The role of informal and non-formal sources in supporting Graduate Teaching Assistants to learn to teach

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Abstract

This study concerns the initial teaching experiences of graduate teaching
assistants (GTAs) in UK higher education (HE) exploring non-formal and informal
sources which support their learning to be a teacher, the role that interactions with
students play and how GTAs know if they have been effective in their teaching.
Whilst the impact of formal training programmes for GTAs is well-researched, the
more unstructured means of learning about and developing effective teaching,
including the role of students, hasn't received as much attention. Data was
generated using semi-structured interviews with 15 GTAs at three English
universities who were beginning to teach at HE-level. Reflexive thematic analysis
was used to generate and investigate themes and patterns of meaning in the data.
The data provides insights into the role of interactions with students during GTAs'
initial teaching experiences, showing that students have an unintentional but
powerful impact on GTAs' nascent sense of teaching self-efficacy and that these
interactions are regarded by GTAs as key indicators of effectiveness in teaching.
The study shows that GTAs use student-centred approaches both to benefit their
students, and to give GTAs information about their teaching which they use to
enhance their effectiveness. The study adds to the literature on non-formal and
informal learning for initial teaching development by highlighting the importance of
GTAs' self-reliance and initiative when seeking and drawing from non-formal and
informal sources and by showing that the role of student interactions is part of a
reciprocal cycle of learning and development. The study has relevance for those
who support the development of GTAs teaching practices, including GTAs
themselves and concludes with recommendations for support during the initial
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Key

ECA   Early career academic

GTA   Graduate Teaching Assistant

HE   Higher education

HEI   Higher education institution

MEQs   Module evaluation questionnaire

PGR   Postgraduate research student

PSF   Professional Standards Framework

RDF   Researcher Development Framework

SGT   Small group teaching

STEM   Science, Technology, Engineering and Mathematics

TA   Thematic analysis

TEF   Teaching Excellence Framework

UCL   University College London

UK   United Kingdom

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Author's declaration

This thesis results entirely from my own work and has not been offered previously for any other degree or diploma.

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Chapter 1: Background and aims of thesis

1.1 Introduction to the chapter

This introductory chapter sets out the rationale and background for the study and presents an overview of the methods, theoretical underpinning and context which will be explored further in subsequent chapters. First the topic of the research will be presented including my own interest in the subject of investigation, leading to the identification of issues of further enquiry which are presented as research questions. I conclude the chapter by outlining the structure for the thesis as a whole.

1.2 The research topic and rationale

1.2.1 Postgraduate Research students who teach

The starting point for this study was my interest in how Postgraduate Research students (PGRs) who teach develop their practice. PGRs are commonly employed to undertake some teaching or demonstrating alongside or as part of their doctoral studies. This can be a contracted arrangement, where a percentage of the PhD tuition fee is paid in return for the PGR completing a certain amount of teaching, or on an ad hoc basis, with the PGR being contracted to teach or demonstrate certain sessions alongside their research (Park & Ramos, 2002, p. 6). Contracted positions are commonly part of the departmental structure internationally where PGRs who teach are considered an essential part of the department (Chiu et al., 2019; Compton & Tran, 2017; Park, 2004) but are also common in the United Kingdom (UK) (Jordan & Howe, 2017; Stocks, 2018). In North America particularly, PGRs contribute significantly to undergraduate teaching and instruction (Melton & Bodur, 2011), especially in lab-based teaching of Science, Technology, Engineering and Maths (STEM) subjects, sometimes having more contact hours than professors with students on large courses (DeChenne et al., 2012; Melton & Bodur, 2011; Park, 2004). Here in the UK, PGRs' position with regards to teaching is more inconsistent and precarious with individual higher education institutions (HEIs),

and often individual departments or faculties, determining the funding available to employ PGRs to teach, as well as the roles and responsibilities they are expected to conduct (Compton & Tran, 2017; Park, 2004).

It is worth noting at this point that in the UK there isn't a consistent term for PhD students who teach (Slack & Pownall, 2023), so for this study I will use Graduate Teaching Assistant (GTA) as an umbrella term for PhD students involved in teaching, regardless of their contractual arrangement.

GTAs balance different identities, including those of being a student, a researcher and a novice teacher and they often have an additional practitioner identity if they are entering academia from a profession. This 'unique niche' or 'liminal space' (Muzaka, 2009; Winstone & Moore, 2017) can lead to role conflict and time management challenges (Compton & Tran, 2017; Park & Ramos, 2002). GTAs main purpose is their research and they are simultaneously navigating learning how to research and be a researcher alongside learning how to teach and be a teacher, often with limited time to develop the necessary competencies to be effective in these differing roles (Hardré & Burris, 2012; Jordan & Howe, 2017; Winstone & Moore, 2017). Teaching can be a difficult, unpredictable task (Gibbs, 2003) which it is important they do well – for their own future as academics, as well as for their students' learning (Fong et al., 2019) - but there are often restrictions on the amount of time they can teach, especially when their PhD is externally funded, with UK Research and Innovation (UKRI, 2024) who oversee research grant funding in the UK recommending that GTAs teach for no more than six hours in any week. This can lead to time pressures for teaching-related activities, including learning *how* to teach.

1.2.2 GTAs teaching practice

Alongside variance in the type of roles they have, there is also considerable variance in GTAs teaching responsibilities, volume of teaching and autonomy in planning and managing their teaching (Kendall & Schussler, 2012). Whilst there is 'no comprehensive list' of their potential responsibilities (Deacon et al., 2017), they can include leading seminars and tutorials, supporting fieldwork,

demonstrating in lab-based sessions, running revision sessions, 1-1 project support, facilitating discussion groups, delivering problem-based learning and assessing students work (Barr & Wright, 2018; Chiu et al., 2019; Deacon et al., 2017; Jensen et al., 2005). Lecturing is also often part of the role, but it is typically the types of small group teaching (SGT) listed above that characterises GTA's teaching practices.

1.2.2.1 Small group teaching

Small group teaching - 'the engine room of instruction' (Wood & Moran, 1994) – in English speaking universities derives from the tutorial system at Oxford and Cambridge (Tapper & Palfreyman, 2000 quoted in Ashwin (2005)). Small groups are not necessarily defined by their numbers - although these are normally between six and fifteen students (Bogaard et al., 2005; Cranfield, 2016; Exley et al., 2019, p. 37) – but rather by the nature of the teaching, which involves discussion, learner activity and interaction between learners, and between the learners and the teacher, to promote critical learning, application of knowledge and understanding of key topics (Bogaard et al., 2005). This differs from the lecture model, which is often a more passive learning experience for students, and can mean that students, particularly undergraduates who are new to higher education (HE), may not appreciate the level of input they're expected to make to the session (Jensen et al., 2005).

Due to the more active style of learning and high degree of interaction, SGT is recognised as being complex and challenging for teachers, requiring the use of multiple skills (Exley et al., 2019, p. 45). SGT teachers need to create an environment where students feel able to input and engage with the materials or topic, to manage the flow and balance of discussions, to monitor group dynamics, and to keep the session on track (Ball et al., 2020; Cassidy et al., 2014; Steinert, 2004). It is however frequently GTAs – the least experienced teaching staff – who are given responsibility for conducting SGT (Di Benedetti et al., 2023; Mills, 2013). As such, undergraduates are more likely to have contact with GTAs through SGT (Cassidy et al., 2014; Kendall & Schussler, 2012) and as SGT allows for more informal discussions, it can also often be a space where students discuss

difficulties or personal issues with GTAs who are not always equipped to deal with these (Cassidy et al., 2014; Grant et al., 2024). Whilst there is variance between the amount of sessions GTAs run - with some only running one tutorial once, but others repeat-teaching the same session to different groups - SGT can be a space for building learning relationships with students and engaging with their learning on a more individual level (Nasser-Abu Alhija & Fresko, 2018). The skills required to perform the complex role of a small group teacher do however need to be developed.

1.2.3 Developing as a teacher

1.2.3.1 Training for GTAs

In my professional life, I am involved in daily conversations with and about GTAs, early career academics (ECAs) and their development, both locally and nationally. I am employed at the University of Hull's Teaching Excellence Academy as a Teaching Enhancement Advisor, a role which includes – but is not limited to- supporting ECAs through programmes of study aimed to develop and enhance their teaching. As well as supporting new lecturers on the Postgraduate Certificate in Academic Practice, I design and run credit-bearing, accredited courses and other initiatives for and with GTAs. Allied to this work I am a co-convenor of the national GTA Developers Network, and also act as an Independent Assessor for AdvanceHE, assessing the level 7 end point assessments for the Academic Professional Apprenticeship. As an academic developer, I am continually exploring ways and means to best support and enhance the practice of GTAs and ECAs within and beyond formal training programmes, and my professional roles and the networks aligned to them provide rich opportunities for discussion and inspiration. It is from this position and background that my interest in this research stems.

Since the 1990s, most HEIs have provided training and development for PGRs, recognising its importance for developing the next generation of academics. This training and development became more formalised in the UK after the 2002 Roberts Report, which recommended and provided funding for the training and development of PGRs' skills. Subsequent sector frameworks including the Vitae Researcher Development Framework (RDF) and the Professional Standards

Framework (PSF) for teaching and learning have provided structural underpinning for the training and development of PGRs in their research and teaching respectively. UK Higher Education Institutions (HEIs) now hold the responsibility for developing and nurturing future academics (Vitae, 2011a, 2011b) and this training and development includes that for supporting GTAs.

The difficulty and unpredictability of teaching (Gibbs, 2003) - particularly the complexities of SGT when they are the sole teacher (Poore et al., 2014) – coupled with being a GTA which can be 'overwhelming', means that GTAs need specific support to learn how to be an effective teacher (Chiu et al., 2019; Shum et al., 2020). The different roles and responsibilities that GTAs conduct also require them to develop relevant competencies, skills and knowledge to be able to perform each role effectively (Deacon et al., 2017). Training and development programmes offered to GTAs by HEIs tend to focus on pedagogical approaches and methods and can last from short workshops to a full year's training (Young & Bippus, 2008) with some courses accredited by AdvanceHE so that GTAs gain Associate Fellowship in recognition of the teaching and associated CPD they have done.

I explored the extensive body of literature on training programmes for GTAs during the early stages of this PhD including the impact on GTAs' confidence and sense of self-efficacy. Through this I identified that whilst the impact of formal training programmes is well-researched, the more unstructured means of developing effective practices for SGT, including the role of students, are less explored, and there is a lack of research generally on how teachers develop, and particularly what influences that development.

1.2.3.2 Non-formal and informal learning

Through many years of supporting ECAs with their professional development, I have sustained an interest in the influence of different initiatives on their practice and their confidence, including those which enhance and support formal teaching development by aligning with and complementing training programmes, including reflective practice, peer observation and discussion. Eraut (2000) draws a distinction between formal learning, which he defines as learning that is organised, has a prescribed framework, has a teacher or trainer, leads to a

qualification or credit, or has external specification of outcomes, with what he terms 'non-formal' and 'informal' learning. Non-formal learning, he argues, relates to the *intention* to learn, incorporating implicit learning (where the learning occurs unconsciously), reactive learning (which is unplanned and the learner is aware of, but the intentionality varies), and deliberative learning (where time is deliberately set aside for learning).

Time of stimulus	Implicit learning	Reactive learning	Deliberative learning
Past episode(s)	Implicit linkage of past memories with current experience.	Brief, near-spontaneous reflection on past episodes, communications, events, experiences.	Review of past actions, communications, events, experiences. More systematic reflection.
Current experience	A selection from experience enters the memory.	Incidental noting of facts, opinions, impressions, ideas. Recognition of learning opportunities.	Engagement in decision-making, problem-solving, planned informal learning.
Future behaviour	Unconscious effects of previous experiences.	Being prepared for emergent learning opportunities.	Planned learning goals. Planned learning opportunities.

