changes to Education Scotland (Redford in Bryce et al., 2018) and

have brought in numerous new legislative Acts and Bills plus new policies such as *The National Improvement Framework, Pupil Equity Funding, Getting It Right for Every Child, Developing the Young Workforce* (Scottish Government, 2016a, 2017, 2018, 2019a, 2019c, 2019b; The Scottish Government, 2014) which have impacted Scottish education.

The impact of these policies was discussed by teachers in small ways, with T2 discussing her need to learn how to teach children with who were neurodiverse, but the direct influence of Scottish government upon their professional learning was not particularly noted by the teachers themselves. However, for other participants the role of policies was more significant. HT and NE, in particular, were aware of the increased influence that Scottish government had on the pace and direction of change. HT expressed that this was not helpful: 'My view is that unfortunately education has become political whereas it should be separate. I think the day that Nicola Sturgeon said that education was going to be her legacy… that's what puts on pressure.'

All participants mentioned other agencies which are intricately linked to or funded by Scottish government. I will discuss the main agencies they mention: Education Scotland, the Regional Improvement Collaboratives; the General Teaching Council for Scotland (GTCS); local authorities; and schools.

7.3.2 Education Scotland and Regional Improvement Collaboratives (West Partnership)

Education Scotland was formed in 2011 as an amalgamation of four bodies. The larger two being Her Majesty's Inspectorate of Education (HMIE) and Learning Teaching Scotland (LTS) and the smaller National Continuing Professional Development team and the Scottish Government's Better Behaviour Better Learning team. This amalgamation means that Education Scotland is responsible for both the improvement and inspection of education in Scotland (Bryce et al., 2018) which has led to accusations it created a 'high stakes… low trust' environment for teachers (Priestley & Bradfield, 2021, p.9). The impact of

this on teachers' learning was echoed by NE, who said that teachers should be given 'an opportunity to reflect ...and don't bloody judge or measure them'.

There is a tension in governance around education in Scotland between local and national government (Bryce et al., 2018). In 2018 Regional Improvement Collaboratives (RIC) were established with the aim of pulling together staff from local authorities and Education Scotland to bring about the changes to the system set out by government in the *National Improvement Framework* (Scottish Government, 2016b, 2018). Most of those interviewed worked in the west of Scotland, aligned to the 'West Partnership' RIC. Both HT and QIO mentioned them as influencing professional learning. However, the lifespan of the RICs appears to be short-lived as in November 2023 the Cabinet Secretary for Education and Skills announce that funding for the RICs would be withdrawn (Gilruth, 2023).

The influence of Education Scotland in teachers' learning was noted by HT, QIO, C and NE but not by any of the teachers. As a researcher I find this interesting. Teachers are implementing government policy and are being influenced to do so by government organisations. They are then judged on their effectiveness in implementing said policies by the same government supported organisation. I would argue that this is an erosion of teacher agency and autonomy (Biesta et al., 2015; Buchanan, 2015; Oolbekkink-Marchand et al., 2017; Priestley et al., 2015) and in conflict with the principles of *Curriculum for Excellence* which sought to enhance said agency (Priestley et al., 2013).

7.3.3 General Teaching Council for Scotland (GTCS)

The GTCS sets out professional standards for teachers in Scotland (General Teaching Council for Scotland (GTCS), 2012, 2021b). These Standards are used at all stages of a teacher's career to support professional learning. T3 and T4 and all other participants mentioned them as having a role in teacher learning. Unlike the organisations above since 2012 the GTCS has been independent from Scottish government (Hamilton, in Bryce et al., 2018). It would appear, that as a policy actor, the GTCS is at least in some way fulfilling Donaldson's recommendations 36

and 37 of an organisation which supports teachers to continue to learn (Donaldson, 2011b).

7.3.4 Local Authorities

As mentioned above there are tensions in Scottish education between local and national government as, although nationally education is a devolved matter, the education function is discharged through 32 Local Authorities in Scotland (Redford, in Bryce et al., 2018).

All participants other then C mentioned the local authority as having influence on professional learning. T3 and T4 noted that the local authority provided them with specific learning opportunities whereas T2 was less positive mentioning that there can be pressure from the local authority who 'squeeze every last bit out of you.' The fact that almost all participants mentioned their local authority when discussing professional learning would indicate that they are rightly considered a lever of change within Scottish education as they have more influence over the working lives of teachers, the implementers of policy.

7.3.5 Schools: managers, teachers, and children

The policy actors who were mentioned most when discussing professional learning, mentioned by all participants at all stages of the interview process were the people teachers worked with: their peers, managers, and children. Collaboration, having the opportunity to learn with others was repeatedly mentioned by all teachers as benefitting their professional learning, with T4 commenting how she enjoyed the 'trigger of others to stimulate (her) own learning.' The significance of collaboration with peers in teachers' learning was supported in literature (Garet,et al., 2001; Guskey, 2002; Kennedy, 2016; Wilson & Berne, 1999)and reflected somewhat in policy (Donaldson, 2010; OECD, 2015, 2021; Scottish Government, 2017a, 2020) although, within policy collaboration was expected on many different

levels (school; local authority; nationally, and with universities) this was not necessarily reflected in the interviews with teachers.

HT, QIO, C and NE were also very aware of the influence of other teachers and were all keen to support and encourage collaboration. HT was aware of her responsibility to know her staff and their individual learning journeys, supporting and encouraging them in different ways. This support from managers was recognised by all teachers as being important for their learning. The place of the school leader/manager was also reflected in literature (Chapman, 2018; Leithwood et al., 2019; Seashore Louis et al., 2010; Welch & Hodge, 2018).

Teachers recognised that managers facilitated their learning by providing one of the most important resources for their professional learning- time. The understanding of time as a resource was reflected in all interviews, within literature (Eraut, 2000; Gaikhorst et al., 2019; Keay et al., 2019; McChesney & Aldridge, 2019; Wilson & Berne, 1999) and within policy documents (Donaldson, 2010b; General Teaching Council for Scotland (GTCS), 2012; GTCS, 2012; McCrone, 2001).

The significance of time as a resource cannot be underestimated. The challenge being that if teachers are spending time engaging professional learning i.e., professional reading, dialogue with colleagues or attendance at professional learning events, they are not in front of children teaching. Following the McCrone Agreement (2001) all Scottish teachers must dedicate 35 hours annually to their professional learning in addition to their 35-hour working week. These additional 35 hours are used by teachers to engage in professional learning of their choosing, with an account of what they have done being discussed via the Professional Review and Development (PRD) process. Some professional learning activities such as professional reading and research can be done individually. However, models of professional learning which include collaboration require teachers to be together, sharing the same space and time which impacts upon the autonomy of the teacher in determining when their professional learning will take place. If collaboration is expected at levels beyond the individual school as reflected in policy (Donaldson,

2011; Scottish Government, 2017a, 2020) even more time is required, as teachers need to travel to be with one another to collaborate effectively. Although on-line collaboration is possible from my research the teachers interviewed did not value it as much as face-to-face collaboration. The participation in and facilitation of collaboration therefore has implications for teachers and managers alike.

Finally in the interviews, children were mentioned as having a major influence on teachers' learning. All teachers spoke positively about learning which they could use with the children in their class. They wanted their learning to improve their teaching and saw a direct correlation believing that improving their teaching would have a positive impact on children's learning, 'learning of teachers must focus on children's learning' T1. The thought that teacher learning should impact children was also evident in literature (McChesney & Aldridge, 2019; Mowat, 2018) and policy (Donaldson, 2011; Scottish Government, 2016b). The challenge for teachers and policy makers, however, is perhaps what each group would mean by 'impact' on a child. For policy makers, operating within a neoliberal performance driven domain, this would be a measurable outcome such as exam results (Mowat, 2018) which could be different from the subtle shift or small gains noted by a class teacher in an individual child (Wills & Sandholtz, 2009).

As detailed above, there are often competing influences from different policy actors. Scottish government and local authorities will often come into conflict around policy implementation, particularly where Scottish government passes a Bill which must be implemented by each of the 32 individual local authorities. Local authorities serve different communities in different contexts, and schools also have their own unique contexts, sets of children and communities, yet all 32 local authorities and individual schools must be seen to implement the same policies. School leaders are viewed as key to the *National Improvement Framework* (Scottish Government, 2019, p.20) but how do they negotiate the difficult decisions they are faced with as they seek to enact and interpret policy within their own context.

7.4 What are the key features of the dynamic- systems model and could it potentially be used as an appropriate model to support understanding of teachers' learning?

7.4.1 Teacher Identity

When starting to review the literature around teacher learning it became clear that many models of professional learning were based on Human Capital Theory (Gillies, 2011; Harris & Jones, 2018; Livingstone, 2012) but I believe this oversimplifies the process of teacher learning and, unfortunately for policy makers, the current models of teacher learning are not having the desired impact (Harris & Jones, 2017a; Korthagen, 2017). I would argue that this is because within policy there is little recognition of the of the individual teacher, and their professional identity.

Of those with a responsibility for supporting teacher learning, HT appeared to be most aware of the significance of teachers as individuals and how their professional identity shapes them and their approach to professional learning. She recognised, like Hargreaves and Fullan (2012), that teachers go through various stages in their life, and as they do, so their identity as teachers evolves (Vermunt & Endedijk, 2011). As a leader it was important to her that she knew her teachers well in order to support their professional learning. During the interview she used the analogy of a chess board to explain how different teachers, at distinct stages in their career or with different personalities, would approach professional learning in their own way. Both T1 and T2 described the anxiety that engaging in professional learning can trigger, demonstrating that for them it was a very personal experience. NE was also aware that when engaging in Learning Rounds as part of professional learning she had to be mindful of teachers' feelings and seek to always provide supportive feedback in a non-judgemental manner.

The complexity of teacher identity, the factors which impact it, and what this means for teachers' professional learning became a key factor for my research. Kaplan and Garner's (2017) Dynamic Systems Model for Role Identity (DSMRI) located professional or 'role' identity within a complex dynamic system. By dissecting the different elements of the model, relating it to the data gathered

through interview and reading, I sought to discover if it would potentially be useful in applying to teacher professional learning in my school.

Individuals are complex and Dynamic Systems Models (DSM) are ways in which complex systems are represented taking account of the interdependent nature of different system elements. Having seen how models have been applied to different areas I was interested to note how a DSM could be applied to teacher learning. The notion that their learning was linked to their identities, and the model that the DSMRI provided, aligned with the participants views. QIO noted that it linked with the notion of teacher leadership as it provided 'the chance for learning to grow from the ground up.' He also liked the fact that the model was 'organic' rather than rigid.

Being organic is a key attribute of DSMs as changes and developments in one element have a knock-on effect to each of the other elements and thus the system continues to evolve (Parent et al., 2007; Song et al., 2016; Thelen & Smith, 1996). Kaplan and Garner's 2017 DSMRI seeks to identify the elements of the teacher's identity demonstrating how these elements combine to influence the emotions and ultimately the actions of the teacher. The model (as noted earlier) integrates the key elements of: domain; social context; dispositions; culture; ontological and epistemological beliefs; purpose and goals; perceived action possibilities; self-perceptions and definitions; emotion and actions.

In the following section I will explore how key elements within the model were evidenced within literature and interviews as being relevant to teachers' professional learning.

7.4.2 Ontological and epistemological beliefs

The first element which was key in both policy and interview was importance of individual teacher's ontological and epistemological beliefs. With 57 different mentions across all participants this was the element that was mentioned most in interview. The significance of teachers' beliefs about teaching is evident in a range of literature (Biesta, 2015; Coe et al., 2014; Kagan, 1992; Lavigne, 2014) and

within policy around teachers' professional learning as, although it is not mentioned within Donaldson (2011), the importance of reflecting upon one's beliefs and values is clear within the GTCS Standards(General Teaching Council for Scotland (GTCS), 2012c, 2021c).