Table 1.1 Eraut's typology of non-formal learning (2000).

Whilst 'non-formal' is still a contested term (Johnson & Majewska, 2022) it encapsulates the type of learning experiences I am concerned with, that is those which are beyond a formal training or development programme for GTAs teaching. Allied to this is informal learning which an individual builds up during their everyday life and interactions with others and which is therefore unintentional

(Coombs & Ahmed, 1974, quoted in Tight, 2002, p. 71). In the literature on academic development and specifically for GTAs, formal training programmes have been widely covered although the impact of these has been found by some to be minimal or only part of the picture, with teaching experience being a critical additional component (e.g. Jordan & Howe, 2017; Prieto & Altmaier, 1994; Shannon et al., 1998; Stocks, 2018; Winter et al., 2015). By contrast, non-formal and informal learning is under-explored but some studies show that it does have an impact on GTAs learning and development – for example in discussing support for GTAs through a training development programme, Chadha (2013) acknowledges that 'most of the learning that occurs does so informally'. As non-formal learning is invisible, tacit and context-specific it can be difficult to research as individuals may not be able to consciously recall the moments that instigated or coalesced their learning, although the presence of a stimulus has been found to encourage more explicit recall of when and how learning happened (Eraut, 2000).

Two examples of the literature in this area are Austin (2002) and Wise (2011). Austin found that GTAs professional and personal relationships and observations of colleagues support their socialisation to their new role, recommending that GTAs be offered collegiate support in their department, mentoring opportunities and means to discuss teaching with peers. Wise (2011) suggested that non-formal communications for GTAs have a significant impact on the development of the knowledge, skills and values they need to be effective teachers, but concluded that 'the details of how these informal helping relationships occur are not well understood'. These examples of non-formal learning focus on sources around the GTA but omit the key partner in the learning-teaching relationship, namely the students.

1.2.3.3 Students and teaching development

An area which consistently crops up in conversations with academics, and particularly with GTAs, is the key role students play in teaching-learning interactions - how students' interactions (or lack of) can make or break the flow of a session; how feedback from students can support or demolish teaching confidence. I wanted to know more about the role of these interactions in the

development of teaching self-efficacy, particularly the initial interactions GTAs had with their students, but came up with little in the literature that could directly satisfy my curiosity.

Exploring the experiences of four new academics at a UK university, one of the findings of Pickering (2006) was that 'encounters with students were powerfully influential' on academics' core beliefs about being a lecturer, teaching and learning. These encounters included feedback from students, verbal and non-verbal input in sessions, and students' behaviours, including attendance and punctuality. These encounters were said to be more influential than participation in training programmes and were 'central to their interrogation of existing beliefs' about teaching.

Another UK-based study by Sadler (2012) explored the influences on new academics' development over a two-year period. Again, he found that interactions with students were a core influence on new academics' beliefs about teaching and their learning to teach, providing them with 'richer and fuller' feedback on their teaching which could form part of their self-reflection.

Both studies showed that students' interactions are central to new academics' beliefs about their teaching and their development, begging the question of whether the same was true for GTAs, who have a close proximity to their students through their status, role and the SGT setting. Recent studies including Dillard et al. (2023) in the USA and Ball et al. (2020) in the UK, building on the work of Kendall and Schussler (2012); (2013), have explored students' perceptions of their GTA teachers effectiveness, which could provide information on what GTAs should focus on in their development, but they haven't been specifically focused on the role of students as an informal source of learning how to teach. Additionally, the early experiences which teachers have with their students, which have been described as 'crucial' to teacher-student relationship building (Bovill 2020b, p. 44) and a 'sensitive period' for development (Morris & Usher, 2011) are also under-represented in the literature on GTAs teaching development.

1.2.4 Teaching effectiveness

In addition to exploring sources that support GTAs in learning to teach in the SGT setting, I am also interested in how they know they have been effective and whether students had a role in this. Particularly during the pandemic when teaching moved online, numerous GTAs spoke to me about the frustration of being faced with blank screens where students didn't turn cameras on or use the chat box, telling me that because of this they had no way of knowing if their teaching had been successful. There was clearly a perception that learning could only be happening if there was interaction and that GTAs were measuring their effectiveness via response from and interactions with students, and this perception persisted when teaching returned to on-campus. I wanted to explore this further.

A clear definition of effective teaching is elusive, despite it being debated in the academic literature. Attempts to define what effective teaching is have focused on both the practice of teaching and the attributes of a teacher- the *being* and the *doing*. Over 35 years ago, Chickering and Gamson (1989) proposed seven principles for effective undergraduate education, followed a few years later by Ramsden's six principles of effective teaching, both of which have a central focus on students' active learning and their success, and how the teachers actions should support those (Ramsden, 2003, pp. 93-99). Students value and want to be taught by effective teachers, with one analysis of student-led teaching awards at a UK university showing that factors including enthusiasm, empathy and a desire for students to reach their potential are amongst those which students considered made effective teachers (Bradley et al., 2015).

In looking at teaching excellence – another contested and undefined term allied to teaching effectiveness - Parmenter and Robertson (2022) compared definitions of excellence in sector initiatives such as the Teaching Excellence Framework (TEF) with students' perspectives, concluding that students emphasise the process of teaching and their learning experience, which the TEF does not 'and probably cannot measure'. Similarly, Su and Wood (2012) found that the notion of teaching

excellence was 'hard to pin down' but that as a relational activity, students' views and conceptualisations of good teaching are essential.

A recent study by Dillard et al. (2023) came to similar conclusions for GTAs' teaching - that students and GTAs have different conceptions of effective teaching than those of standardised measures. Their study sought undergraduates' perceptions of the effectiveness of GTAs teaching which pointed to practices that support students' sense of competence, relatedness and autonomy. Previous studies which have looked at the benefits of GTAs as teachers cite factors such as approachability, enthusiasm, relatability and clarity of explanations as strengths of GTAs (Ball et al., 2020; Grant et al., 2024; Kendall & Schussler, 2012; Muzaka, 2009; Park, 2002). These counter some of the 'concerns' on the GTAs' role which centre around lack of subject knowledge, lack of confidence, variability of standards, and a lack of authority (Kendall & Schussler, 2012; Muzaka, 2009; Park, 2002).

Whilst my research does not aim to provide a single definition of teaching effectiveness for GTAs, it will contribute to the conversation around what effectiveness means and GTAs perceptions of their own effectiveness, by drawing from self-efficacy, a major construct linked to teacher effectiveness (DeChenne et al., 2012; Prieto & Altmaier, 1994).

1.2.5 Self-efficacy

This study is underpinned by social cognition theory, which states that humans can regulate their own behaviour by drawing from a set of self-beliefs to exercise control over their feelings, thoughts and actions (Bandura, 1997, p. 2). A key feature of social cognitive theory is self-efficacy.

Self-efficacy beliefs play a key role in an individual's behaviours, actions and effectiveness when learning how to perform a new task. Self-efficacy is defined as an individual's perception that they have the relevant capabilities and skills to be able to perform a particular task or action in a particular environment (Bandura, 1982; 1997, p. 3). Bandura (1982) theorised that accomplished performance of a specific task or action requires more than the necessary 'knowledge,

transformational operations and component skills'- it also requires the individual to believe that they can perform the task, and it is these beliefs which influence both their responses to the task and their effectiveness in conducting it under typical or challenging circumstances. So it is the conjunction of the two aspects - the skills and the efficacy beliefs- which develop together as an individual learns in what Bandura (1997, p. 6) calls 'reciprocal causation'.

Bandura (1997, pp. 80-115) identified four main sources of self-efficacy beliefs presented in order of their influence (Landino & Owen, 1988):

1. **Performance accomplishments** (or mastery experiences): This source is considered the most influential. Through authentic experience of the task or action, repeated over time, individuals can evaluate their ability to perform the task or action. Success in performing the task or action can increase self-efficacy beliefs, whereas failure can decrease it.

2. **Vicarious experiences:** Through observing others performing the task or action, either live or on video, individuals can evaluate their ability to perform it. Through modelling approaches or behaviours and comparing themselves to similar others who are successfully conducting the task, individuals can increase their self-efficacy. Observing the successes and failures of others both have an influence. Vicarious experiences are considered weaker and less dependable than performance accomplishments as they are susceptible to change (Bandura, 1977).

3. **Social (or verbal) persuasion:** Through receiving timely feedback from others on their accomplishment of the task or action, individuals gain external validation of their effectiveness which can contribute to their sense of self-efficacy. Where the person giving the feedback is perceived by the individual to be 'credible', and/or where the feedback is positive, this source of self-efficacy beliefs becomes more powerful.

4. **Physiological reactions or states:** Noticing and evaluating their physical and emotional responses when they are performing (and accomplishing) the task or action, can contribute to an individual's sense of their self-efficacy. If the physiological reaction (e.g. sweating, shaking) is perceived to

be negative this can lead to feelings of vulnerability which can negatively impact their beliefs.

Extensive studies over a sustained period, across different countries and settings including business, health, sport and education, support self-efficacy as a premise (Pajares, 1996) and the results of these studies have shown self-efficacy beliefs to have a crucial influence on an individual's achievement (Bandura, 1997, p. 39). Self-efficacy is therefore significant in both learning a task or action and being effective in it.

1.2.5.1 Teaching self-efficacy

Teaching self-efficacy can be defined as a teacher's belief in both their ability to teach students effectively (DeChenne et al., 2012) and to positively influence student outcomes (Klassen et al., 2011). It relates to an individual's perception that they can 'successfully accomplish a specific teaching task in a particular context' (Tschannen-Moran et al., 1998) and achieve specific goals as a teacher (Morris et al., 2017). As with self-efficacy generally, teaching self-efficacy relates to an individual's *perception* of their effectiveness or confidence, rather than their actual competence. In other words, it is not the skills that you have but 'what you believe you can do with what you have under a variety of circumstances' (Bandura, 1997, p. 37). This can however cause over- or under-estimations of abilities (Tschannen-Moran et al., 1998).

Those who have a strong sense of self-efficacy believe that they are, or will become, effective in the task they are conducting (Bandura, 1997, p. 39). This belief contributes to a strong performance in the task or action, meaning that those with a strong sense of teaching self-efficacy tend to be better teachers (DeChenne et al., 2015; Tschannen-Moran & Hoy, 2007). As teaching effectiveness is hard to measure quantitatively and self-efficacy beliefs can predict performance or effectiveness in a task (DeChenne et al., 2012), such beliefs have been used as a measure in previous studies of teaching (e.g. Burton et al., 2005; Prieto & Altmaier, 1994; Young & Bippus, 2008).

Teaching self-efficacy has been described as one of the predominant constructs in teaching education (Perera et al., 2019) and there is consistency amongst the findings of worldwide studies which have shown teaching self-efficacy to be related to a range of positive outcomes for students and teachers. For example, Tschannen-Moran et al. (1998) explored some of the benefits of teaching self-efficacy for teachers (e.g. persistence in the face of challenges), their students (e.g. a predictor of student achievement) and their institutions (e.g. teacher retention). They later also found that teachers with high self-efficacy were more likely to invest effort in their teaching and try new approaches, leading to better instruction (Tschannen-Moran & Hoy, 2001). Other studies - including Ismayilova and Klassen (2019), Klassen et al. (2009) and Matos et al. (2021)- have linked high teaching self-efficacy beliefs with increased job satisfaction.

Research on teaching self-efficacy frequently uses quantitative methods (Glackin & Hohenstein, 2018; Matos et al., 2021). For example in their review of 167 studies of teacher self-efficacy published between 1998 and 2007, Klassen et al. (2011) found that 76.7% used quantitative methods. There are however concerns about the validity of the instruments used and that quantitative methods only capture part of the picture (Glackin & Hohenstein, 2018). HEIs are complex organisations with varying departmental and disciplinary cultures therefore such contexts require an individual's lived experiences to be taken into account (Pickering, 2006).

With a background in working closely with individuals and groups to support their development, it is their words and stories which captivate me, and I knew that in designing this study it was the GTAs' own experiences, in their own words that I wanted to hear and share. Qualitative studies of self-efficacy, including teaching self-efficacy, are growing in number (Matos et al., 2021) and it was through these methods that I wanted to explore this topic further. Full detail on the methods designed will be discussed in chapter three.

1.3 Research questions

Drawing together, then, the areas of interest discussed so far, the purpose of my research was to explore GTAs' preliminary teaching experiences with students in

the small group teaching setting focussing on non-formal and informal sources of learning. To do this, I designed three research questions specifically to discover:

1. How do GTAs use non-formal and informal sources when learning how to teach?
2. What role do initial interactions with students play in supporting the development of GTAs' teaching self-efficacy?
3. How do interactions with students contribute to GTAs' conceptions of teaching effectiveness?

My study will provide insights into GTAs' self-efficacy development through non-formal and informal learning and the role of interactions with students during their first few hours of teaching. Whilst it does not claim to represent all GTAs in UK HE, rather it represents the views and experiences of the 15 participants, in their own contexts at a particular point in time. The recommendations resulting from my findings will have relevance for GTAs and those supporting GTAs as they learn to teach effectively.

1.4 Overview of thesis

My thesis continues from this contextual chapter to chapter two, in which I highlight the literature which is pertinent to the main topics and sub-topics of how GTAs learn to teach through non-formal and informal learning, their teaching self-efficacy development and the role of students in teaching development.

In chapter three I explain the research design which I used to answer the research questions, alongside my epistemological and ontological perspectives as a researcher. I analysed the data generated from semi-structured interviews using Braun and Clarke's process for reflexive thematic analysis, and this process and details on the participant group and research setting are presented and explored. The ethical framework which underpinned and informed my research is also presented in this chapter.

The results from the research undertaken using the methods outlined above are presented in chapter four, aligned to the three research questions. Firstly, I present the data relating to the non-formal and informal sources GTAs drew from when

they were learning how to teach, before focussing on interactions between GTAs and their students in their initial teaching sessions and how these support both the GTAs' sense of teaching self-efficacy, and their conceptions of teaching effectiveness. This data is presented as quotes from the interview transcripts.

Chapter five contains the analysis of the data presented in the previous chapter and in response to the research questions. In interpreting the results from the data generated, for my first research question I present three sub-sections on the sources GTAs drew from, before discussing the nature of these sources as inherently inconsistent and unreliable. I discuss the unconscious role that students play in supporting the development of GTAs' teaching self-efficacy and how GTAs learn from these interactions, before finally discussing conceptions of teaching effectiveness with a focus on student-centred teaching and the notion of triadic reciprocality.

Finally, the conclusions and recommendations from the research are presented in chapter six including an overview of my original contribution to knowledge, the limitations and strengths of the research, recommendations for practice and suggestions for future research, and my own self-reflections on undertaking it.

Chapter 2: Overview of literature

2.1 Introduction to the chapter and search strategy

In this chapter I will provide an argument for the gap in the relevant existing literature that my research questions address. Through this, I will build up and present different perspectives on my research topic and the salient research which has both shaped the field and informed my own thinking. Based on my existing working knowledge of the literature and the field, I created a set of topics to be investigated in the literature, including non-formal learning, self-efficacy, teaching effectiveness, GTAs development and students' perceptions of teaching. To create a focus for the review, sections 2.2 - 2.5 will be discussed through the lens of Eraut's typology of non-formal learning, namely implicit learning, reactive learning and deliberative learning, and sections 2.6 – 2.11 will be discussed in relation to three of Bandura's self-efficacy categories of performance accomplishments, social persuasion and vicarious experience. This will enable what is a potentially large body of literature to be focussed on the topics of interest as presented in the research questions and enable me to create a more nuanced picture of the literature on these related but distinct categories. Through this I can build a backdrop against which I can understand and relate what is already known to my own research topic.

I undertook the search for relevant literature using the libraries of both Lancaster University and the University of Hull, which gave me access to a vast range of online journals, books and databases.

Whilst the lack of a consistent term for GTAs meant that searching using key words often brought back either too few, or too many sources, I was able to build up an understanding of the most frequently used terms and thereby identify relevant returned literature. Similarly, the term 'self-efficacy' revealed countless sources across different fields and disciplines, so I refined my search to those relating to teaching, teachers and GTAs in the HE context. Through this I could focus my search on common terminology, leading to sources relevant to my study, either in

their topic, their methodology or their theoretical perspectives. Whilst I was interested in the UK context, I didn't limit my search to a particular geographic region to contextualise practices, and whilst I primarily focused on literature from the past 20 years, I identified and drew from earlier literature which was either frequently cited or which had particular relevance to my topic. I used the EndNote referencing management software to collect, sort and cite my sources within the text and references list.

2.2 Non-formal and informal learning

With origins in both community education and lifelong learning in the 1960s and 1970s, the terms formal, informal and non-formal learning have many contested and overlapping definitions (Eraut, 2000; Johnson & Majewska, 2022; Tight, 2002, p. 69), but broadly speaking, such definitions relate to the structure and intention of the learning (Colardyn & Bjornavold, 2004; Johnson & Majewska, 2022). Formal learning can be understood to be that which is provided by an educational institution and which leads to an intended formal qualification or accreditation, non-formal learning is also intentional but includes learning within communities and other organisations which is often unstructured and unassessed, and informal learning is that which an individual accrues during their everyday life and interactions and is thus 'unorganised, unsystematic and even unintentional' (Coombs & Ahmed, 1974, quoted in Tight, 2002, p. 71).

In reviewing the literature on non-formal learning, Johnson and Majewska (2022) identified that it can be motivating and engaging for learners, is reflexive, has a holistic impact on learners and can lead to new ways of working with others. Such benefits are reflected in studies on non-formal learning for academic development, such as the quantitative study of lecturers' approaches to teaching by Chadha (2022) which identified amongst other findings that being part of a community has a positive impact on novice academics. But whilst there exists an extensive body of literature on formal learning, including training and development programmes for academics and GTAs (Kyndt et al., 2016; Soomere & Karm, 2021), the literature on GTAs non-formal and informal learning is scant in comparison.

A qualitative study in a Canadian university by Wise (2011) over a decade ago found links between GTAs' informal communications and their teaching improvement, but in much of the other literature in this area there is a tendency to compare non-formal or informal learning with formal learning. For example, Soomere and Karm (2021) compared the interplay between formal and informal learning, finding that training shapes the informal conversations GTAs have about teaching, Simon and Pleschová (2021) showed how relationships between GTAs and others contributed to the success of formal training programmes and Austin (2002) looked at graduate education as a whole when exploring GTAs socialisation to an academic career. My study aims to fill this gap by focussing on non-formal and informal learning and how GTAs use them to learn about teaching.

In exploring the intentionality of non-formal learning, Eraut (2000) created a continuum of implicit to deliberative learning, with reactive learning in between the two. *Implicit* learning is acquired unconsciously, *reactive* learning is explicit but spontaneous and in reaction to recent, current or imminent events or experiences, and *deliberative* learning is where time is set aside for learning and for reviewing and reflecting on experiences. Drawing from Eraut's typology of non-formal learning, I will next explore the literature relating to three forms of non-formal learning for GTAs- experiences as a student (implicit learning), sharing experiences with others (reactive learning) and observing teaching (deliberative learning).

2.3 Implicit learning: being a student

A source of learning which is particularly applicable to GTAs is that of having been- and still being- a student. All teachers- whether in school, college or University settings- have served what Lortie (2002) defined 'an apprenticeship of observation' whereby they have experienced years of instruction by teachers and have been able to evaluate the effectiveness of that teaching – and the teacher - on their own learning. Teachers require a good knowledge of the tasks they need to accomplish in order to develop self-efficacy (Bandura, 1986, p. 243), and the opportunity to observe and experience a profession at close hand before entering it is something which is unique to teaching. This places GTAs in a strong position (Jarvis et al.,

2020:25; Saetnan, 2022) as they may have been a student just months before they start to teach or may still be attending taught classes as part of their doctoral studies. Their apprenticeship of observation can be considered as implicit learning, as it would not have been an active or conscious process, but rather something GTAs will have unknowingly absorbed as the recipients of teaching, without necessarily considering the methods or techniques in use (Jarvis et al., 2020:22).

In one of the few studies focussing on the use of previous experiences as a student in teaching development, Oleson and Hora (2014) found that through observing their own teachers, faculty members could model the teaching they have experienced and build their own conceptions of effective teaching, or at least the teaching which was effective for them as a learner. Whilst this study was not on GTAs, it is significant to my study as it shows the potential use and value of drawing from this source. There are also very few previous studies, either qualitative or quantitative, focussing on GTAs' use of their previous experiences. Fong et al. (2019) touched on this area in their study of teaching self-efficacy for GTAs, finding that the number of semesters a GTA had completed as a student prior to becoming a teacher was significant, suggesting that this was in part because they have had additional opportunities to observe examples of effective teaching. However, the survey data collected in this quantitative survey didn't delve into *how* GTAs had applied their experiences to their practice when learning to teach.

There have been several studies focussing on the benefits and challenges of drawing from the apprenticeship of observation when developing as a teacher. These include those looking at the influence that past teaching types – including those which are discipline-specific – can have on conceptions of teaching (Chang et al., 2011; Lindblom-Ylänne et al., 2006; Oleson & Hora, 2014; Shum et al., 2020). Through this, individuals can sometimes rely on practices and approaches which are outdated, ineffectual, or - for international teachers- not standard practice in the UK (Di Benedetti et al., 2023; Hardré & Burris, 2012; Shum et al., 2020; Smith et al., 2023) but these experiences have also been found to influence academics to use approaches which were valuable for them as learners (Deacon

et al., 2017; Oleson & Hora, 2014). For example, the student teachers in the study by Poulou (2007) perceived themselves as effective at engaging students which was attributed by the author to the proximity in stage of the teachers to their students.

Students themselves have also attributed GTAs abilities – including effective communication, and being reflective and flexible in teaching methods- to the fact that GTAs have recently been students (Ball et al., 2020). There is also evidence that GTAs use their dual role of student and teacher to support their students by engaging in 'approachability and advocacy' (Slack & Pownall, 2023) for and with students, and that new academics use their understanding of students' learning needs to empathise with their students (Sadler, 2012).

Whilst these benefits and challenges are well-represented in the literature, the role that this apprenticeship of observation plays – whether active or unconscious - in supporting GTAs' learning to teach in their initial teaching experiences is under-explored. GTAs' experiences as students are a useful source of information on learning how to teach, especially when previous experience or the availability of training are absent, and these experiences can be used by GTAs to gain insights into both effective and ineffective teaching practices and to compare their own emerging abilities. It is this area which is of interest to me and which I will explore in my study.

2.4 Reactive learning: sharing experiences with others

Discussing teaching concerns, challenges and successes with others can be seen as a form of reactive learning (Eraut, 2000), where the learning is explicit but spontaneous and in reaction to recent, current or imminent events or experiences. GTAs have both their peers and their academic colleagues to share their experiences with and I will now explore the literature related to both groups.