Teachers described their learning as a journey which they expect to be a continuous process throughout their career. The view that teachers are on a journey of continual learning is also reflected in literature (Hargreaves & Fullan, 2012; K. Wall & Hall, 2017). But, as NE described, this has not necessarily always been the case and is quite a significant shift from pre-McCrone days where there was no expectation that teachers would continue to learn, they, 'just got on with it [teaching].' The teachers were also able to articulate that for them being a learner meant being they were reflective, critical, and active. This view of teachers as learners is in line with what Donaldson set out as his aspiration for the profession and in line with the GTCS Standards (Forde et al., 2016). There is much debate within the literature around the terms 'learning' and 'development' and the reasons for this shift in policy rhetoric (Lloyd & Davis, 2018; Ping et al., 2018; Watson & Michael, 2016) but these teachers appeared comfortable viewing themselves as learners.

This shift in viewing learning as a continual process could be linked to the neoliberal focus on measurable improvement (Scottish Government, 2016b) but, I would argue, it goes beyond that and links to some of the other elements of the DSMRI such as *purpose and goals* and *social context*. All participants were aware of the constant changes that children, and the societies they live, go through and that to meet the learning need of children then teachers need to be constantly engaged in learning.

This was particularly relevant for HT who believed that learning for both her and her staff team should be a continual process, 'we need to always be bettering ourselves'. This dual aspect of the HT is interesting as, not only does she articulate that she needs to keep learning, but also, she has a responsibility to lead others in ensuring they continue to learn. This is a pivotal role, as a school leader she

becomes a lever of influence (Gronn, 2000; Leithwood et al., 2019; Torrance & Humes, 2015) over the professional learning of the teachers in her school. Another belief about professional learning expressed by participants which came through in policy and literature was that their learning should be both collaborative and relevant. Some models of professional learning have been accused of being too theoretical and of not supporting teachers in the practical implementation of learning (Dimmock, 2016; Stenhouse, 1975). All participants in my study believed that learning from and with one another was important. However, collaboration is not always straightforward, nor does it always result in meaningful learning (Datnow, 2018; Gore et al., 2017; Hargreaves, 2019). Why then do those interviewed consider collaboration to be important?

I believe the reason is that collaboration provides the opportunity for the tacit knowledge of teachers (Eraut, 2000; Thurlings & den Brok, 2017) to be included in the professional learning process. Collaboration places value upon the lived experience and knowledge gathered over the years and capitalises on this. NE expressed her belief that the 'experts' in teaching and learning were teachers themselves and that by providing teaches with the opportunity to work together on professional learning this expertise was brought to the fore. Collaboration in this context is, as described by Robutti et al (2016) and Hargreaves and O'Connor (2018), where teachers learn by working together and it is through the act of working together that theory is put into practice and tested. Whether this tested theory is effective or not, learning should have taken place for those testing the theory. As described earlier providing opportunities for staff to work together was viewed as being important for HT in her role as supporting the professional learning of her staff particularly noting 'professional dialogue' as an avenue through which teachers learned together.

The teachers who had the most professional experience were T1 and T2. They expressed more beliefs around their learning than T3 and T4. They believed that for learning to be meaningful it had to be 'intrinsically motivated, engaging and relevant' (T2). This was also reflected by HT who described teachers learning as 'voluntary' in nature. For the others, C, QIO and NE this was also a key factor with

C concurring that ‘participants needed to own their own learning’; for QIO they needed ‘agency and autonomy’; with NE stating her belief that ‘I don’t know anyone who learns unless they want to… they need passion.’ However, this need for teachers to be intrinsically motivated is potentially a conundrum for policy makers who may be keen to ensure that teachers continue to learn and develop but this is often linked to the policymakers' ideas of measurable improvement. But what if the things that teachers are interested in learning about are not in line with their policy direction? And where does this leave me as headteacher? I too must balance the needs of individual teacher’s learning with the potentially competing expectations of other policy actors.

In Scottish education recently there has been a focus on the ‘empowerment’ of teachers and school leaders (Scottish Government, 2016a, 2019b). But this empowerment comes with conditions. Headteachers are required to empower their staff in line with the *National Improvement Framework*, which has a narrow focus on (measurable) ‘core skills’ of literacy and numeracy. This narrowing of the curriculum, including the introduction of national comparison tables (Scottish Government, 2022a) including primary school level data on literacy, numeracy, and attendance (Scottish Government, 2022c) puts pressure on headteachers and others to deliver on government set targets potentially introducing performativity (Ball, 2003) into the arena of teachers’ professional learning.

This leads me on to the expressed beliefs of some participants around the measurement of professional learning. Both T2 and NE expressed that they found judgement within the context of professional learning a hinderance rather than a help. However, QIO seemed to believe that professional learning should be evidenced and that, although it may be more challenging to do so, evidence of the effectiveness of professional learning should be by impact on pupil outcomes, an issue which has previously been discussed in this chapter.

All participants interviewed agreed that the main purpose of teachers’ professional development was linked to the development of children which connects to the deeper issue of teacher purpose and identity (Biesta et al., 2015; Fairbanks et al.,

2010; Pantić, 2015). The fact that teachers expect their learning to impact children aligns well within policy (Donaldson, 2010; General Teaching Council for Scotland (GTCS), 2021c; Scottish Government, 2016b) and wider literature around professional learning (Coe et al., 2014; Guskey, 2002b). As with all the other elements within the DSMRI the purpose and goals of the teacher are part of the dynamic system which form teacher's identity and, for professional learning to be effective it should align with what the teacher sees as her overall purpose and goal, and professional identity (Day, in Schutz et al., 2018). It is this inter-relationship which causes difficulties for policy makers, as just as the teacher's beliefs and values may be at odds with the policies which they are looking to promote so too may their purpose and goals. If the expectation from policy makers is an implementation of policy which is at odds with a teacher's individual purpose and goals, the teacher will once again be conflicted. And again, for me as headteacher, there is the challenge of balancing the needs of individual teachers, the school and policy actors.

7.4.3 Purpose and goals

Each of the teachers interviewed was at a different stage of their career and it was clear from literature that teacher's purpose and goals changed during their careers (Eros, 2011; Gore et al., 2017; Hargreaves & Fullan, 2012). From the interviews the more experienced teachers showed more depth in their reflections on purpose and goals. T1 emphasised the importance of listening to children and adapting her teaching to reflect this feedback whereas T2 emphasised the importance of developing other staff, seeing herself part of a team. However, the participant who showed greatest understanding of the differences within individual teachers was HT. Using the analogy of a chess game she was able to illustrate the individual ways different staff members responded to professional learning. Her purpose was to 'motivate and influence' the individual members of her staff team to continue their professional learning journey. In doing this she is fulfilling the leadership role expected of her in both policy (Donaldson, 2010; General Teaching Council for Scotland (GTCS), 2021a; Scottish Government, 2016b) and literature (Gronn, 2000; Harris & Jones, 2018; Leithwood et al., 2019; Seashore Louis & Lee, 2016).

Having responsibility for teachers' professional learning, QIO, C and NE all commented upon the need for them to ensure that learning opportunities provided were meaningful for teachers, '[I]… hook into where they [teachers] are at' C building on this and encouraging teachers learn knowledge, skills and abilities that would benefit children. The views expressed by T2 and NE that writing acted as a de-motivator taking away from the overall purpose of professional learning is at odds with Donaldson's view of professional learning which emphasises academic rigour (recommendation 44). This exemplifies the conflict that exists between the importance of tacit knowledge and codified knowledge (Eraut, 2000). As someone who has continually participated in professional learning which included academic study this raised questions for me about my own professional journey. Having completed various forms of academic post-graduate study have these all been of no value? I would argue not. I would argue that they have made me more reflective and critical, confident in my overall purpose and in fulfilling my professional goals. Each of my academic pursuits has been linked to my lived professional experience and has been developed and influenced by colleagues enabling me to marry research and practice, enhancing both.

7.4.4 Perceived action possibilities

Another aspect which is important in the DSMRI is that of *perceived action possibilities*. Described in the literature as 'teacher agency' (Biesta et al., 2015; Biesta et al., 2017; Buchanan, 2015; Imants & Van der Wal, 2020; King, 2016; Oolbekkink-Marchand et al., 2017; Van Der Heijden et al., 2015), this is the level of control teachers believe they have over their own actions. Agency 'is directly associated with action, that is things that individuals or collectives actually do while affecting their work and professional identity' (Imants & Van der Wal, 2020, p.2). T3 and T4 viewed professional learning as something they would expect to do and continue to do throughout their careers. They were keen for this to be practical and to participate with others in their learning process however, they were not as enthusiastic about professional development activities which they saw as having no practical implication, and therefore for them no value. Whilst T1 and T2 did not voice a contrary opinion it was clear that they highly valued their

professional agency and were keen to pursue learning opportunities where they exerted some form of control.

But learning which is self-determined is not for the faint-hearted (as stated earlier in this chapter): both T2 and T1 described 'fear' and it being a 'scary' process. However, they were both committed to putting themselves through this process. They were committed to sharing their practice with others in the room – something that can be potentially professionally exposing. It is these opportunities to share with others which Donaldson was alluding to (recommendation 33) and include newer models of professional learning such as Learning Rounds (Gore et al., 2017; Philpott & Oates, 2017b) and Lesson Study (Godfrey et al., 2019; Hart et al., 2011; Murphy et al., 2017). QIO, C and NE were also fully committed to professional learning where they provided the opportunity for teachers to work together. C viewed her role as a catalyst for teachers to learn from one another and QIO emphasised the support that being with others can be in the professional learning journey. NE viewed Learning Rounds as a way of providing teacher agency, delivering genuine collaboration, and maintaining a focus children's learning.

HT's *perceived action possibilities* reflected three distinct aspects of her role: her responsibility for the professional learning of others; her own professional learning; and the impact of the global pandemic. She recognised that her agency, and that of her staff, had been limited by the pandemic. She had altered her leadership style adopting a much more directive stance rather than her preferred distributed one. She commented that she, and her staff team, had developed a range of new skills including skills with digital technologies, a greater understanding of the significance of health and well-being and a depth of knowledge around health and safety issues. This had an impact on herself and her staff's capacity to take on other, more traditional aspects of professional learning linked to personal learning targets formed during the Professional Review and Development (PRD) process. Therefore, although the pandemic did bring about professional learning it was not driven by teacher agency. This is an example of the strength of the DSMRI when applied to teacher professional learning. The external context of the global pandemic had a direct impact upon the agency of

teachers which in turn impacted their actions and emotions and their professional learning. Being a dynamic system the DSMRI embraced the changes of the social context due to the global pandemic, providing clarity around the reasons why agency was affected and how this in turn impacted teachers' and HT's learning and behaviours.

Although at the time of interview (January 2021) we were still in a national lockdown (Scottish Government, 2021) HT was aware that she needed to focus beyond the current restrictions and plan for the future. Due to the impact of the pandemic, she recognised the increased focus she needed in her own professional learning enabling her to support her staff in developing collaborative ways of working both formally and informally. This, she believed would enhance both her own professional agency and that of her staff. In recognising this HT is demonstrating key aspects of policy (Donaldson, 2010; General Teaching Council for Scotland (GTCS), 2021a; Scottish Government, 2019b) but also aspects of leadership, linked to school improvement found in literature (Drysdale & Gurr, 2011; Hargreaves & O'Connor, 2018; Fullan, 2003b; Leithwood et al., 2019; M. Louws et al., 2020; Robinson, Lloyd, & Rowe, 2008).

As a headteacher I too had to recognise the changes we would need to go through as a school as we transitioned out of the restrictions of the pandemic. I was keen to hold on to some of the learning from the pandemic where, without a school improvement plan, teachers learning was exponential especially regarding digital technologies (Avidov-Ungar et al., 2023; Lewin, 2020). Not only did I want to ensure that the skills staff and children developed during the pandemic were built upon, but also that I, as a school leader, made space for teacher agency and, as Kaplan and Garner put it, the *perceived action possibilities* of the teacher became intrinsic in their learning and overall school improvement.

7.4.5 Culture

Another aspect which emerged as having particular relevance and was also an element of the DSMRI commented upon by all participants, was that of *culture*. All teachers considered the culture of the school a key contributing factor in their

learning. For HT establishing a 'learning culture' for her staff team was also important, viewing it as a vital part of her role. All participants with responsibility for supporting teachers' professional learning agreed that a culture which was supportive, non-judgemental, and collaborative was significant in facilitating their work.

The importance of culture is reflected in each of the GTCS Standards: registration, career-long professional learning, middle leadership, and headship. Within the *Standard for Registration*, it is around the cultural aspects for children, and although contributing to a learning culture is mentioned within the *Standard for Career Long Professional Learning*, it is not until we look at the more formal leadership roles of Middle Leadership and Headship that the responsibility for creating a learning culture comes to the fore. In policy there is an expectation that the headteacher will establish and maintain a culture of learning for both staff and children. The significance of schools creating a culture which is conducive to professional learning is also reflected in literature (Admiraal et al., 2021; Grosemans et al., 2015; Louws et al., 2017). The literature also describes how the school's culture, and particularly the culture supported by school leaders, had both a positive and negative impact upon teachers' professional learning (Day & Sachs, 2004; Harris & Jones, 2018; Seashore Louis et al., 2010). It is perhaps for this reason that the importance of school culture is a major feature of the various headteacher qualifications in Scotland (Forde et al., 2013; Reeves & Casteel, 1999; Reeves et al., 2003).

Establishing and sustaining a culture where teachers learn was one of my key priorities, especially post-pandemic. Taking on board learning from my study I was looking to establish a learning culture within the school where teacher agency was combined with opportunities for collaborative working to, as far as I was able, ensure that teachers' learning was intrinsically motivating for them. I considered the school's improvement planning processes differently and will explain this more fully in the concluding chapter. As a whole staff team, we worked on understanding Practitioner Enquiry (PE) and were supported in this by Professor Kate Wall from Strathclyde University. Her form of PE (Baumfield et al., 2016)

emphasises the relevance of the Enquiry for the individual, that any evidence gathered should be within the normal workings of a classroom, and learning should be shared. I was able to consider teacher learning through the lens of the DSMRI recognising the ways in which PE could be a form of teacher learning which would support me in developing a learning culture within the school.

7.4.6 The emotions and actions of teachers in the learning process

The final aspect which came through in interviews, and some literature but not policy, was the emotions of the teacher as they learn. Participants described both positive (passion, love, excitement, buzz and good about myself) and negative (fear, scared, worry, frustration, high anxiety, haunted, disillusioned, guarded and threatened) emotions in relation to professional learning. The negative emotions in particular were associated with learning activities which involved elements of collaboration with most positive emotions being connected to success when implementing new learning or supporting the professional learning of others.

This created a quandary for me as throughout the interviews participants were enthusiastic around collaborative learning and learning from visiting and watching others teach, yet, especially for the most experienced teachers, it also resulted in negative emotions associated with fear. Such tensions experienced by teachers when participating in collaborative learning is explored within literature (Datnow, 2018; Day & Lee, 2011; Day et al., 2007; Kennedy, 2016) with Schaap et al (2019) and Hargreaves and O'Connor (2018) asserting that these tensions can be managed when the culture of the school is supportive of teachers. This is one example of how a dynamic systems approach to teachers' professional learning embraces many different facets of the teacher as a learner and the context in which they are learning. It also provided insights for me as a school leader, with a responsibility for supporting teachers' professional learning, around the potential impact of my actions.

T1 and T2 the most experienced teachers were also the most vocal of the teachers around their emotional responses to collaborative learning. T1 had engaged in Lesson Study which, by the end of the process, she really appreciated having gone through. But she also admitted that at the beginning it was challenging as she struggled with emotions of fear. Having time to build up trust and work with the other two teachers increased T1's confidence, she commented that if she were to go through another round of Lesson Study she would, 'take more of a risk'. T2 acknowledged that she longed to be able to visit other establishments and learn from others who were more experienced than herself, but also that this came with the fear of being judged as part of this process.

For HT, the fear and worry were associated with the external demands being placed on schools particularly the way in which Scottish government policy around accountability appeared to be having a greater direct impact upon what happened in school. This was a recurring theme in literature where the negative impact of political policies of accountability were discussed (Buchanan, 2015; Lim et al., 2022; Perryman & Calvert, 2019; Wills & Sandholtz, 2009). She also expressed many negative emotions associated with the pandemic and the impact that it had upon herself and her staff, learning under extreme pressure in response to the changing delivery of schooling (Harris & Jones, 2020; Lewin, 2020; Wong, 2020).

QIO, C and NE were all aware that emotions played a part in teachers' professional learning but tended to describe their own experience rather than those of others. NE displayed the most empathy in this regard, recognising that teachers participating in professional learning, particularly when being observed by others, were at their 'most exposed.' Interestingly the emotions of the teacher when participating in professional learning are noticeably missing from educational policy and it is perhaps one of the factors which prevents policy from translating into practice. By ignoring the 'person' of the professional, policymakers look for quick fixes and simple solutions to what are complex problems and require complex, adaptive solutions from professionals who care and critically consider new developments throughout their careers. I would argue that this is what 'career long professional learning' should mean, enabling teachers to bring their

whole selves to the process of learning, creating a school culture which is supportive, enabling critical reflection and learning which is collaborative, trusting and potentially risk-taking.

7.5 Actions and the DSMRI

As described above, the elements of the DSMRI work together to influence the actions of the individual. In my analysis I focused particularly on the actions mentioned in relation to professional learning. The common thread from all participants was that teachers had to be intentional about their learning. A range of actions were mentioned including reading, dialogue with others, visiting other establishments/classrooms, and critical thinking and writing. It is interesting that there are a range of both individual and collaborative actions which contribute to teachers' learning and that traditionally more formal methods of teacher learning such as attendance at events or additional formal study were not mentioned as frequently as these more informal, workplace-based actions (Kyndt et al., 2016).

This reflects the growing move away from traditional methods of teacher development and towards development which is more closely located within the teacher's context (Donaldson, 2010; Grosemans et al., 2015; Hargreaves & O'Connor, 2018; Liu & Phelps, 2019; McMahon et al., 2015). This move places increased expectations on school leaders as they now have additional responsibilities in supporting the professional learning of teachers, a role which previously would have been the domain of external experts (Buttram & Farley-Ripple, 2016; Harris & Jones, 2017b; Leithwood et al., 2019; Seashore Louis & Lee, 2016; Timperley et al., 2007). Throughout her interview HT reflected this responsibility, acknowledging that she had a responsibility to 'orchestrate' professional learning for her staff.

As described above collaborative activities such as dialogue with others and being visited can result in negative emotions for teachers but all participants viewed them as actions which benefitted their professional learning. I believed that establishing a supportive culture as described above is one way I could mitigate against the tensions of collaborative learning. However perhaps there are other

actions such as: management of resources (including time); timing of collegiate activities; careful construction of the School Improvement Plan which more closely reflects staff learning needs which could enhance teachers' learning and collaboration. These were actions which I explored and will describe more fully in the concluding chapter. As school leader I am looking to facilitate meaningful teacher collaboration (Buttram & Farley-Ripple, 2016; Chapman et al., 2016; General Teaching Council for Scotland (GTCS), 2021a) which requires time. The provision of time for collaborative activities is a key factor which school leaders have influence over and a way in which they can support, or hinder, teachers' professional learning (Keay et al., 2019; Kyndt et al., 2016).

Finally, there were several individual actions which teachers and others recognised as being important. All agreed that professional reading and critical thinking were important, with the action of writing as part of professional learning a contested area. As previously described, I view the act of writing as one which facilitates reflection and allows both collaboration and critique. As part of the implementation of Practitioner Enquiry as a whole school approach to learning, I was keen to provide a way for practitioners to record their enquiries which would be shared with colleagues. Once again, the implementation of this will be explored more fully in the concluding chapter.

7.6 Conclusion

This chapter has brought together the findings from the interviews and literature in order to explore the research questions. The chapter has also begun to explore how my learning has impacted upon my practice as a headteacher. I found that by considering teachers' learning through the lens of the DSMRI I was better able to understand the complex process teachers go through as they are learning. The DSMRI was particularly helpful within the current policy and social context of Scotland, as we transition out of a period of national restriction. I was able to apply my learning to my current context supporting me in my duty to develop staff and ensure that children receive relevant teaching and learning opportunities.

As a headteacher I have a responsibility not only for my own learning but also for the learning of the staff and children in my school as set out within the item 3.3 of the *Standard for Headship* (GTCS, 2021a). Having analysed the available data and corresponding literature I concluded that the DSMRI was a robust model which considered many of the factors which other models did not. The context of the study included educating children during a global pandemic. As we came through the pandemic as a society we were faced with different pressures on an emotional, social, and physical level. Within this context teachers had to adapt their teaching numerous times and learn many new skills (East Renfrewshire Council, 2021; Harris & Jones, 2020; Wong, 2020). By applying the DSMRI to teacher learning during this time I was able to better understand the processes teachers were going through and the ways in which the restrictions and opportunities to teach in very different ways impacted upon the epistemological and ontological understandings of teachers and, as within any dynamic system, the consequential impact a change in one element had upon each of the others.

Many of the more recent policies around teachers' professional learning call for more opportunities for teachers to collaborate in learning (Azorín et al., 2019; Donaldson, 2010; Robutti et al., 2016; Scottish Government, 2019a). However, within these policies and papers many of the complex issues around teacher identity are not considered. This has led to time, money, and other resources being invested in teacher development, but which has not necessarily brought about change (O'Brien, 2011). By applying my understanding gained through my study I hoped both my staff team and I would reap benefits. I hoped that I would be better able to target resources and provide supportive systems which complement teachers' professional learning and bring about school improvement.

I recognise that my learning is in one primary school, in a particular point in history and with a particular cohort of staff. The data set was small with only four teachers, all from the same school, and only one representative of each of the other groups. It could be argued that this sample is too small to be of any significance. However, the primary focus of my study was to improve my practice as a headteacher in supporting teacher learning. Through conducting my study as a

Practitioner Enquiry (Wall & Hall, 2017) I have achieved this objective, applying research within my context and using it to address an issue of concern relevant to my practice.

In the next chapter I will discuss the ways in which I have used the findings of my research within my school to develop teachers' understanding of professional learning, the ways in which I have adapted systems and structures within the school to develop a learning culture and will describe how I have shared my learning beyond my school. I will explore the limitations of this study and suggest further research and possible applications of both Practitioner Enquiry and the DSMRI at school level and beyond, considering implications for individual teachers, headteachers and others responsible for supporting teachers' learning.

Chapter 8 – Conclusions and suggestions for further study

8.1 Introduction

This dissertation outlines the ways in which I sought to deepen my understanding of teacher learning through research. By conducting my study as a Practitioner Enquiry (Baumfield et al., 2013) I ensured my research was related closely to my practice as a headteacher in a Scottish primary school. My research involved reviewing relevant literature including but not limited to my policy context, interviewing teachers and others who have a role in supporting teacher learning. In this concluding chapter I will describe the ways in which my practice changed iteratively in response to the learning I gained by exploring my research question:

> *How, if at all might a psycho-dynamic model support understanding of teacher learning and what are the implications for practitioners, managers and others who have an interest in ensuring career long professional learning?*

Although this research was small-scale, focused on deepening my understanding of teacher learning in my school and how I might influence this, it has gone beyond the confines of my school. I have been able to discuss my findings with colleagues across and beyond the local authority where I work, contributing to ongoing discussion about how to create environments which support teachers' learning.