2.4.1 Sharing with GTAs

In exploring the value of sharing experiences with others, previous studies have largely focused on formal teaching development programmes for GTAs with Melton

and Bodur (2011) suggesting that 'preparation of GTAs for teaching should also include success stories of former GTAs' as these stories can provide vicarious experiences for GTAs. These studies have largely shown positive results, for example, in Stocks (2018) use of Action Learning Sets, where GTAs meet regularly in groups to share and discuss teaching challenges, she found that this 'democratic space' enabled all involved to contribute and learn from their own experiences and those of others. Joyce and Hassenfeldt (2020) found that GTAs who had a peer mentor with whom to discuss their teaching were more likely to engage in other teaching development opportunities which benefitted themselves and their students, and through incorporating peer conversations into a structured observation process, both Campbell et al. (2021) and Dobbins et al. (2021) identified benefits including developing a teaching community amongst GTAs, innovation in methods and approaches, and self-reflection. Dobbins et al. (2021), in exploring the power of peers in a teaching observation process, conclude that:

> at a point when they feel inexperienced and potentially very unsure of themselves as teachers, they can talk to others who are feeling similarly challenged and share ideas, concerns and experiences in a low stakes and non-intimidating way.

Through discussing their experiences of teaching – positive and negative – GTAs can therefore provide each other with a valuable means of encouragement, reassurance and support as they start to teach (Dobbins et al., 2021; Reinholz, 2017; Saetnan, 2022). This support can both reduce their anxiety and increase their confidence, self-efficacy and sense of a teaching identity (Campbell et al., 2021; Saetnan, 2022). These benefits are likely to be felt whether the discussion is part of a formal or non-formal opportunity, yet so far these studies have all focused on formal teaching development.

In terms of peer discussion as a non-formal means of teaching development, the literature on this area has thus far shown that talking with other GTAs about teaching either informally or through a process of peer mentoring is a significant predictor of teaching self-efficacy (Smith & Delgado, 2021; Tschannen-Moran & Hoy, 2007). Some studies have found that GTAs are more likely to rely on feedback

and support from peers than from their students or academic colleagues (Austin, 2002; Smith & Delgado, 2021), especially those in their own discipline (DeChenne et al., 2015) and those who have taught on the same module previously (Barr & Wright, 2018). Engaging in peer mentoring has been found to positively affect developmental outcomes across a range of academic roles for GTAs (Lorenzetti et al., 2019), and peer support is particularly valuable to GTAs with little access to other sources of support (Dobbins et al., 2021) or with little previous teaching experience (DeChenne et al., 2015). A recent paper by Zhuo and Li (2024) on the role of peer dialogue in GTAs' professional development used reflective narratives of two GTAs to explore the value of such conversations, suggesting that they can promote professional growth, establish professional identity, enhance GTAs' overall wellbeing, support interdisciplinary understanding and strengthen a sense of teaching community. Whilst these benefits are wide-ranging and support GTAs' professional development in its broadest sense, my focus here is on the unexplored role of peer discussion for teaching development, and specifically when GTAs are learning how to teach.

2.4.2 Conversations with colleagues

GTAs often report that they don't have communication with module leaders (Muzaka, 2009) and that they receive minimal formal feedback on their teaching from colleagues or module leaders (Austin, 2002; DeChenne et al., 2012; Mills, 2011) with the 2018 Postgraduate Research Experience Survey in the UK finding that only 59% of respondents felt that they had been given appropriate support and guidance for their teaching (Clark et al., 2021). To compensate for this lacunae, GTAs often rely on informal verbal feedback which can be provided as part of the teaching observation process or through casual conversation (Smith & Delgado, 2021).

Informal conversations about teaching have been found to provide valuable professional development for academics at different career stages. For example in their qualitative study of mid-career academics, Thomson and Trigwell (2018) found conversations – including 'corridor conversations' could support academics in dealing with teaching-related challenges, giving them reassurance and advice

on teaching practices and managing their teaching collaboratively. In synthesising the literature on the sources of academics' collaborative professional learning, Sinnayah et al. (2023) presented places where academics have these conversations beyond the corridor, including peer observation, inquiry communities, mentoring, communities of practice, learning circles and peer-assisted teaching. Such conversations are 'not formless, disorderly talk' (Haigh, 2005), but as a form of developing professional knowledge and understanding they can be a mutually beneficial catalyst to explore and challenge teaching, especially for novice academics, and within disciplinary groups (Jarvis et al., 2020:23; Pickering, 2006).

Most teaching observations include an element of feedback and a conversation between teacher and observer. Smith et al. (2023) recently suggested that GTAs need such constructive feedback from peers and colleagues 'to be successful'. These dialogues add extra value to the observation experience beyond teaching methods and approaches, including providing affirmation and boosting confidence (Jarvis et al., 2020:60), supporting the development of self-efficacy beliefs (DeChenne et al., 2015), GTAs identity development (Winstone & Moore, 2017), and promoting student-centred thinking (Tobiason, 2023).

Whilst some studies have found support and feedback from colleagues to have an impact on teaching effectiveness and self-efficacy for GTAs (e.g. Shannon et al., 1998; Tschannen-Moran & Hoy, 2007), others for example Poulou (2007), found that feedback from colleagues was a less likely source of teaching self-efficacy beliefs for student teachers. However, much research over the years has highlighted the value and influence of informal teaching communications as GTAs learn to teach (Austin, 2002; Cassidy et al., 2014; Saetnan, 2022; Winter et al., 2015; Wise, 2011). The features of discussing teaching with colleagues which best support development are those relating to sharing information and concerns about teaching and teaching techniques, through which GTAs can identify their own challenges and be provided with reassurance or solutions, boosting their confidence and self-efficacy (Saetnan, 2022; Schussler et al., 2015; Stocks, 2018; Wise, 2011). The benefits of discussing teaching have been found to be particularly

valued by international GTAs who are grappling with additional challenges such as language differences and adjusting to different educational cultures and approaches (Winter et al., 2015). Rather than focussing solely on the benefits, I aim to add to this literature through exploring the role of this source of learning during GTAs initial teaching experiences in conjunction with other non-formal and informal sources.

2.5 Deliberative learning: observing teaching

As GTAs start to actively develop as a teacher, intentionally engaging in observing the teaching of others to support their development can be a means of deliberative learning (Eraut, 2000) which is characterised as time being set aside for learning, reviewing and reflecting on experiences. Teaching as an activity is often conducted in isolation from other teachers, with only the teacher and their students (and sometimes a co-teacher) present. Observation can be a means of bringing others into that space to learn about teaching together. Therefore whilst it is often used as a means of quality assurance it is also considered to be a form of the scholarship of learning and teaching (Dobbins et al., 2021) which can support the development and sharing of effective teaching practices. There can be as much value in being an observer as being observed (Dobbins et al., 2021; Engin, 2016; Hendry et al., 2014; Hendry & Oliver, 2012; O'Keeffe et al., 2021) with the process of 'double-seeing' (Tenenberg, 2016) being particularly beneficial for providing insights into students' learning and behaviours (Reinholz, 2017). Hendry and Oliver (2012) attribute this to the vicarious experience of observing someone else succeed.

Gosling (2002, p. 5) identified three models of observation in learning and teaching- the evaluation model, where senior staff observe others; the developmental model where educational developers or 'expert' teachers observe others; and the peer review model where teachers observe each other. There are different (real or perceived) power relationships and feelings associated with each of these models (McMahon et al., 2007) and the integration of all three models has been found to have an impact on GTAs. For example, DeChenne et al. (2015) found that teaching development which included support and feedback from the GTA's

teaching supervisor, peers and department all needed to complement one another in order to create the highest levels of teaching self-efficacy for GTAs.

Despite sometimes feeling stressful, observational activities are important and beneficial for those new to teaching, particularly if through the evaluative or developmental models (Dobbins et al., 2021; Joyce & Hassenfeldt, 2020; Saetnan, 2022). Through interacting with experienced instructors, gaining feedback from them on their practice and observing them, GTAs have been found to have an improved sense of self-efficacy (Burton et al., 2005; Klassen & Tze, 2014; Mills, 2011), even when observing unsuccessful approaches (Mills, 2011). Additionally, observing teaching in a different discipline can expose teachers to new approaches, methods and ideas which can be incorporated into their own teaching toolkit and which DeChenne et al. (2015) and Dobbins et al. (2021) suggest can have a higher impact on GTAs self-efficacy development than performance accomplishments, especially when opportunities to practise teaching are limited. Observation has also been found to lead GTAs to be more scholarly in their future teaching as they question if the methods and approaches they are using are the most effective for student learning, by considering how others are doing it (Dobbins et al., 2021). Further, observing other GTAs through the peer-to-peer model can negate some of the power dynamics involved in observing a more senior colleague, and engender 'significant learning' between GTAs as they discuss and reflect together on the teaching they have delivered and observed (Dobbins et al., 2021). It has also been found to promote a sense of community and collaboration between GTAs, countering feelings of isolation (Campbell et al., 2021; Reinholz, 2017).

Due to these benefits, observation frequently forms part of formal teaching development programmes, with some even calling for observation and feedback from colleagues to be part of all teaching development courses for GTAs (Schussler et al., 2015; Smith & Delgado, 2021). Some GTAs spend more of their training time on observational activities than on teaching-based practice (Prieto & Meyers, 1999; Schussler et al., 2015). Yet often observation is outwith formal training and whilst informal opportunities to continue the observation discussions

beyond structured programmes has been recommended (e.g. O'Keeffe et al., 2021), there is little information on whether and how GTAs access observation opportunities when they are not part of formal programmes, and when they are taking their first steps in teaching, which demands further exploration.

Whilst these three sources of learning – being a student, sharing experiences with others and observing teaching - are recognised as valuable and have been explored in previous research, this has largely been in comparison to formal training and development or has focused on the benefits. If, as Bandura's Social Learning Theory suggests, learners learn by observing, imitation and modelling, how do GTAs use these sources and how do they combine them when learning how to become a teacher? This is an area for further exploration which my study will address.

2.6 GTAs' teaching self-efficacy

As outlined in chapter one (1.2.5), my study is underpinned by social cognition theory and the notion of self-efficacy, specifically, teaching self-efficacy. Teaching in universities differs from other educational settings as the role normally demands academics to conduct teaching alongside both research or scholarship responsibilities and 'service' roles (which may involve administrative, outreach and pastoral tasks) (Hemmings & Kay, 2009; Sharp et al., 2013). However as Bandura (1997, p. 37) states, self-efficacy relates to *specific* tasks or actions, and measures of teaching self-efficacy should therefore be 'tailored to domains of instructional functioning' (Bandura, 1997, p. 243). Having high self-efficacy in one of the three academic areas of research, teaching and service doesn't therefore predicate the same for another. For example, Bailey (1999) explored whether there was a relationship between research and teaching self-efficacy in University faculty, finding that the two were independent - individuals could have a high sense of research self-efficacy without holding the same beliefs about their teaching. Exploring each of the roles involved in being an academic and the individual's feelings about them is therefore important, rather than focussing on general

'academic' self-efficacy incorporating all three roles. For the purposes of this study, I will be focussing on teaching self-efficacy.

Although teaching self-efficacy has been extensively researched in school settings (Klassen et al., 2011), including for pre-service teachers (Ma et al., 2022) it remains under-researched in university education (Burton et al., 2005; Dong et al., 2023; Ismayilova & Klassen, 2019; Matos et al., 2021; Postareff et al., 2008), despite long-standing calls for such research (e.g. Landino & Owen, 1988; Santiago & Einarson, 1998). Research into lecturer's teaching self-efficacy beliefs could however provide insights which would have an impact on areas including lecturer performance, capacity building, and training and professional development (Klassen et al., 2011; Matos et al., 2021; Sharp et al., 2013).