In shaping this concluding chapter, I will explore three main aspects of my learning: learning about teacher learning; learning about leadership; learning about my identity as a researcher, leader, and learner. Finally, I will answer the research question and describe how my practice has changed and continues to evolve, and the ways in which my research has gone beyond the confines of my school.

8.2 Learning about teacher learning

The overriding insight, gained from my research was around the complexity of teacher learning which was primarily due to Kaplan and Garner's 2017 Dynamic Systems Model of Role Identity. By breaking the model down into its component parts I was able to better understand it and, as shown in Figure 6 below, adapt it to be easily understood by participants in my study.

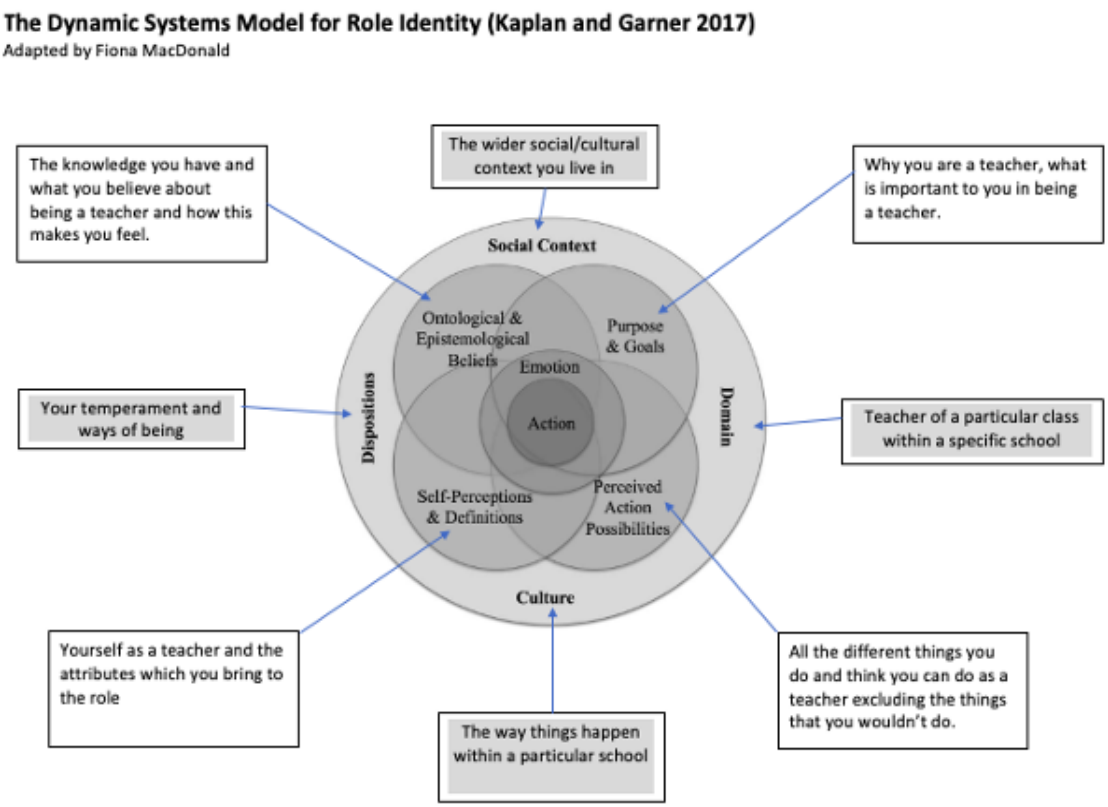


Figure 6: Annotated DSMRI

This model was the first one I had come across which embraced the identity of the teacher as a learner and sought to capture both the internal and external influencers on the teacher. Key to this model is the way in which the different elements impact one another, causing adjustment to each other. Initially the models I came across were basic input output models. Based on Human Capital Theory (HTC) (Gillies, 2011), these models oversimplified the teacher learning

process and I knew from personal experience they were not considering many of the factors which influenced teachers as they engaged in learning. As a teacher I had developed a range of pedagogies over the years. These were influenced by specific learning inputs, but it was only when I adapted them and refined them aligning them with my professional knowledge, the learning needs of the children, and the context of the school, that my practice genuinely improved.

As a headteacher, and senior leader I had also invested time and resource into delivering or commissioning others to deliver, professional learning inputs for teachers. I developed plans and measures of success for teacher learning only to see all the work and effort of teachers and others disappear when a new idea came along, or the results were not as predicted within the expected timeframe. This created in me a dissatisfaction with HTC models and their offer of simple quick fixes to complicated problems.

Looking to go beyond HTC I considered other models of teacher learning such as Hargreaves and Fullan's 2012 'Professional Capital'. They consider an expanded model of HTC making space for 'social capital' and 'decisional capital' however ultimately create another input/output model. I also explored Kennedy's 2005 'Framework for analysis' of models of CPD and although this framework was helpful in defining different forms of teacher learning and their intended outcomes there was still a lack of depth to the complexity of understanding of teacher learning. When comparing the DSMRI to these models I considered it to reflect more accurately the complex and often competing demands that learning places on the teacher.

Teachers are always learning and, in best practice, intuitively adapt their pedagogies to the needs of their pupils. However, this tacit knowledge can become outdated as the needs of children and society change. Another strength of the DSMRI is that it embraces these changes. This was particularly evident due to the timing of my research amid a global pandemic. Teachers' learning grew exponentially (Avidov-Ungar et al., 2023) but not in the usual planned ways:

learning happened through collaboration, with new pedagogies being embraced, and the DSMRI helped with my understanding of teacher learning during this time.

Collaboration was not just key during Covid, however. It was a recurring theme in my research around teacher learning evident both in literature and throughout the interviews. Teachers want to work together and have time to reflect with one another. However, my participants also expressed the need for professional learning to be applied in classrooms. Teachers in my study welcomed the opportunity to trial new pedagogies. The teachers who were newest to the profession looked for very practical strategies and pedagogies which they could immediately apply to their classrooms, however the most experienced teachers had a more critical eye and wanted to try new ideas and have more time to reflect on what they were implementing. The fact that teachers go through different phases in their careers was evident in literature (Hargreaves & Fullan, 2012; McMahon et al., 2015) and, although there has been some attempt within policy to take account of this (GTCS, 2021b) the many complex ways in which personal and professional experiences shape teachers' learning was best exemplified in the DSMRI.

There were two aspects of teachers' learning, revealed through my research, which required further examination: writing as practice within teachers' learning; and the place of social media. Two participants mentioned the negative impact of writing on professional learning viewing it as a performative exercise which was of very little value to learning. As a teacher, headteacher, and researcher I have learned both from the writing of others and through the process of writing itself. The process of writing allowed me to clarify my thinking and deepen my understanding of a subject. Participants' dismissal of an aspect of practice which I find valuable was challenging. Did I agree and, if so, was my writing in vain? Or did I disagree and negate the views of participants? After much consideration, and deliberation, I decided that I did value writing, but that for it to be part of teachers' learning it must be meaningful to them and not something they are completing as a performative task to satisfy the needs of others.

The place of social media in teachers' learning was an unexpected and quite perplexing discovery. As highlighted in the DSMRI, the social context within which teacher's learning occurs has an impact on the individual teacher and in recent years there has been an unprecedented rise in the use of social media. Forums, videos, and advice are all available and easily accessible. Teachers can, if they choose to, model their classrooms on ideas from other teachers who are willing to share their expertise and ideas. The challenge however is that with social media there is no process of review, no reality checking, and no accountability. A photograph or video may look convincing, but I have known very pretty classrooms which detracted from rather than added to the learning experience of children. Teachers focused on interesting displays of the handiwork rather than creating environments which celebrated and promoted children's learning.

Knowing that teachers are so heavily influenced by social media how do I ensure that the children I am responsible for are not subject to practices that are perhaps unhelpful or even harmful to learning? Returning to the DSMRI I believe that I need to bring some of the other elements such as encouraging teachers to reflect upon how new practices align with their own epistemologies and ontologies, the context of the school, and the domain of the class they are teaching, encouraging teachers consider to how what they are seeing aligns with these, and how these act as filters through which the critically consider learning from social media. Ultimately, I believe that the other aspects of teachers' learning, collaboration, reflection and deliberation of new pedagogies, will enable teachers to critically apply their learning from social media within their classrooms.

8.3 Learning about leading learning

As a headteacher I have a clearly defined role in supporting teacher learning. From this research I realised how, in recent years, this responsibility has increased. When I started as a headteacher in January 2003, professional learning was most often delivered by external facilitators, who were perceived experts in their field. Particular members of staff were chosen to go off to receive the input and then cascade their learning to the rest of the staff team. However, in addition to being

costly this was ineffective and new models of teacher learning began to arise (Donaldson, 2011; Kennedy, 2005). These newer models sought to ensure that teachers' learning took place closer to their context with more teachers able to access first-hand the same input rather than second-hand via the cascade model. Overall, this change has been well received by teachers (Black et al., 2016). However, it also places new pressures on school leaders.

School leaders are responsible for ensuring continued measurable school improvement and setting out plans to achieve this. New policies are frequently being introduced such as the presumption of mainstream education for children with Additional Support Needs(Scottish Government, 2017a), the National Improvement Framework(Scottish Government, 2016b), and Digital Learning strategy (Scottish Government, 2016a) which require adjustments to practice. To bring about improvement, teachers are often required to learn new practices or take on board advice around changes to pedagogy. This creates pressure on school leaders and, as part of my research, I was keen to discover who were the policy actors behind such policies and their influence on school leaders.

The Organisation for Economic Co-operation and Development (OECD) has a significant influence on education policy worldwide and in Scotland (OECD, 2015, 2021; OECD & Schleicher, 2018). Sponsored by the World Bank, the OECD has a particular neoliberal view of what both improvement and success look like (Olssen,et al., 2004). But this view appears to be shared by other policy actors such as Scottish government and Local Authorities, with policy actors such as the General Teaching Council of Scotland (GTCS) and Education Scotland ensuring compliance. Although most teachers in my research were unaware of the range of policy actors, those they were aware of (such as the Local Authority) were viewed as having a negative impact on their learning. Most policy actors, particularly Scottish government and its associated quangos, are often aligned to political parties or political leaders. School leaders need to be aware of the political landscape and its influence on policy but also, as recently demonstrated with the sudden demise of the Regional Improvement Collaboratives (RIC), how rapidly policy can change in response to government agendas (Gilruth, 2023).

By considering the influence of policy actors through the lens of the DSMRI I have been able to better understand some of the challenges for school leaders in taking on board the desires of these actors. Policy actors who are associated with government bodies, including the local authority, are most obviously linked to *social context* however may also impact *perceived action possibilities* and - with the increased emphasis on improving attainment - *purpose and goals*. School leaders must consider multiple teachers, and their associated identities, all interacting with one another as they seek to bring about improvement through supporting teacher learning. However, there was one element of the DSMRI reflected in my research where school leaders had a major role, *culture*.

The culture of the school is the place where school leaders have greatest influence, whether they are aware of it or not. Creating and sustaining a school culture which values teacher learning is crucial to school improvement. Teachers want to learn and want to learn in supportive environments (Black et al., 2016; Korthagen, 2017). However, what they want to learn is often more influenced by their pupils than the desires of policy makers. The challenge for headteachers is to balance the needs of individual teachers, individual pupils, whole school development needs, and priorities set by local and national governments. To do this headteachers must also ensure that their learning is current, relevant, in tune with the needs of staff and pupils, whilst remaining mindful of current policy and the political landscape.

In common with all teachers, headteachers are governed by Standards set by the General Teaching Council for Scotland (GTCS), 2021a). Unsurprisingly there is greater emphasis within this Standard on leading others and leading learning, but how do headteachers know they are on the right lines? As recommended by Donaldson, there is an additional mandatory qualification for anyone wishing to become a headteacher. But what about after that? Like their teacher colleagues, headteachers need time: time to read, collaborate, reflect, and be critiqued on what they are doing in a supportive culture. Establishing and nourishing a supportive learning culture is the remit of headteachers for their schools. For

headteachers this becomes the responsibility of local authority, government officials, and elected members.

One of the ways in which headteachers contribute to a learning culture, learning and refine their craft, is by mentoring others. In her interview HT described how her DHT and PT challenged her thinking forcing her to reflect and refine her ideas. Mentoring is a key theme of Donaldson's recommendations but limited to the support of student and newly qualified teachers, noting that the benefits appeared to be for both the experienced teacher and the person being mentored. Mentoring was evident in literature as a form of teacher learning (Admiraal et al., 2021; Daly et a., 2020). And although not mentioned within Donaldson mentoring, was also repeatedly mentioned in literature as being important for newly established headteachers (Cowie & Crawford, 2009; Reeves et al, 1998). Interestingly, Donaldson did not include mentoring in relation to headteachers or school leaders which I believe is a significant omission. It is clear that mentoring is of benefit both to the mentor and mentee with learning taking place for both parties.

I believe an essential part of being a leader is in supporting others to become leaders and learn how to lead. Mentoring is one way in which leaders can do this within their school and beyond. Headteachers are expected to create cultures which support learning with mentoring seen as one of the strategies to do this (see Standard 3.3.1, General Teaching Council for Scotland [GTCS, 2021a]). This supports and sustains the learning culture of the school. However, the promotion to headteacher is, at times, very daunting and newly appointed headteachers can be well supported by experienced colleagues. And, in common with other mentor/mentee relationships, the experience benefits both the more and less experienced colleagues. However, unlike newly appointed teachers and their mentors, there is no dedicated time for newly appointed headteachers and their mentors to learn the new skills needed for the post they are in. The mandatory qualification, although work-based, must be completed before the headteacher takes up post. Once in post, usually in a different school and perhaps even in a different local authority, there are many unknowns for the headteacher. If considered through the lens of the DSMRI it is understandable why newly appointed

headteacher may feel confused and uncomfortable. With concurrent changes within multiple elements of the DSMRI there is as a knock-on effect across the whole system as elements adjust to each another and potentially leads negative emotions and a lack of confidence within the role identity of the headteacher. Having a trusted colleague who has been through the same process themselves can provide beneficial opportunities for reflection and learning. There are benefits to the mentor too, as they can reflect on the reasons why they acted in certain ways at certain times and perhaps share some wisdom about mistakes they have made and how they would approach things differently. This sharing of practice can support the sharing of tacit learning and help transfer the theoretical learning acquired through the mandatory qualification into practice.

Finally, I learned that leaders need to be intentional about prioritising their own learning: perhaps even more than the teachers they are responsible for supporting. Like teachers, headteachers must participate in the Professional Development and Review (PRD) process setting out the aspects of their practice they wish to improve against the relevant GTCS Standards. They, like teachers, have priorities which may be linked to the School Improvement Plan (SIP). But, unlike teachers, headteachers must first decide what will be on the SIP and as noted above will be expected to deliver aspects of teacher learning as part of the SIP. As HT described in her interview, in order to both decide what will be on the SIP and how it will be implemented headteachers must be aware of changes by constantly reading, watching, listening, reflecting critically on what they have observed, considering it through the filter of their own school context. They must also be aware of policy and policy actors using the same critical thinking, backed by both experience and learning through reading, watching, listening and reflection to challenge and influence policy as it is implemented through the SIP. Headteachers have a crucial role not purely as implementers policy handed down from above – as many in authority would like (Harris & Jones, 2017a) - but have a vital role as policy actors challenging and shaping policy as it is implemented (Hill, 2012). Having the confidence to challenge policy requires a depth of professional understanding: to reach that depth, headteachers need to be continually learning. This however takes time with competing pressures and increased demands on the role of the

headteacher(Seashore Louis et al., 2010) time for professional learning for headteachers can be elusive.

8.4 Learning about my identity as a researcher

When embarking on my study I was clear that my research had to be of personal benefit, helping me understand more deeply an area I had responsibility for and develop my practice relevant to my role as a senior leader in education. I am an experienced headteacher and through this process have increased my abilities as a teacher-researcher.

As a practicing headteacher conducting research in my own school, I was very aware of the potential for my position of authority to influence participants due to the power differential between my position and the teachers in my school (BERA, 2018). Understanding and appreciating the importance of behaving ethically when conducting research, particularly with colleagues, is an area of personal development I gained through my study. Consideration of power differentials was a major contributor to my initial research design but was also apparent during the initial stages of the pandemic in Spring 2020 when society and education were under extreme pressure (Wong, 2020). I knew that I had to change the parameters of my study but also stop all interviews as I did not want to add to the stress of participants.

Linking back to my previous point about power relationships I had been keen to use mapping as a method of gathering data when working with all participants (Wheeldon & Faubert, 2009). Although I was able to use this method with three teachers it was not possible with the others due to their interviews being via video calls. Conducting interviews with participants via Microsoft Teams, Zoom or Google Meet was something I had not considered possible, or necessary, in the autumn of 2019 when I embarked on my research, but I had to adapt to suit the changing social context. And not only did I have to adapt my methods I also, due to the impact of the pandemic, I had to adapt my research questions widening the scope of my research and the range of participants. As a researcher I recognise that to conduct good, ethically sound, research I must be flexible and adapt to the

conditions I, or my participants, find ourselves in (Fraenkel et al., 2012). I realise that our situation was quite unique, but I believe that by being sensitive to people's needs I was behaving ethically, an important skill for a social sciences researcher.

Although much of my focus as a researcher was on the participants, I have also developed my skills in accessing and critically reviewing literature. When I completed other studies (such as my Masters and Postgraduate Diplomas and Certificates), most of the literature I reviewed was in books rather than journals. I would either buy or access texts from the University library. In this study I have read some books but much of my literature has come from journals, reports, websites all accessed by computer. This gave me access to an enormous variety of materials which I could only access if I learned new IT skills. But my skills with IT were not sufficient. I had to develop reading skills associated with skimming and scanning for information. Refining searches and reviewing literature critically enabled me to both consider others' viewpoints and allow myself to be challenged thus clarifying my own thinking. Researcher bias is very difficult to overcome (Denzin et al., 2006) but my hope is that by constantly reflecting on what I read, allowing my thinking to be challenged, especially where my thinking contrasted with literature, I was able to hold a mirror up to myself and recognise the biases I held. My hope is that in doing so I was able to mitigate some of the previously unconscious bias given that this had moved to my conscious self.

In addition to considering academic literature around teacher learning I was also, as researcher, engaging with policy. Considering policy as a researcher was, I discovered, very different from considering it as a headteacher. When considering policy as a researcher I asked more questions, looked for more connections across policy, and considered why some aspects of policy were readily accepted and others were not, and the reasons for this. This has brought me into conflict with colleagues on some occasions, particularly around the influence of the Organisation for Economic Co-operation and Development (OECD) on Scottish education. But having considered policy from a research perspective I am able to defend my views, citing other literature and sources of evidence. The

performance-driven culture which pervades education at the moment can very easily lead to a narrowing of the curriculum. With the recent move for primary school children to be included as part of the bean-counting process (Scottish Government, 2016b) my beliefs around the purpose of primary education and the holistic development of children have been challenged. Being a researcher has given me confidence to push back against this narrowing because I can present arguments as to why developing the whole child is of longer-term benefit to the individual and society and that we should aim to keep this as the true purpose of primary school education.

8.5 Changes I have made as a result of my studies

Although there have been challenges with me embarking on the research element of my studies in Autumn 2019 and only coming to an end in Summer 2024, there have also been advantages. One of the advantages is that not only have I made changes to my practice as headteacher, I have also been able to embed these changes and evaluate their progress iteratively.

One of the greatest insights I gained from the DSMRI was the complexity of teacher learning and that as headteacher the main way I could influence teacher learning was in the learning culture of the school. Knowing that I wanted to create a safe culture where teachers were willing to learn meant I had to model learning. I had to take risks and at times fail, being open and honest with my team about my failures as well as successes. This is a vulnerable place to be and may not always feel comfortable (Brown, 2018). However, I believe that I cannot ask my staff to be vulnerable, and share learning with each other, if I am not willing to do the same myself. This emotional aspect of learning, particularly in collaboration, was an important aspect evidenced in my research which is all too often forgotten by school leaders and policy makers alike. Creating a culture where teachers are comfortable to learn is challenging (Seashore Louis & Lee, 2016) as it is predicated on there being trusting relationships. By making myself vulnerable, sharing mistakes as well as successes, I began to build trust between myself and the staff team.

As part of building a learning culture, I listened more to my staff team, involving them more pro-actively in decision making, including the School Improvement Planning (SIP) process. Creating the SIP and reporting on school improvement is something which I am required to do. However, how I do it is where I have more autonomy. In April 2021 I decided to approach the SIP differently. We were emerging out of the pandemic, and I had the opportunity to change the format of the SIP and the structures surrounding it based on my research. I knew there were certain strengths of the school that I wanted to build on, and areas where we needed to improve, but I was also keen to merge this with areas of teachers' learning interests.

The Professional Review and Development (PRD) process is integral to policies such as GTCS standards (General Teaching Council for Scotland (GTCS), 2021c) and the National Improvement Framework (Scottish Government, 2016b). To better appreciate the learning needs of each staff member I decided to complete every teacher's PRD that year, around 25 one to one meetings. Building on my learning around collaboration I also wanted to provide an additional step to support teachers in preparation for the PRD conversation. I therefore dedicated time from two staff meetings for every teacher to meet with a trusted colleague to self-assess against the appropriate GTCS Standard, identifying areas of interest for their personal professional learning. By dedicating both my own and collegiate time for the PRD process I was placing a value on teachers' learning, contributing once again to the learning culture of the school.

Only after all PRDs had been completed did I begin to pull together the School Improvement Plan, opting to design the Plan as a 'driver diagram' a strategic planning tool which has become widely used in healthcare improvement (Healthcare Improvement Scotland, 2024) and is beginning to be used in education (Scottish Government, 2022). The plan (Figure 7 below) details the proposed learning actions, the ways in which these will support overall improvement and was shared with staff on the first in-service day. Staff could clearly identify the issues discussed during their PRD as part of the overall school plan.