Bandura (1997, p. 80) emphasised the importance of developing self-efficacy during the initial stages of a task when a stable sense of competence has yet to be developed. During this stage, studies of teaching self-efficacy in secondary school settings have found that pre-service teachers tend to have high – albeit possibly inflated (Fives & Looney, 2009) - levels of teaching self-efficacy which then drops dramatically during the first years of teaching before rising again as they gain further classroom experience (Brousseau et al., 1988; Soodak & Podell, 1997). Whilst university teaching is undoubtedly different to school teaching- not least because of the interplay of the research, teaching and service roles described above, as well as greater autonomy and more isolation (Fives & Looney, 2009; Hemmings, 2015) - many of the issues affecting school teachers also affect new HE-level teachers (Burton et al., 2005).

Teaching self-efficacy for university teaching has been found to be at its most malleable in the first years of teaching when it may fluctuate, before stabilising over time (Chiu et al., 2019; Ma et al., 2022; Morris & Usher, 2011; Young & Bippus, 2008). Once it has stabilised, any negative experiences tend not to affect the individual's self-efficacy beliefs (Matos et al., 2021; Morris & Usher, 2011) and such beliefs are thenceforth largely resistant to change (Morris & Usher, 2011; Pajares, 1996; Tschannen-Moran et al., 1998). This pre-service and early-career period of an academic's development- the space occupied by GTAs - is therefore a

formative stage in their learning to be an effective HE teacher and has a key role in their efficacy judgements. However, whilst previous studies have focused on the early *years* of academic practice, the initial teaching experiences of GTAs- where such a dramatic shift in teaching self-efficacy takes place for pre-service teachers in school settings and which are 'crucial' in teacher-student relationship building (Bovill, 2020b, p. 44)- is under-explored. It is these first teaching experiences that my research will focus on.

The development of GTAs' teaching skills – and the sense of teaching self-efficacy that goes alongside them- takes time and can fluctuate (Bandura, 1997, p. 243; Chiu et al., 2019; DeChenne et al., 2015; Morris & Usher, 2011; Stocks, 2018; Young & Bippus, 2008). For example, in their study of 323 GTAs in a Hong Kong university, Chiu et al. (2019) found that GTAs' sense of teaching self-efficacy changed during the first three years of their teaching practice- from being high during the initial training designed to develop their knowledge of teaching, it dropped when actually teaching students (i.e. putting their knowledge into practice and trying to develop their skills), before increasing again with time and further experience. However, time is not always available to GTAs. They are working on a fixed term, and their teaching activities are often sporadic and have to be balanced with their research commitments. Funders and supervisors can also limit the time GTAs have to teach or prepare for teaching (Hardré & Burris, 2012; Jordan & Howe, 2017; Regan & Besemer, 2009; UKRI, 2024). The limited initial teaching experiences available to GTAs are therefore precious spaces to generate the practice experience that will contribute to their learning about teaching and becoming effective in the role. My study will focus on these early experiences in order to contribute to the 'greater attention' needed for this 'sensitive period' (Morris & Usher, 2011).

In learning to become a teacher and developing their self-efficacy in the role, the sources individual GTAs draw from can vary, but typically fall under similar themes. For example, Hemmings (2015), in looking at how teaching self-efficacy develops in early career academics, identified four themes of experience, feedback and self-reflection, support from colleagues and professional learning, and DeChenne et

al. (2015)'s study of GTAs in STEM subjects identified that teaching self-efficacy comes from three sources similar to Hemmings's: GTA's professional development, their teaching experience, and the departmental teaching climate. What is missing, but implicit, in these themes is the role of students. Engaging in the practice of teaching with students is, though, a key means of development and confidence-building as it impacts on teachers' understanding of the task and their abilities to conduct it (Åkerlind, 2007; Oleson & Hora, 2014; Saetnan, 2022) which in turn can contribute to their commitment to teaching (Nasser-Abu Alhija & Fresko, 2018). Further exploration of the role students play in the development of self-efficacy through GTAs initial teaching experiences is also therefore needed.

2.7 Teaching experience and developing as a teacher

Authentic experiences of a task over a sustained period- or performance accomplishments- are typically the most effective means of developing and maintaining new skills and are considered the strongest predictors of self-efficacy (Bandura, 1997, p. 80; Landino & Owen, 1988). However, as self-efficacy beliefs are a predictor of future performance of a task, it is still possible to have high teaching self-efficacy beliefs with no prior experience. Whilst previous studies have shown that successful experiences in the early period of teaching may support the development of high self-efficacy beliefs for university teaching (Mills & Allen, 2007; Morris & Usher, 2011), few studies have focused on the development of teaching self-efficacy in pre-service teachers through their exposure to classroom experiences (e.g. Ma et al., 2022; Smith et al., 2013).

In one study by Morris and Usher (2011), the participants, who were all experienced professors, 'regarded their earliest experiences in teaching-related roles as crucial in their self-efficacy development' and the effect of these early successful experiences continued to contribute to their self-belief throughout their career. Opportunities to gain early teaching experience and benefit from the sense of performance accomplishment which comes with that can then be seen to play a crucial role in teacher development, but what is less clear from previous research is how these practice experiences support GTAs to learn and to know they have

been effective, and the role students play in this. I aim to provide some clarity on this through my research.

Academics have been found to have higher levels of teaching self-efficacy compared to their research or service self-efficacy (Bailey, 1999; Hemmings & Kay, 2009; Hemmings et al., 2012; Ismayilova & Klassen, 2019; Schoen & Winocur, 1988) which has been attributed to the fact that teaching is conducted more frequently than other activities so academics are able to draw from the performance accomplishments which come with that practice experience. Frequency plays a role for GTAs too. For example, in their study on student perceptions of GTAs' teaching, Nasser-Abu Alhija and Fresko (2018) found that repeat-teaching gave GTAs the opportunity to receive feedback from students, to improve their pedagogic skills, to deepen their understanding of the material and to transfer the experience they gained for the benefit of other groups of students. Engaging in teaching as a practice is therefore in itself a way to learn and to develop teaching effectiveness.

In addition to current practice experience, having previous experience of teaching has also been found to have a key impact on teaching self-efficacy. From secondary teachers, (Smith et al., 2013; Tschannen-Moran & Hoy, 2007) to early career academics (Hemmings, 2015; Wolf, 2011), it appears that this impact is regardless of whether the experience was at the same educational level or not. Whilst Shannon et al. (1998) found that GTAs with previous experience were perceived by their students to be less effective than those without experience, subsequent studies have found the opposite. For example, Nasser-Abu Alhija and Fresko (2018) explored students' perceptions of GTAs and found that those who taught multiple groups of students received higher ratings, going on to suggest that in order to increase the teaching effectiveness of GTAs and their sense of performance accomplishment, they should be employed to teach more than one group. GTAs do not always have previous teaching experience to draw from though (Burton et al., 2005; Chiu et al., 2019; Poore et al., 2014; Russell, 2009; Shum et al., 2020) or the volume of teaching hours needed to build up their experience

(Prieto & Altmaier, 1994; Tschannen-Moran & Hoy, 2007) which can have a 'negative effect' (Melton & Bodur, 2011).

Despite this, gaining frequent, early teaching experience can be the 'best way' for GTAs to develop their teaching skills (Deacon et al., 2017) and it also addresses and reduces some of the 'concerns' of the GTA role, helping them develop their professional identity as they navigate the liminal spaces or unique niche they occupy (Cho et al., 2011; Winstone & Moore, 2017). Winstone and Moore (2017) further suggest that teaching experience is 'crucial' in GTAs' identity development, with those who have autonomy and freedom to make decisions about their teaching more able to 'fully adopt' their new identity as a HE teacher. Key players in that teaching experience are students, so I will now explore what the existing literature says about their role in teaching development.

2.8 Students and teaching development

In the literature on the benefits GTAs derive from their teaching experiences, their interactions with and the influence of their students is often overlooked. If, as Bandura (1997, p. 87) suggests, self-efficacy beliefs are learnt through relationships and interactions with others, students as the key participants in and recipients of teaching have a vital role to play. They are experts on their own experience (Jarvis et al., 2020, p. 25; Scoles et al., 2021) providing both a valuable lens through which to reflect on practice (Brookfield, 2017, p. 62) and feedback on teaching which, in a study by Huxham et al. (2017), was found to rival or even surpass feedback from academic peers for its value. Through engaging in the learning process, interacting with their teacher and providing feedback, they can support teachers' development, thereby becoming 'teachers' themselves (Bovill, 2020b, p. 47; Cook-Sather & Alter, 2011; Mottet et al., 2004; Richardson & Radloff, 2014).

The role of students in academic development is however underexplored in the literature (Hagenauer & Volet, 2014b; Marquis et al., 2019; Mottet et al., 2004), particularly for early career academics and GTAs. Yet at a time when GTAs are experiencing an intense period of pedagogic learning and development, the

interaction between GTAs and students and the impact this has on their nascent sense of self-efficacy are areas which warrant further examination.

In my review of the literature, I found that typically, students only feature in terms of their own learning experiences in relation to GTAs practices. For example, previous studies have found a correlation between GTAs teaching self-efficacy and benefits for their students, including their academic performance (Klassen et al., 2011; Prieto & Meyers, 1999). The skills GTAs develop through their teaching experience including communication, time management and teaching methods (Chadha, 2015; Muzaka, 2009; Nasser-Abu Alhija & Fresko, 2018) have been found to improve the quality of their teaching for the benefit of their students and it has further been found that through gaining experience and thereby increasing their sense of self-efficacy, new teachers have adopted student-centred approaches to teaching (Shannon et al., 1998; Smith & Delgado, 2021; Wyse et al., 2014) which will support their students' learning.

Such findings reinforce the idea of a reciprocal cycle whereby high self-efficacy beliefs lead to benefits (for students and teachers) which then further enhances self-efficacy (Bandura, 1982; 1997, p. 6; Tschannen-Moran et al., 1998). For example, DeChenne et al. (2015) identified beliefs in the ability to manage a classroom effectively which benefited GTAs' students through higher motivation to achieve, and this positive experience in turn gave GTAs confidence and reassurance in their abilities. However, this reciprocity is under-explored in the literature on GTAs, with more written on the benefits for students in being taught by a GTA with high self-efficacy beliefs, than on the role that students have in contributing to the development of this sense of self-efficacy. In exploring the role and influence that working with students has on GTAs' development, I intend to add to this space.

2.9 Teaching relationships

Teaching in higher education is a varied, complex and challenging role which requires 'constant exchanges and the dynamic interactions between staff and students' (Matos et al., 2021). Whether they are aware of it or not, both teachers

and their learners are participants in these 'dynamic and shifting' (Ashwin, 2009, p. 6) interactions and relationships which are impacted by variables including the teaching and learning environment, students' identities, academics' identities and the experience(s) of academics (Ashwin, 2009; Houser & Waldbuesser, 2017; Sadler, 2012).

Conceptions of teaching which view teaching as a social experience, rather than a delivery model, propose that these relationships matter (Bovill, 2020a, p. 12) and despite teacher-student relationships in higher education being an under-researched field (Hagenauer & Volet, 2014b) there is a small but growing body of evidence that teacher and student connections are a 'place of possibility' (Gillespie, 2005) for students and their learning and that positive relationships can be a predictor of student outcomes, providing 'the foundation of good teaching' (Bovill, 2020a, p. 24) and enhancing students' engagement with the subject (Revell & Wainwright, 2009).

Whilst much has been written on the benefits for *students* of positive teaching and learning relationships, it is the impact and potential benefits for *teachers* that I am concerned with, and particularly for GTAs. I found however that the literature on benefits for teachers is limited, but the research that does exist shows that building relationships with students can have an impact on teachers' positive emotions (Hagenauer & Volet, 2014a) and that, over time, it can influence their conceptions of teaching (Entwistle & Walker, 2002), and can enhance their understanding of students concerns and needs (Richardson & Radloff, 2014).