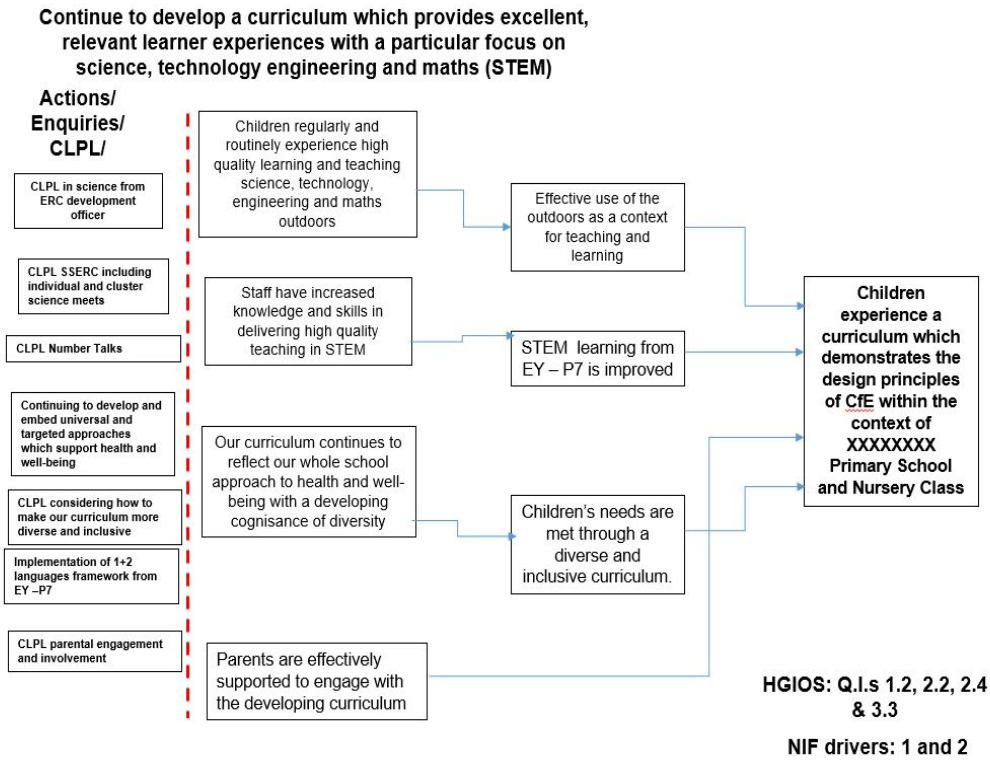


Figure 7: School Improvement Plan as a Driver Diagram

Also, during the first in-service day, I shared the DSMRI with staff as a recognition of the complexity of teacher learning and as an introduction to us working with Professor Kate Wall from Strathclyde University on Practitioner Enquiry. I was invited by my local authority to pilot a programme of professional development. The programme included input from Strathclyde University on Practitioner Enquiry (PE) and support for staff in identifying appropriate areas of study. The programme was well received and, after the first year, staff were keen to continue with PE (although with a few alterations and without the need for input from the university). This was an interesting development as everyone was keen to commit to PE but were happier to move forward with the support of peers and managers rather than staff who were external to the school. Since session 2021-2022 with the full agreement of all staff, we have continued to have PE as a core component of the learning culture of the school. To accommodate this, I not only changed the SIP but other core management structures of the school.

One of the post-McCrone changes to teachers' conditions of service is that every school must agree upon a Working Time Agreement (WTA) (Scottish Government, 2017c). The WTA is agreed by the headteacher and teachers usually negotiated by the school's union representative. The purpose of the WTA is to ensure that there is a balance across year of activities which support both the on-going running of the school and school improvement. The WTA is particularly important in ensuring that the additional time teachers have which are part of their contractually agreed 35 hour working week but not part of regular preparation and planning (7.5 hours per week) or class contact time (22.5 hours per week). Over the course of the year this equates to 195 hours of negotiated time. Teachers must also complete an annual 35 hours of professional learning. The WTA (Appendix 9) has an agreed calendar (Appendix 10) and for my school both the calendar and WTA have time allocated for Practitioner Enquiry.

Drawing from my learning from the DSMRI and other research around both teacher learning and leadership I established a particular form of Practitioner Enquiry with four main components (planning, completing template, implementing, and sharing findings) which take place at various points in the school calendar. Everyone knows they must commit to an enquiry and share this with colleagues. A simple single page A4 template (Appendix 8) supports this and provides a structure for the planning stage. The *planning stage* lasts for the first four months of the school session (August-November), with time allocated for collaboration, consultation, and research. This gives teachers time to get to know their class and identify an area of interest to them, which may or may not be related to the School Improvement Plan. By providing such a long lead in time with options around the form and content of the enquiry I am drawing together many of the elements of the DSMRI, allowing teachers to personalise their learning. Once each teacher has decided on their enquiry *templates are completed and shared* on the wall of the dedicated professional learning space.

The next stage of the process (December-May) is the *implementation stage* where staff try out their idea gathering appropriate and meaningful evidence. The final stage in the process is the *sharing of findings* and takes place over two staff

meetings. Everyone participates in this, sharing their findings in the format that suits them best. Changes can occur during the implementation stage and not all enquiries produce the results that were hoped for; however, staff are willing to share their successes and failures, knowing that learning comes through both. This year, for example, one teacher's enquiry with a small group of reluctant writers went so well that, during the implementation stage, other teachers asked her to share her expertise with them. I arranged time for her to team teach with four other teachers who were keen to learn this new approach. Interestingly the impetus for this had come from the teachers themselves, seeing the marked improvement in the children's quality and motivation for writing rather than a specific school priority. This exemplifies for me the strength of our whole school learning culture, teachers learning from one another with management decisions supporting teachers' learning.

Although the main focus for my study was improving my practice in my own school the influence went beyond both my school and local authority. As a headteacher I am expected to contribute to system-wide improvement (see 3.3, General Teaching Council for Scotland [GTCS, 2021a]). One of the ways I have done this is through presenting my learning around the DSMRI and developing a learning culture to a range of colleagues within my local authority. I have presented to aspiring leaders, participants on the into headship programme, and at a recent local authority leadership seminar. I have also shared my learning informally with headteachers and into headship participants whom I mentor.

As part of my studies in Spring 2021, I contacted Joanna Garner the co-creator of the Dynamic System of Role Identity (DSMRI) (Kaplan & Garner, 2017) initially sharing my adapted model her. Joanna Garner and Avi Kaplan both replied, interested in my use of the model and positive about the way I had interpreted it. In December 2023 I once again contacted Joanna to give her an update on my use of the model with headteachers and senior leaders at the local authority conference. Following this, I met with Joanna and Avi via a video call to share how I had used the DSMRI to develop my understanding of teacher learning and the establishment of a learning culture within my school. As a result, they asked me to

join a Professional Learning Community (PLC) of scholars around the world who are applying the DSMRI to their practice. They also invited me to present at an on-line symposium for members of the PLC. Although this experience took me out of my comfort zone, it was a great opportunity to contribute to the learning of others in different countries and across different fields of education.

In June 2024 my school was inspected by His Majesty's Inspectors of Education. As part of the inspection process the contribution of the learning culture for staff to on-going development of learning and teaching for children was recognised. Learning and Teaching (QI 2.3) is one of the two national Quality Indicators (Education Scotland, 2015) we were inspected on. I have been asked to share a 'best practice' piece indicating the processes we have gone through to develop our learning culture, emphasising its very positive impact upon teaching and the resulting effect on learning for children.

8.6 Limitations and suggestions for further study

There are limitations to this study. As a headteacher I have particular insights into the lives of teachers in my school and these will have shaped my thinking consciously and unconsciously when completing my study. However, I recognise that I come to this study with various experiences and beliefs that have shaped me both personally and professionally. In addition, although I tried to mitigate unequal power dynamics through the methods used, this is something I could not avoid. I am in a leadership position within education; it would be unlikely that I could conduct any research relating to classroom teachers where this dynamic would not exist. Perhaps one of the biggest limitations however is the timing of my research. Completing my research during a pandemic was challenging and although it gave me quite unique data I wonder if it potentially placed a greater emphasis on some aspects of teacher learning and leadership which would not otherwise have been mentioned. This also leads me to question if I were to ask the same questions of participants now, post pandemic, what different insights I would garner. Despite this I believe that I gained valuable insights particularly due to the pandemic and was able to use my learning to influence my practice and the

learning culture of the school as we recovered from the upheaval of working during a time of restrictions on practice.

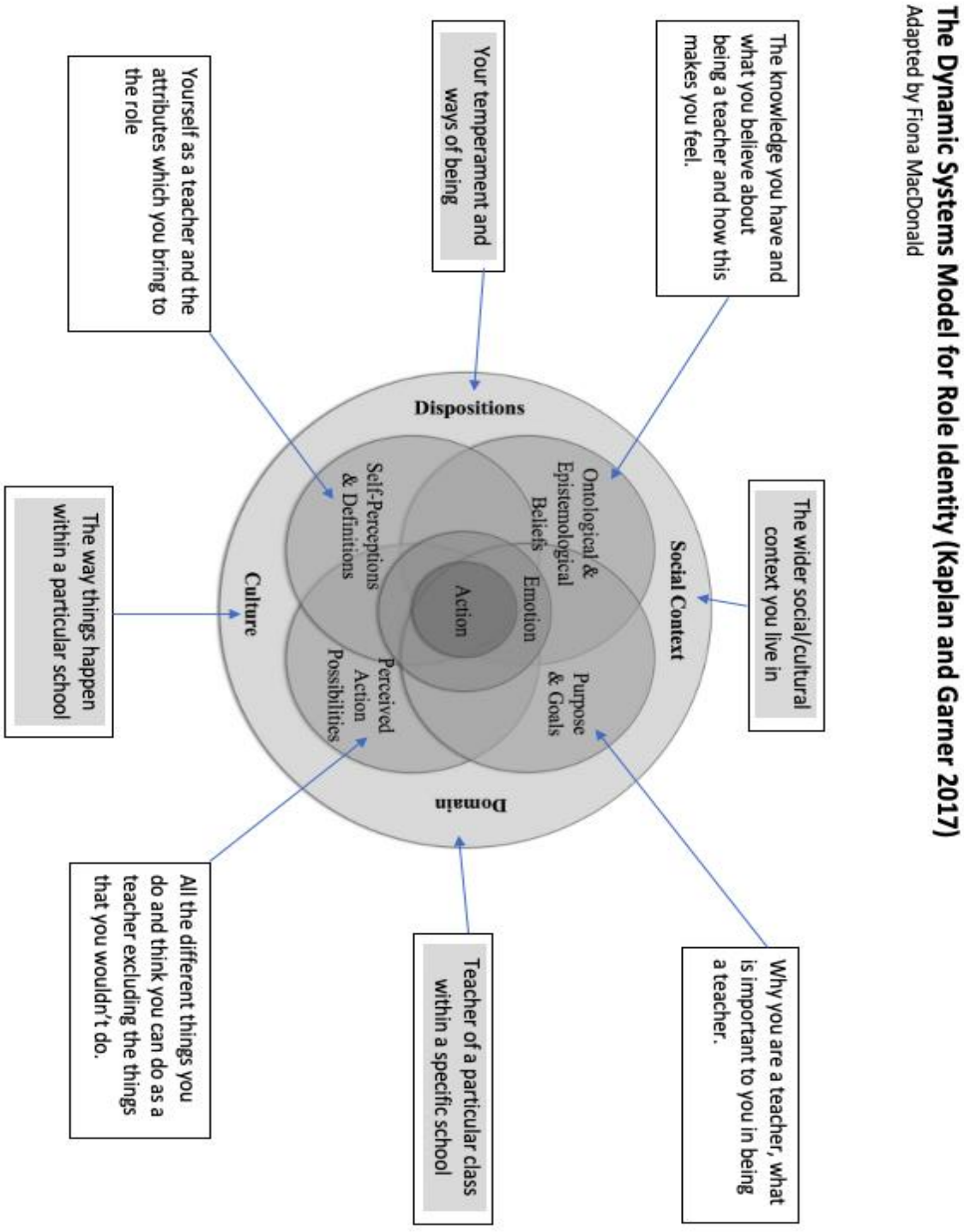
Conducting qualitative research (including the transcribing and analysing of interviews) is a lengthy process, particularly when working full time and studying part time. This necessarily limited the range and numbers of participants I could interview. I only interviewed four people who are not classroom teachers, with each having a different role in supporting teacher learning. This means there are many others in the same role or who have other responsibilities for supporting teacher learning whose views I have not sought and who are therefore missing from my data and analysis.