Where GTAs build relationships with their students, there is an indication that these can be different in nature to both other educational settings, and of those between academics and students. In contrast to school teaching, where the age difference and professional status of the teacher creates an inherent power imbalance, HE teaching is an adult-adult relationship, albeit still hierarchical (Hagenauer et al., 2023; Karpouza & Emvalotis, 2019; Kaur et al., 2019). In HE, learning relationships are normally formed in cooperation with students, particularly in SGT settings and when a student-centred approach is adopted, meaning that relationships are more dynamic, situational and influenced by the

views and expectations of both teacher and student (Bovill, 2020a, p. 20; Hagenauer et al., 2023). Participants in the study by Karpouza and Emvalotis (2019) likened this to the conductor of an orchestra who 'sets the tempo of the relationship', but that the student has an equally important role in how that relationship develops.

For GTAs, the relationship and its dynamics are however different. There is often not much of an age difference between GTAs and their students (Kendall & Schussler, 2013; Muzaka, 2009; Nasser-Abu Alhija & Fresko, 2018; Smith & Delgado, 2021) and this, coupled with their status as a student can mean that any sense of hierarchy is diminished. Whilst there can be some challenges with this, it has been found to enable GTAs to create informal, collaborative learning spaces where they can connect with students (Ball et al., 2020), and where students 'experience their tutor as a person as well as a teacher' (Campbell et al., 2021).

Space, place and frequency of contact also emerged as key themes in the literature on relationship-building, and here, GTAs may be in a different position to their academic colleagues. Karpouza and Emvalotis (2019) suggest that the teacher-student relationship typically commences either during the application process or during the first lesson which, in large courses in the US context particularly, is normally with a GTA (DeChenne et al., 2012; Kendall & Schussler, 2012). In the UK, GTAs are not usually involved in recruitment and selection of students, so it can be assumed that for them it is the first lesson where this potential relationship starts, a setting which in some cases is also the GTAs first experience of teaching.

Additionally, Hagenauer and Volet (2014b) found that space is a factor which impacts on the potential for relationships in HE to be built, suggesting that where academics don't have their own office (which GTAs typically don't) 'informal interactions were hampered'. They also found that the frequency of interactions is important. GTAs sometimes don't teach the same session multiple times or see their students regularly as a personal supervisor, meaning that relationship-

building between GTAs and students, and therefore the potential for the development of self-efficacy via social persuasion, could be impacted.

However, Korthagen et al. (2014), drawing from the work of Noddings on relational pedagogy and the ethics of care, suggest that 'deep, lasting' relationships do not need to be built with every student, but rather that brief interactions, or 'contact' where the academic provides presence for the student, can also play a 'fundamental' role in building connections. Pickering (2006), who called such 'powerfully influential' interactions 'encounters', found that these encounters could be experienced through both student feedback, and student response and behaviour in sessions, including non-verbal communication, indicating that such encounters have an immediate role in supporting new teachers' understanding about their role and effectiveness.

GTAs initial teaching is characterised by such interactions and encounters, rather than, necessarily, the relationships these interactions will build to (Hagenauer et al., 2023; Karpouza & Emvalotis, 2019; Korthagen et al., 2014), as they tend to teach infrequently, and to teach contact-based classes such as laboratories and small group discussions (DeChenne et al., 2012; Kendall & Schussler, 2012). So, what can and do GTAs learn from those 'brief encounters'? Discovering more about these first interactions is a particular area of interest for my study and one which has thus far not been fully explored.

2.10 Interactions with students

Interactions within a group and between students and teacher have been identified as 'essential characteristics' (Steinert, 2004) of teaching and 'the key to teaching excellence' (Revell & Wainwright, 2009). Similar to relationship-building discussed above, where interactions are facilitated by teachers they have been found to create 'allies in learning' (Richardson & Radloff, 2014) by supporting students' experiences, enjoyment, learning and confidence (Ball et al., 2020; Campbell et al., 2021; Nasser-Abu Alhija & Fresko, 2018; Revell & Wainwright, 2009) whilst also enhancing teachers' development through 'richer, fuller and

more explicit' feedback (Sadler, 2012) and giving them ideas to improve their teaching (Richardson & Radloff, 2014).

The interactions teachers have with their students give them information on the effectiveness of their practice which can either validate them and their approaches or damage their confidence and role development. For example, Mottet et al. (2004) researched the effects of students' verbal and nonverbal responsiveness, finding that both had an impact, but that non-responsiveness had a greater, negative effect on teachers' self-efficacy and job satisfaction. Where interactions are unsuccessful, this has also been found to 'impede' the GTA's role identity development as a teacher (Winstone & Moore, 2017) and diminish self-efficacy beliefs (Kim, 2009). Conversely, when interactions are positive, or anticipated to be positive, this can act as social persuasion, having a high impact and influence on teachers' sense of self-efficacy (Pickering, 2006; Poulou, 2007; Sadler, 2012; Santiago & Einarson, 1998; Smith & Delgado, 2021). This aligns with the findings of Tschannen-Moran and Hoy (2007) who suggested that satisfaction with performance in the classroom has a positive effect on teaching self-efficacy. However, GTAs have been found to have lower self-efficacy in the areas of engagement and questioning, indicating that it is an area that they need to develop as they learn to become a teacher (Deacon et al., 2017; Fong et al., 2019).

There is, however, a paucity of literature focused on GTAs interactions with their students and the outcomes of these interactions for GTAs. In two notable recent studies, Ball et al. (2020) and Nasser-Abu Alhija and Fresko (2018) explored students' perceptions of GTAs, focussing on the methods and behaviours employed by GTAs which students commented favourably on, and the comparison with ratings of other teachers respectively, but they did not explore the impact of interactions with students on GTAs' development and effectiveness. In an earlier study of new teachers in HE, Sadler (2012) found that interactions with students were a critical influence on how new academics developed their thinking or practice, providing them with

> new forms of feedback on their teaching that had previously been unavailable to them.

Such interactions typically took place during tasks or activities where the teacher directly communicated or worked closely with students (which are characteristic of the type of small group teaching that GTAs are involved with), showing the intersection of behaviour, personal attributes and environmental circumstances which, according to Bandura (1997, pp. 40, 79) develop skills. However, Sadler's study focused on new staff rather than GTAs, and was based on longitudinal data over two years, rather than focussing on initial teaching experiences. It is this point of intersection- these critical, early moments of interaction - and their influence on GTAs' self-efficacy development in the small group teaching setting, which my research will explore and through which I will add to the literature.

2.11 Students' perceptions of GTAs and their teaching

Previous studies have shown that the perceptions students have of their teachers can influence students' study behaviour, engagement with the subject and the learning environment (Dillard et al., 2023; Miller et al., 2017; Revell & Wainwright, 2009; Stes et al., 2012) and students' positive perceptions have also been found to impact teachers' self-efficacy (Hemmings, 2015; Miller et al., 2017). These perceptions from students are generally gathered through either informal sources, including the relationships and interactions GTAs have with students, and formal sources such as student evaluations of teaching, typically feedback questionnaires conducted at the end of a period of teaching. But what is known about what students think of GTAs, for whom students will likely have different perceptions due to their unique role (Barr & Wright, 2018; Dillard et al., 2023)?

Whilst students' perceptions can provide useful insights into teacher effectiveness, they have often been absent from the literature (Parmenter & Robertson, 2022; Richardson & Radloff, 2014; Su & Wood, 2012), including for GTAs (Ball et al., 2020; Dillard et al., 2023; Nasser-Abu Alhija & Fresko, 2018; Winstone & Moore, 2017), however a number of recent studies have started to address this gap. Themes emerging from this literature include that variable demographic and environmental factors have a role in students' perceptions, including the age of the GTA, their experience (of the subject and of teaching), their

teaching techniques and size of the class (Ball et al., 2020; Dillard et al., 2023; Kendall & Schussler, 2012, 2013).

Relationships, rapport, communication and care are often amongst the attributes reported by students as important for effective teaching (Parmenter & Robertson, 2022; Revell & Wainwright, 2009), affective qualities which are chiefly developed through practice and experience with students, but which are also regularly reported as qualities GTAs have (Ball et al., 2020; Kendall & Schussler, 2012; Muzaka, 2009; Nasser-Abu Alhija & Fresko, 2018; Park, 2002). For example, Ball et al (2020) found that students had 'generally favourable' perceptions of their GTAs across multiple teaching methods and behavioural factors, with over 90% of their respondents reporting that GTAs performed the same as or better in small group teaching as academic members of staff, creating 'relaxed learning environments in which they feel comfortable asking questions'. Negative perceptions of GTAs include their lack of experience, lack of classroom management skills, their ability to convey information and their demeanour (Ball et al., 2020; Barr & Wright, 2018; Kendall & Schussler, 2012; Roach, 1997). There is also some evidence that students' perceptions can change over time (Kendall & Schussler, 2013).

Whilst my study does not seek to gather and analyse students' perceptions of their GTA teachers, it will add to the literature on this area by exploring how GTAs interactions with their students enable them to gather non-formal information about their students' perceptions, and how these then influence their initial teaching practice and conceptions of effectiveness, which previous studies have thus far not dealt with (Soomere & Karm, 2021).

2.12 Summary of literature review

My aim through this chapter was to review and synthesise relevant literature to reveal what is already known about my research topic and the areas of interest for further exploration or extension. In summary, my review suggests that as GTAs learn to become a teacher, several sources influence their self-efficacy beliefs including their previous experience (as teacher and student), their vicarious experiences of observing and discussing with colleagues, and social persuasion

from their colleagues and the students they are teaching. Through exploring each of these themes, I was able to identify gaps which warrant further investigation, in methods, context or themes.

This study therefore aims to extend and add to the findings of previous research by exploring GTAs formative teaching experiences, their beliefs and what impacts on them. In doing so, it will enable me to make new and original contributions to knowledge by addressing my three research questions. Through my reading of the literature, I was also able to review and consider different approaches to studies of this nature, which has shaped the methodological approach I have taken, and which I will present in the next chapter.

Chapter 3: Research design

3.1 Introduction to chapter

In the chapters so far, I have examined my rationale for choosing my research topic and reviewed the literature relating to this topic to identify the gaps in existing knowledge. In this chapter I will present the research design that was used to answer the research questions, namely:

1) How do GTAs use non-formal and informal sources when learning how to teach?
2) What role do initial interactions with students play in supporting the development of GTAs' teaching self-efficacy?
3) How do interactions with students contribute to GTAs' conceptions of teaching effectiveness?

To answer these questions, I designed a qualitative study using semi-structured interviews and reflexive thematic analysis. In this chapter I will first present the methodological framework as a rationale for the methods I used, before setting out the nature of the research setting and the participant group. I'll consider matters of ethics, validity and reliability in the research design, before finally focussing on the

data generation and analysis process, including the generation, development and refining of themes.

3.2 Methodological and theoretical framework

My aim for this exploratory, experiential qualitative study is to examine the non-formal and informal sources GTAs draw from when learning to teach in HE. As early teaching experiences can be so crucial for self-efficacy development (Mills & Allen, 2007; Morris & Usher, 2011) I will also explore how both initial interactions with students, and the informal and non-formal sources of learning identified contribute to GTAs' perceived self-efficacy beliefs and conceptions of teaching effectiveness.

I will use Eraut's conceptions of non-formal and informal learning to name and conceptualise the interactions GTAs have with their students, colleagues and others and how they use this as a source of learning both how to teach and how to be a teacher. Eraut's conceptions will enable me to explore the full range of learning experiences and help to inform my thinking on where these different sources of learning are drawn from and how they are used. Using Bandura's elements of self-efficacy (namely performance accomplishments, vicarious experience and social persuasion, as defined in section 1.2.5) will then enable a closer examination of the features of that learning and development and how it occurs.