Having begun to share my learning from the DSMRI, developing a learning culture, and the use of Practitioner Enquiry I would be keen to share this more widely. I find that for each audience I clarify my thinking as I articulate my learning. This is particularly true when I enter into discussion with others around the processes I went through as they look to deepen their learning and consider how they too may change their practice. In order to develop this more fully it would be helpful if there could be further research done on some of the aspects raised in this dissertation. I would like to consider more deeply the place of social media and the potential development of Artificial Intelligence (AI) in the lives of teachers and how, as a school leader, I seek to highlight the positive whilst addressing potential negative impacts of new technologies.

I was very motivated by engagement with Joanna Garner and Avi Kaplan the authors of the Dynamic Systems Model of Role Identity (DSMRI) (Kaplan & Garner, 2017) and enjoyed contributing to their work as part of the Professional Learning Community (PLC). I know, through being part of the PLC that there are many other scholars considering the DSMRI within their educational context and I am interested to see how further research around applications of the DSMRI in different cultures, settings, and disciplines.

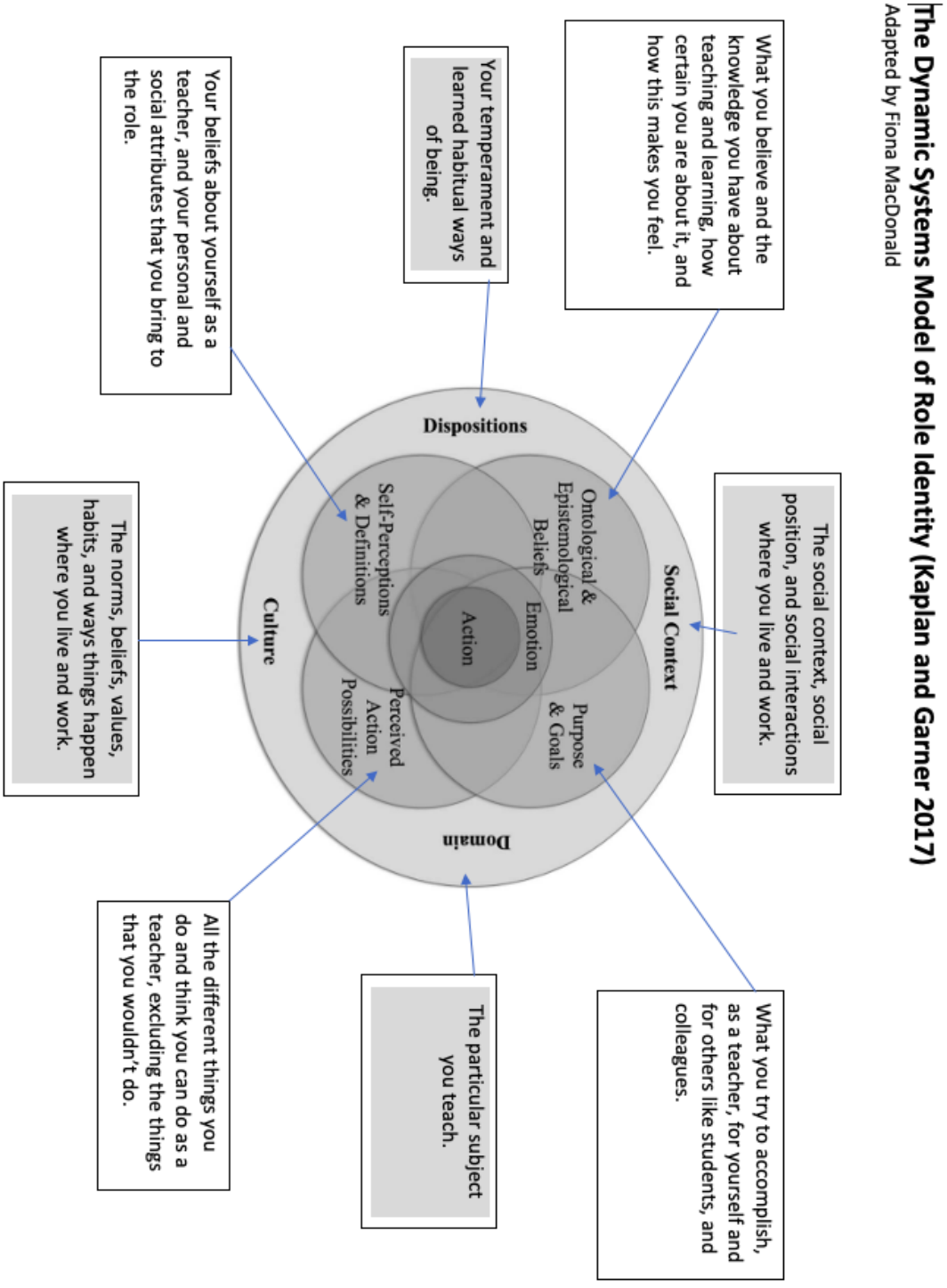
The final aspect which I believe deserves further research is Practitioner Enquiry itself. Throughout this dissertation I have intentionally used the term ‘Practitioner’ and ‘Professional’ interchangeably. This is due to my belief that all school staff, not just teachers are part of the improvement planning process and have a contribution to make to teaching and learning in the establishment. Although the focus for this dissertation was teachers’ learning other staff including support assistants and early years practitioners also completed Enquiries. When sharing my learning with colleagues, particularly leaders of Early Years establishments, it has been this aspect where, as part of the learning culture, every member of staff completes an enquiry I have had the most enthusiastic responses. I believe that I have evidenced where Practitioner Enquiry has contributed to teacher learning within my school (including nursery class) but believe there is scope for further research into its application more widely across establishments and disciplines.

Annotated DSMRI



Appendix 2

Avi Kaplan's annotated model of the DSMRI



Participant Information Sheet

University of Glasgow

College of Social Sciences

Study title: What factors enable teachers' professional learning in relation to changing pedagogy and practice in mathematics when using Lesson Study ?

Researcher: Fiona MacDonald

Head of Service , ERC : Janice Collins (Janice.Collins@eastrenfrewshire.gov.uk)

Chief Education Officer, EDC: Jacqui MacDonald (Jacqueline.macdonald@eastdunbarton.gov.uk)

Supervisor: Robert Doherty (robert.doherty@glasgow.ac.uk)

Trial dates: October 2019-October 2020

Level of study: Doctoral candidate dissertation research

Introduction

You are being invited to take part in a research study that will be taking place at Cross Arthurlie Primary School. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Research Details

You are being asked to take part in a research study involving your perceptions Lesson Study as a form of Career Long Professional Learning (CLPL). Lesson Study was introduced to Cross Arthurlie for the first time this year and I am interested in discovering your thoughts on it as a form of CLPL.

The duration of the study is 9-12 months. During this time, data will be collected by questionnaires; focus groups and one to one interviews. All data collection will be conducted by me, the researcher, and will take place in school. Should you choose to participate you will be released from class teaching for the duration of the interview which will last approximately one hour. Time for focus groups and questionnaire completion will be part of the school's working time agreement.

The purpose of this study is to better understand how you have found participating in Lesson Study. All questions will involve feelings regarding Lesson Study as a form CLPL and the impact upon your practice. You will not be asked sensitive questions, nor will you be asked to do any strenuous physical activity.

You will be audio-recorded during the focus groups and interview and together we will develop concept maps recording on paper your views of participation in Lesson Study. Audio recording is

required for participation in this study. If you do not wish to be audio-recorded, it is not possible to participate in this study.

Potential Benefits

Should Lesson Study be considered an effective form of CLPL it will be repeated in Cross Arthurlie. The results of this study will influence its future design. It is my hope that you will gain insight and professional development through this research; however, you may or may not have any direct benefit from being in this research study. This study is designed to learn about teachers' view of the impact of Lesson Study thus the study results may be used to help other teachers in the future.

Foreseeable risks

As this study will happen in school where I am both researcher and headteacher anonymity will be difficult to ensure, I will however use pseudonyms throughout this study.

Your participation in this study will likely not involve any physical or emotional risk beyond that of everyday life. However, if you become tired during the tasks, you may take a break at any time. At any time, if you would like to stop discussions, you may. If you feel uncomfortable, you are free to not answer or skip to the next question. If at any time you would like to withdraw from the study, this is entirely acceptable, and no consequences will arise.

Confidentiality

The participants' personal details will be kept confidential. All participants will be identified by pseudonym throughout all documents and in the research paper.

Please note that confidentiality will be maintained as far as it is possible, unless during our conversation a topic arises that indicated someone might be in danger or harm, in which case, I may have to inform relevant agencies.

Results of this study may be used in publications and presentations. I all cases, confidentiality and privacy will be fully maintained. Participant's voices will not be used but direct quotes may be used.

All data will be securely protected by password. Only my supervisor and I will be able to access the data. Data will be kept until January 2022, at which time the data will be destroyed and deleted.

Participant's rights

Participation in this study is voluntary. You may withdraw from this study at any time – you will not be penalised in any way or lose any sort of benefits for deciding to stop participation. If you decide not to be in this study, this will not affect the relationship you have with the school, myself or the other teachers in any way.

If you decide to withdraw from this study, I may ask if the information already collected can be used but you may also choose to withdraw this data.

Financial Information

Participation in this study will involve no cost to you. The researcher will cover any materials needed. You will not be paid for participating in this study.

Approval from East Renfrewshire Council and East Dunbartonshire Council

This project is fully supported by Mrs Janice Collins, East Renfrewshire Council, and Mrs Jacqui MacDonald, East Dunbartonshire Council, they are fully aware of all the details regarding the project and are supportive of research being conducted during the school day.

Confirmation of Ethics approval

This project has been considered and approved by the University of Glasgow's College Research Ethics Committee.

Provided are the contact details for further information and where to pursue a complaint, if one should arise:

College of Social Sciences Ethics Officer, Dr Muir Houston: MuirHouston@glasgow.ac.uk

Participant consent

University of Glasgow
College of Social Sciences

Title of Project: **What factors enable teachers' professional learning in relation to changing pedagogy and practice in Career Long Professional Learning?**

Name of Researcher: **Fiona MacDonald**

I confirm that I have read and understood the Participant Information Sheet for the above study and have had the opportunity to ask questions.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

I consent / do not consent (delete as applicable) to interviews being audio-recorded.

I acknowledge that participants will be referred to by pseudonym.

I acknowledge that there will be no effect on my employment as a teacher in East Dunbartonshire Council arising from my participation or non-participation in this research.

All names and other material likely to identify individuals will be anonymised.

The material will be treated as confidential and kept in secure storage at all times.

The material will be destroyed once the project is complete.

I agree to waive my copyright to any data collected as part of this project.

I understand that other authenticated researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.

I agree / do not agree (delete as applicable) to take part in the above study

Name of Participant …… Signature ……..

Date ……

Name of Researcher …… Signature ……..

Date ……

End of consent form

Interview questions for teachers

Interview Schedule

University of Glasgow
College of Social Sciences

Title of Project: **Can applying a psycho-dynamic model support understanding of teacher learning and what are the implications for practitioners, managers and others who have an interest in ensuring career long professional learning?**

Name of Researcher: **Fiona MacDonald**

Introduction
Thank participants and remind them that at any point they may terminate the interview and that their participation is in line with the information and consent which they have previously signed. Explain that I have a number of questions to explore their thoughts and responses to Career Long Professional Learning (CLPL). The questions will be similar for each of the participants and there is freedom for each participant to expand on points as they see fit. Each participant will co-construct a concept map with me as researcher.

Questions

1. What do you consider the phrase, 'Career Long Professional Learning' means and how does it relate to you ?

2. Can you think of an aspect of your professional learning and what helped/hindered your learning?

3. What would you understand as the best conditions to support your professional learning?

4. Looking forward, are there particular things you would like to see included within your professional learning?

5. *(Show the annotated DSMRI).* Here is one model of professional learning, which is an attempt to describe the many aspects involved. Seeing it for the first time,

   5.1. how would you evaluate this model?
   5.2. Are there aspects of this model which you think are particularly relevant/ irrelevant for you?
   5.3. Do you think this model is helpful in describing teachers' professional learning?