Whilst the use of various qualitative methodologies is common in researching higher education, research on formal, informal and non-formal learning doesn't have a consistent or comprehensive methodology in the literature, however qualitative inquiry can discover and explore its themes (Johnson & Majewska, 2022) by generating contextualised and situated knowledge (Braun & Clarke, 2022b, p. 6) and pursuing answers to questions about experiences, perceptions and meanings to subjectively understand (rather than explain) through the eyes of different participants (Mack, 2010). Further, qualitative methods can provide a detailed exploration of beliefs and experiences – in my case the initial teaching

experiences of GTAs - enabling the discovery of meaning behind these experiences and participants' words. In doing so it also gives the experiences of the research subject's voice by providing vivid evidence of these experiences (Brinkmann, 2015; Cousin, 2009:31).

3.2.1 Thematic analysis

The diversity of pedagogic research demands methods and methodologies which give flexibility and credibility for both the variation of epistemological or theoretical perspectives involved and for the practicalities of analysing and coding qualitative data (Maguire & Delahunt, 2017). In exploring different approaches, I identified Braun and Clarke's thematic analysis (TA) as an appropriate approach for what I was trying to achieve.

Thematic analysis originated from an interest in patterns of meaning developed through coding, which lacked a coherent definition which could clarify the process and methods adopted (Attride-Stirling, 2001; Braun & Clarke, 2006). Thus, in their 2006 paper, Braun and Clarke defined TA as:

> a method for identifying, analysing and reporting patterns (themes) within data. It minimally organises and describes your dataset in (rich) detail.

incorporating a six-phase approach to analysis, consisting of:

1. dataset familiarisation
2. data coding
3. initial theme generation
4. theme development and review
5. theme refining, defining and naming
6. writing up.

This approach is inherently flexible (Clarke & Braun, 2017), working well with a range of research topics and questions (including those on people's experiences), a range of data types and sizes, and both data-driven and theory-driven analyses (Clarke & Braun, 2013, 2017), giving it value for research into the complexities of teaching and learning (Maguire & Delahunt, 2017). However, in addition to the

value of this process for my data analysis, a key strength of thematic analysis for my study was in its fundamental characteristic of reflexivity (Braun & Clarke, 2019, 2021; 2022b, p. 5).

3.2.2 Reflexive TA

In redefining TA as *reflexive thematic analysis*, Braun and Clarke (2019) sought to centralise the researcher and their subjectivity in the process, seeing the researcher's role in knowledge production as being 'at the heart' of the approach. Reflexive TA offers flexible guidelines supporting different theoretical frameworks and orientations to data which require researchers to be 'active, engaged and thoughtful' about their approaches (Braun & Clarke, 2022b, p. 9). This involves being actively aware of assumptions around theoretical frameworks, data reporting and decisions on analysis, and constantly querying assumptions in the interpretation and coding of data (Braun & Clarke, 2019).

As experiential qualitative research is 'creative, reflexive and subjective', Braun and Clarke (2019; 2022b, p. 8) argue that researcher subjectivity within reflexive TA is key, and rather than being seen as a problem, should instead be treated as 'a resource for doing analysis'. Using a reflexive approach would therefore enable me to both critically interrogate my data but also reflect on my own role, positionality and practices as both a professional in this areas and as a novice researcher (Braun & Clarke, 2006; 2022b, p. 5) adding richness to the study's endeavour.

3.3 Participant group

TA has an emphasis on a dataset, or participant group, through which meaning can be interpreted, rather than a *sample* which infers the data is representative of every member of the population in question (Braun & Clarke, 2022a). To explore the initial teaching experiences of GTAs I needed to conduct the research in UK HEIs and I had initially planned that my participant group would be GTAs in my own institution (University of Hull). I sent a local call to the PhD community at Hull in July 2021 and received several expressions of interest from potential participants who met the eligibility criteria. However, reflecting on the scope and purpose of my

study I felt the outcomes of the study would be enhanced by hearing the stories of GTAs in other settings to enable a range of voices and experiences to be heard.

Following approved revisions to my ethics application, in October 2021 I sent out a national call for participants via a Jiscmail distribution list for those who work in GTA Developer roles in HE who could send the call onto their GTA communities. Both the local and national calls for contributions detailed the nature of the research, participants' expected involvement, and the eligibility criteria. A participant information sheet (appendix 1) and consent form (appendix 2) were sent to those who expressed an interest and met the eligibility criteria. Completed forms were kept in a password-protected folder on University-approved cloud software accessible only by myself.

These calls resulted in respondents from the University of Hull (7), University of Lancaster (7), and one participant from University College London (UCL), giving a participant group of 15. The participants were all studying for a PhD at either UCL, Lancaster or Hull, had expressed an interest in pursuing an academic career in the future and were starting their HE-level teaching during the 2021-22 academic year.

In sending these calls, I had been hoping to attract a participant group of around 12-20 participants to give a range of perspectives and in order to be large enough to justify my claims on patterned meaning (Braun & Clarke, 2022a). Given that I was using interviews, this size of participant group would also be feasible in the time available and would enable me to identify meaning without generalising (Brinkmann & Kvale, 2015:141).

As part of the consent form I requested information on only those areas which were of significance or relevance to my inquiry, so for example I didn't collect information on the gender, ethnicity, age or stage of the participants at the time they were recruited as I wanted a broad range of perspectives on how GTAs experienced teaching in UK HE for the first time as a PhD student, without limiting this to a specific group of characteristics. When it came to exploring their role and how their perspectives may have been shaped, information on stage of study and academic and professional background were pertinent so this was requested prior

to or at the interviews. The GTAs who responded included those who were near peers to their undergraduate students and those who had a professional background in another field, or who were coming to academia as a second career, and included those in the first, second and final years of PhD study. This gave me a participant group of PhD students who were new to teaching so that I could capture a range of variation within that group.

3.3.1 Research setting

The University of Hull is a medium-sized research and teaching focused university in the east of Yorkshire. It was founded in 1927 and at the time of the data generation (2021-22 academic year) had 10,772 undergraduate and 1,900 postgraduate (taught and research) students across four faculties and 23 academic departments (University of Hull, 2021). Situated in Lancashire on the opposite side of the country, Lancaster University was founded in 1964. It had 16,666 students (12,497 undergraduate and 4,169 postgraduate taught and research) across four faculties and 28 academic departments (Lancaster University, 2021) at the time of data generation. UCL- located in central London and founded in 1826 - is one of the largest research-intensive universities in the UK with 19,994 undergraduate and 23,842 postgraduates in 11 faculties (UCL, 2021) at the time of data generation.

PGRs at all three institutions are supported with their studies and skills development through a central Doctoral College, School or Academy. At the time of data generation, all three institutions also had central departments which provided formal teaching development support to staff and PGRs who teach (the Teaching Excellence Academy at Hull, Educational Development team at Lancaster and the UCL Arena Centre). Mandatory and optional teaching development programmes for GTAs were available at all three of the institutions which some participants of this study had completed.

Postgraduate research students at all three of these universities are given the opportunity to teach whilst completing their doctoral studies. Some are on contracts where teaching is expected as part of the financial arrangement and

others are paid on a short-term contract basis for the teaching they complete. It is likely that the GTAs who self-select to teach have an interest in developing teaching skills and/or an academic career in the future, although some PGRs teach for financial reasons alone (Park, 2004; Stocks, 2018). The participants who were on contracts which required a certain number of teaching hours didn't express concern about seeking teaching opportunities, but the GTAs who were doing ad hoc teaching (e.g. Alex, Blake, Morgan) expressed that they needed to be pro-active in finding and securing teaching opportunities.

3.3.2 Types of teaching

The 15 participants were engaged in a range of teaching across different academic departments. This teaching was all HE-level i.e. levels 4-7 on the Quality Assurance Agency Higher Education Credit Framework. Whilst participants were from diverse disciplinary backgrounds, the type of teaching they were expected to conduct were primarily forms of SGT including tutorial support, seminars, workshops, practicals, group activities, lab demonstration, and 1-1 support for projects and dissertations (see table 3.1). These types of teaching all require close contact with students as either individuals or small groups.

Participant	Discipline	Institution	Practitioner experience	Type of teaching	Typical class size
Alex	Epidemiology	UCL	Yes	Tutorials, seminars	Fewer than 10 students
Blake	History	Lancaster	Not in subject	Tutorials, seminars	10-25 students
Cameron	Sport, Health and Exercise Science	Hull	Yes	Lab demonstration, practicals	10-25 students
Charlie	Economics	Lancaster	No	Practicals	10-25 students
Elliott	Philosophy	Lancaster	Not in subject	Tutorials, seminars	10-25 students
Finn	Creative writing	Hull	No	Tutorials, seminars	0-25 students

Jamie	Social Work	Hull	Yes	Combination- seminars, tutorials, lectures, 1-1	50-100 students
Jordan	Mathematics	Lancaster	No	Tutorials, seminars	10-25 students
Morgan	History	Hull	Yes	Tutorials, seminars, fieldtrips	10-25 students
Pat	English	Hull	Yes	Lectures	10-25 students
Riley	Marketing	Lancaster	No	Tutorials, seminars	10-25 students
Robin	Law and Business	Hull	Yes	Combination- seminars, tutorials, lectures, 1-1	More than 100 students
Rowan	Psychology	Lancaster	No	Lab demonstration	50-100 students
Sammy	Politics	Lancaster	No	Tutorials, seminars	10-25 students
Taylor	Nursing	Hull	Yes	Lectures	10-25 students

Table 3.1 Role and types of teaching.

Whilst six of the participants had been working as professionals prior to starting their PhD, nine of them had only recently completed their undergraduate and postgraduate taught level study. Additionally, eight of the participants had studied at the same institution they were now teaching in, which for Alex, Blake, Cameron, Jamie and Riley included teaching modules that they themselves had previously taken as a student (see table 3.2)

Participant	Previous occupation immediately prior to PhD studies	Previously studied at same institution they now teach in?
Alex	Student	Yes

Blake	Student	Yes
Cameron	Student	Yes
Charlie	Student	No
Elliot	Employment	No
Finn	Student	Yes
Jamie	Employment	No
Jordan	Student	Yes
Morgan	Employment	Yes
Pat	Employment	No
Riley	Student	Yes
Robin	Employment	No
Rowan	Student	No
Sammy	Student	No
Taylor	Employment	Yes

Table 3.2 Participants' prior experiences as a student.

3.4 Research design

When designing the data generation and analysis methods for this study, I was cognisant of Brinkmann and Kvale's assertion that 'the subject matter should determine the methods used' (2015:128).

Studies using a range of designs have been conducted to explore early-career academics' teaching development - from auto-ethnography (e.g. Wilkinson, 2019) to focus groups (e.g. Winstone & Moore, 2017) to case studies (e.g. Hancock, 2018). Such approaches can for example support exploration into specific individual experience (auto-ethnography) or generate understanding of a particular setting (case studies) (Cousin, 2009, pp. 111, 131). I considered the use of focus groups due to their emphasis on exploratory discussion, to share, compare and co-construct knowledge (Cousin, 2009, pp. 51-52) but none of these designs would have enabled me to explore the 'how'. Qualitative interviewing enables researchers to answer such 'how' questions (Brinkmann & Kvale, 2015:127) providing the rich data that the interpretivist approach seeks in order to discover what the participants have experienced or what they perceive of a topic (Radnor,

2001:61). The use of interviews is already commonplace in qualitative research on teaching development and on self-efficacy (e.g. Hemmings, 2015; Mills, 2011; Morris & Usher, 2011).