Conclusion

Thank participant, ask if anything about process we had not covered during the interview.

Interview questions for manager

University of Glasgow
College of Social Sciences

Interview Schedule

Title of Project: **What factors enable teachers' professional learning in relation to changing pedagogy and practice in Career Long Professional Learning?**

Name of Researcher: **Fiona MacDonald**

Introduction
Thank participants and remind them that at any point they may terminate the interview and that their participation is in line with the information and consent which they have previously signed. Explain that I have a number of questions to explore their thoughts and responses to Career Long Professional Learning (CLPL). The questions will be the same for each of the participants and there will be freedom for the participant to expand on points as they see fit. Each participant will co-construct a concept map with me as researcher.

Questions

6. What do you see as your role in professional learning:
   - 6.1. For yourself
   - 6.2. For your teaching staff
   - 6.3. For others

7. If you find CLPL helpful what makes it so?

8. Are there aspects of you find challenging? what are they and how does this impact you?

9. Is there anything about your practice that has changed recently as a result of engaging in CLPL? can you describe this?

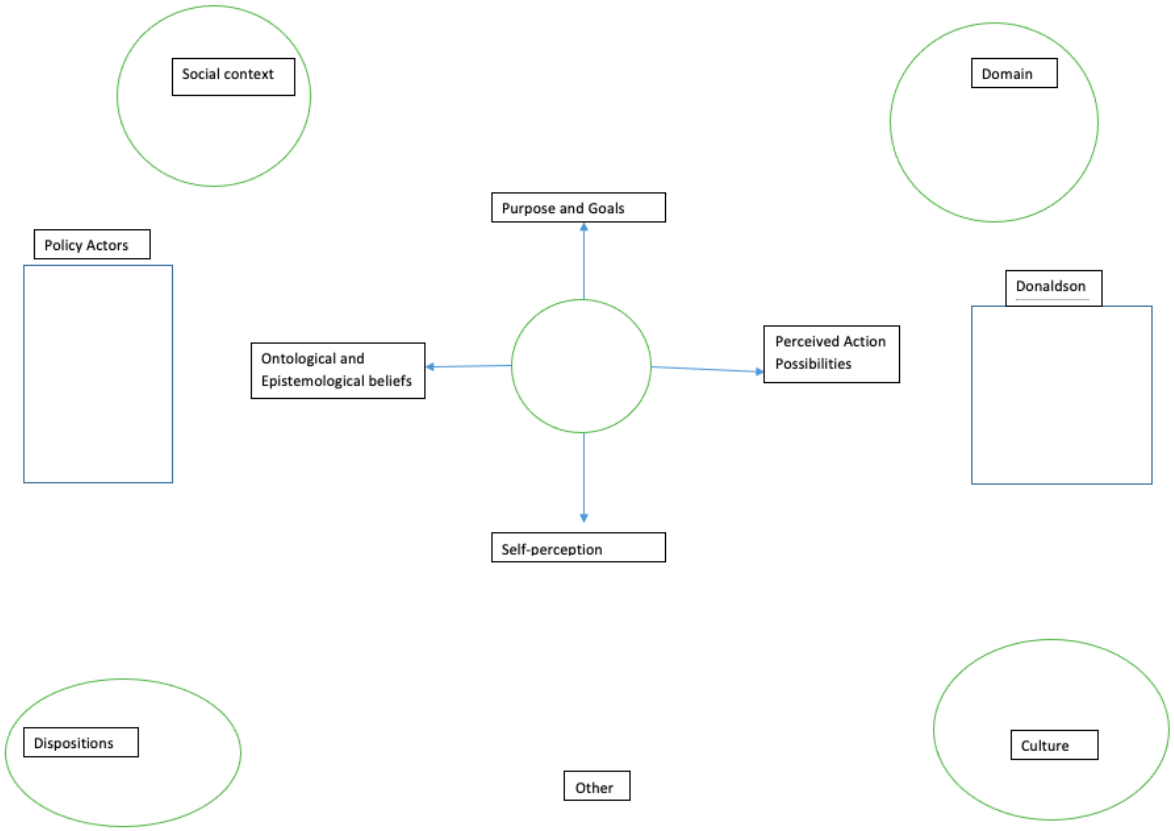
10. Have you had responsibility for changing the practice of others recently? what did you view were the key parts of the process?

11. If you were to do it again what changes, if any would you make?

Conclusion

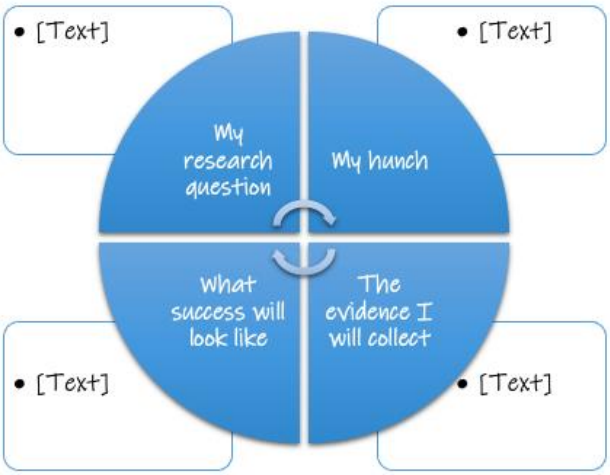
Thank participant, ask if anything about process we had not covered during the interview.

Sample blank map for data analysis



Sample of School blank Practitioner Enquiry recording sheet

Name :



FORM A

35 HOUR WEEK FOR PRIMARY TEACHING STAFF AGREEMENT ON COLLEGIATE WORKING TIME

SCHOOL: XXXXX Primary SESSION 2024-2025

[Weekly Breakdown:
Teaching 22½ hours (max)
Preparation & Correction 7½ hours (based on max teaching time)
Balance available 5 hours per week]
Annual time: 39 x 5 hours = 195 hours

Key Priorities	Exemplar Activities	Agreed Time
Additional preparation & correction	Preparation for teaching and ongoing correction of pupil work.	31
Planning	Which may include activities such as: - Preparation of forward plans - Professional dialogue - GIRFEC (Education) planning/JST	47
Assessment and Moderation	Assessing, monitoring and tracking of pupil progress and achievement, which may include: - tracking meetings - moderation activities - ERC moderation- 6 hours (4.5 meetings + 1.5 travel) - professional dialogue	24
Preparation of reports, records etc.	Recording pupil information or reporting on pupil progress, which may include activities such as: - Preparation of annual summative report - Class blogs - Transfer of information - Reports for other professionals	45
Curriculum Development	Development of the curriculum in accordance with the School Improvement Plan (will depend on SSERC input). Working Party- 7 or 8 hours Practitioner Enquiry – 6 or 5 hours	13
Meetings with parents	Parents' Evenings.	14
Staff meetings	Scheduled whole school and departmental meetings.	8

Union meetings	When required over the session	2
Professional Review and Development	Annual review meeting and preparation of Professional Learning Plan.	2
Flexibility	Any agreed additional activities eg. 4 hours after school or 8 x ½ hour lunchtime (inc one concert night)	9
	Total	195

Signed (Headteacher)

Signed (Teachers' Representatives)

XXXXX Working Time Agreement (WTA)

Our WTA is currently in draft. A meeting had been organised for teaching staff to meet with the EIS representative but was cancelled due to HMIE inspection. Teachers were asked by their EIS representative to email any elements of the WTA they wanted to change or remain the same, no issues were raised. In order to proceed with a school calendar this WTA is submitted in draft acknowledging that adjustment may be made through negotiation in August.

This was discussed with all staff and signed by the EIS rep on behalf of the whole staff.

Signed (Head Teacher) Signed (Teachers' Representative)

Fiona MacDonald XXXXX
Date Date

Appendix 10

School Collegiate Calendar

XXXXX Primary School
Calendar – 2024-2025- Updated

Term 1	Monday	Tuesday	Wednesday	Thursday	Friday
12Aug	In-service day 1	In-service day 2	Planning		
19 Aug	Planning				
			Staff meeting		
26 Aug	Planning				
		JST P1	Collegiate Planning		Blogs updated
2 Sept					
			ERC moderation CLPL in school	Open afternoon	
9 Sept					
		JST P2			Forward plans target
16 Sept	Tracking Meetings/ forward plan feedback (one hour over 2 weeks)				
			ERC pod meeting		
23 Sept	Tracking Meetings/ forward plan feedback (one hour over 2 weeks)				Holiday
			Staff Meeting		Blogs updated
30Sept SMT class visit	holiday				
		JST P7	Working party Or PE		
7 Oct SMT class visit	PE (individual)				
					In-service day 3
14 Oct	Holiday				
21 Oct	Planning				
		JST P3	Working party		Jotters to parents
28 Oct	Planning				
		Parents' Night Late	Parents' Night Early		Blogs updated
4 Nov					
		JST P4	Staff Meeting		
11 Nov Pupil Focus Groups	PE plan individual or peer				
18 Nov Pupil Focus Groups	Pupil Focus Groups				
		JST P5	Collegiate Planning		

25 Nov	Forward Plans to Management				
			Working party		Blogs updated
2 Dec					
			Staff Meeting		
9 Dec	PE plan- individual/ peer or consultation				
		JST P6	**Concert P3-5**		
16 Dec					
					Blogs updated

Term 2	Monday	Tuesday	Wednesday	Thursday	Friday
6 Jan	Planning				
		JST P1	Staff Meeting		
13 Jan					
			ERC pod Moderation meeting		
20 Jan	Planning				
		JST P2	Working party		Blogs updated
27 Jan Pupil Focus Groups	Pupil Focus Groups /Tracking Meetings (one hour over 2 weeks)				
			Staff Meeting		
3 Feb Pupil Focus Groups	Pupil Focus Groups / Tracking Meetings (one hour over 2 weeks)				
10 Feb					
			Collegiate Planning		
17 Feb					
	Holiday	holiday	In-service day 4		XA Factor Blogs updated
24 Feb					
		Open afternoon	Working party		
3 Mar Collaborative visit					
		JST P3	Working party		
10 Mar Collaborative visit	Forward Plans to Management				
			Working party		Jotters to parents
17 Mar					
		JST P4	Parents' Night Late	Parents' Night Early	Blogs updated
24 Mar					
			Staff Meeting		

31 Mar		JST P5			
7 Apr	Holiday				
14 Apr	Holiday				

Term 3	Monday	Tuesday	Wednesday	Thursday	Friday
21 Apr	No after school meetings (reports)				
					Blogs updated
28 Apr	No after school meetings (reports)				
5 May	Holiday	No after school meetings (reports)			
		In service day 5			
12 May	No after school meetings (reports)				
		JST P6		P6 & 7 show	
19 May	Tracking Meetings/ forward plan feedback (one hour over 2 weeks)				Holiday
		Sports Day	Staff Meeting	Reports to SMT	
26 May Pupil Focus Groups	Holiday	Tracking Meetings/ forward plan feedback (one hour over 2 weeks)			
			Working party		Blogs updated
2 June	PRD / Pupil Focus Groups				
9 Jun Peer visit- new class	Transfer of information 2 hours over 2 weeks staff to arrange				
			PE feedback		Reports Home
16 Jun Peer visit- new class	Transfer of information 2 hours over 2 weeks staff to arrange				
		Taster Day (pm)	PE feedback		
23 Jun			Last day		

In addition:

- 7 ½ hours per week preparation and correction
- one hour per week is given from the WTA for additional preparation and correction
- 35 hours annual CLPL

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