Early in my research I also explored the use of a self-efficacy survey, adapting the College Teaching Self-Efficacy Scale (CTSES) (Navarro, 2005) survey for use with my participants. However the data from these surveys wouldn't have provided sufficient data to explore my research topics so I instead asked participants to complete it prior to the interviews and used it as a stimulus for reflection (Eraut, 2000) in the interviews. The data from these surveys has therefore not been used in my analysis.

Different interview approaches (from structured to non-directive; closed to open) elicit different results (Radnor, 2001:60). I chose to use a semi-structured interview format as it is a 'third space' (Cousin, 2009:73) where I, as interviewer work in conjunction with the participant to move beyond the quantifiable towards reflection, developing an understanding of meaning and exploring what participants have experienced and how they act (Brinkmann & Kvale, 2015:32) even though I had not experienced the phenomena of being a GTA myself (Rubin & Rubin, 2005:3). I chose to conduct interviews with GTAs at the start of their teaching experiences, to capture some of their initial feelings and preparation, followed by a second round of interviews when they had accrued several hours of experience with their students.

The semi-structured interview method is generally used to give access to participants' experiences of their lived world (Brinkmann & Kvale, 2015:32) which can produce 'rich empirical data about the .... perspectives of individuals' (Cousin, 2009:71) and 'unfold the meaning of their experiences' (Brinkmann & Kvale, 2015:3). It gives space to explore the subtleties and uniqueness (Cousin, 2009:77) of participants together with their generalised or shared experiences. This however is not without its problems, as interviews where there is a joint production of an account can have interpretive difficulties whereby different researchers may produce different knowledge (Brinkmann & Kvale, 2015:35; Cousin, 2009:73). The

interviewer can be seen to hold a 'monopoly of interpretation' (Brinkmann & Kvale, 2015:37) when it comes to analysing the results.

There are also well-recognised power asymmetries between interviewer and participant (Cousin, 2009:75; Kvale, 2006) in conducting interviews. Ultimately I, as interviewer, define and lead the interaction- determining the topic, posing the questions and making decisions on what to follow up on and when to end the interview (Brinkmann & Kvale, 2015:37) but within those boundaries it is still possible to conduct a 'free-flowing conversation' (Radnor, 2001:59) which can produce descriptive and explanatory information on the participants' perceptions. Additionally, participants do hold some power themselves which can impact on the results. For example they can choose what to reveal and can therefore choose to only show themselves, their actions or opinions in a good light (Cousin, 2009:76), deliberately withhold information (Brinkmann & Kvale, 2015:37) or say what they think they are expected to. I will return to this later in 3.5.3.

3.4.1 Designing and conducting the interviews

For each interview I created a set of pre-prepared questions grouped around the teaching context and experience of the participants, teaching self-efficacy, and their feelings about their teaching (see appendices 3 and 4). For the questions in the first round of interviews, one of the questions (B1) was adapted from Mills and Allen (2007) and four questions (B6-B9) were adapted from Morris and Usher (2011), both of which are previous studies on teaching self-efficacy in HE. Similarly, in the second round of interviews, questions 2B, 3B and 4B were adapted from Mills and Allen (2007) and questions 3C, 4C and 5C were adapted from Morris and Usher (2011).

In constructing the main questions I sought to avoid speculative answers by choosing to use open, descriptive questions (Brinkmann & Kvale, 2015:159) prefaced with phrases such as 'can you tell me', 'what do you think', 'to what extent' which would prompt more in-depth descriptions and sharing of examples. Having a generic set of questions provided me with a structure and map to follow and ensured that the equivalent topics were covered in each interview, yet the

semi-structured format meant I was able to include additional follow-up and probe questions in the moment and adapt wording slightly between interviews (e.g. changing from 'do you' to 'how do you' on questions B3/B3b) (Rubin & Rubin, 2005:152). I chose to not send the exact questions out in advance but sent an overview of the topics and themes to be discussed and mentioned these again at the start of the interview, in addition to sending the survey as a prompt for reflection.

Using a semi-structured interview approach afforded me the flexibility to adapt each interview to the participant's own story, whilst keeping a coverage of comparable topics across the interviews. When conducting the interviews, I found that participants often provided information which formed answers or partial answers to subsequent questions, so in those cases I would adapt the ordering or probe for further information later. In some cases I adapted the wording of a main question to fit better with the conversational flow (Radnor, 2001:62). I also supplemented the main questions with spontaneous questions in response to the answers given or to pursue relevant topics (Mills & Allen, 2007) and used these to check or gain a deeper understanding (Cousin, 2009:84; Rubin & Rubin, 2005:152) by clarifying answers, extending the answers given and occasionally to share emerging ideas with participants. This fits with Brinkmann and Kvale (2015:4)'s conception of the exchange as an 'inter-view', where knowledge is constructed in the interaction between the interviewer and participant, and with Rubin and Rubin (2005)'s conception of 'responsive interviewing'. Through these additional questions I also sought to focus on generating new data rather than just eliciting answers which might simply reproduce existing opinions (Brinkmann & Kvale, 2015:18).

3.5 Ethical framework, validity and reliability

In this section I give detail on how my research was conducted with regards to ethical considerations, reliability and validity, within the reflexive TA approach. Cousin (2009, p. 17) suggests two key reasons for conducting ethical research in higher education - that it protects both the researcher and the participants, and

that it supports the 'thoughtful conduct' of the research, giving the outcomes 'credibility'. These two key reasons aligned with both the reflexive nature of the TA approach and the British Educational Research Association guidelines (BERA, 2024) for the ethical practice of educational researchers which guided all the steps of my research design, including seeking and securing ethical approval. These guidelines encompass responsibilities:

- to participants

- to sponsors, clients, stakeholders and the environment

- to the community of educational researchers

- for publication and dissemination

- for researchers' wellbeing and development.

My guiding principles were also drawn from Denscombe (2014, p. 309) which state that good social research should be conducted in such a way that it:

- protects the interests of the participants

- ensures that participation is voluntary and based on informed consent

- avoids deception and operates with scientific integrity

- complies with the laws of the land.

3.5.1 Ethics and the generation and storage of data

Before commencing the research, I sought ethical approval from Lancaster University which was secured in 2021. As discussed in 3.3 above, informed consent was required of all participants including a participant information sheet and a consent form (appendices 1 and 2). These set out the purpose and main features of the research, the risks and benefits, that participation was voluntary and that they had the right to withdraw within set timescales (Brinkmann & Kvale, 2015:93). Written informed consent was secured from each participant. In conducting the interviews, the semi-structured questions were designed in advance (as discussed in 3.4.1 above) to be non-threatening and non-stressful, and to encourage open and comfortable responses. The considerations I made with regards to conducting the interviews themselves are discussed in 3.6.1 below.

The storage of data (described in 3.6.1 below) were handled in ways which ensured the confidentiality of participants as far as was feasible, for example I stored the interview recordings (which contained their name) separately from the interview transcripts, which had pseudonyms. These were all stored on password-protected, university-approved cloud storage. To preserve anonymity, I will use gender-neutral, anglicised pseudonyms for individual participants throughout this thesis and in any subsequent publications or dissemination. Where participants have mentioned other people's names or personal identifying details, these have been redacted.

Despite these steps, due to the participant group being relatively small, there is always a risk that participants could be identified from their institution, discipline, or the stories that they tell, so to protect confidentiality, the whole data will not be made widely available in a data archive or repository. A copy of all the (anonymised) data was however available to my research supervisor so that the accuracy of what I was representing could be verified. In accordance with University guidelines, I will keep the data securely for a minimum of ten years and after ten years it will be deleted. The steps taken also ensured that Data Protection laws are being adhered to.

3.5.2 Representation of meaning

My use of thematic analysis naturally has implications for the ethics of my research. Reflexive TA's focus on the representation of participant's meaning, not just summarising what they said (Braun & Clarke, 2022b) means that the story I tell should protect the interests of my participants (Denscombe, 2014) and not do them harm, particularly given that my main method of data generation was interviewing (Fontana & Frey, 2000:662). I was also aware that individual participant's experiences, knowledge and perspectives on teaching and learning will vary from each other and will also change over time. There is therefore not one 'truth' to be discovered, but meanings to be interpreted.

In identifying patterns and interpreting meaning in the dataset as a whole, there may be elements of individual participants' contributions which are unfamiliar to

them in my final discussion or which may be perceived to have a negative impact on the wider community in which they operate (Braun & Clarke, 2022b), in this case the GTA community. Additionally, in seeking to interpret meaning from the whole dataset, I will naturally select the data which most closely answers my research questions but in so doing will not have included everything and will not be providing a neutral description, rather an interpretation which as Braun and Clarke (2022b, p. 214) argue, 'is never neutral or objective, it always happens from a position'.

3.5.3 Position and bias

Central to reflexive TA is the researcher's own situatedness within the research and the effect this might have, including for the research and interview questions being asked, and the generation and interpretation of data (Braun & Clarke, 2022b, p. 13).

As mentioned in chapter one, the University of Hull is my place of employment. I work in the central Teaching Excellence Academy which provides support to all those involved in teaching and supporting learning- including GTAs- with a remit to develop, celebrate and promote excellent teaching. I am also a student at Lancaster University in the Centre for Higher Education Research and Evaluation. Working and studying at both institutions provided several benefits in conducting the research including a knowledge of the structure of the universities and how teaching is provided, access to potential participants and their teaching, the backing of my employers to pursue answers to my research questions and access to local resources such as IT and Library support.

Although I do not line manager or supervise any GTAs or make formal or summative judgements on their teaching practice or performance, my role at the University of Hull includes supporting them with the development of their teaching through training, workshops and observations and I am the co-lead of a national network which discusses and explores issues relating to GTAs and their development. This knowledge of their context and the challenges they face will inevitably have influenced the nature and formation of some of the interview questions, my interpretation of responses and will have contributed to my own

perceptions or biases on the topics in hand. As my research is concerned with meaning-making and interpreting, rather than unearthing a single truth (Denscombe, 2014, p. 97), the 'potential to control such bias makes little sense within reflexive TA' (Braun & Clarke, 2022b, p. 8). I did however put steps in place – including the summarising of participant's answers in the interviews and asking them to check the transcripts after the interviews (both discussed in 3.6.1 below) - to help ensure that the outcomes were an accurate representation of their experiences and perspectives. The data generation, storage and analysis techniques I have employed aimed to provide trust in my research and its outcomes, demonstrating that it is robust and it has been conducted with integrity (Radnor, 2001, pp. 38-39).

Whilst the distinction between my researcher role and my job role was made clear at all stages of the consent and data generation, there is a potential power relations issue because of my role and thus there exists the potential that participants may modify their behaviour or responses. My role did however give me credibility as a professional who knew the landscape and as such contributed to trust between myself and the participants.

Linked to Denscombe's concern for scientific integrity I have chosen to write about my research in the first person to acknowledge my own place and position in the research.

3.6 Data generation and analysis

3.6.1 Data generation and storage

The first round of interviews was conducted between September 2021-January 2022 at the start of the participants' teaching. Between five and nine months later, depending on when their teaching was completed, I conducted a second round of interviews (March-June 2022). This involved eight of the original 15 participants. The other seven were either unavailable, had not completed their teaching or did not respond to my contact requesting a second interview.

The geographical distance between myself and some of the participants led me to choose to conduct synchronous interviews online via Microsoft Teams, a well-recognised and accessible video conferencing tool. The Covid-19 related restrictions in place in the UK at the time of data generation also contributed to the choice of online interviewing. Similar to in-person interviews, synchronous online interviewing enables real-time responses, with a high degree of participant involvement and the potential for more spontaneity than in asynchronous interviews (James & Busher, 2012:179). In addition to giving me and my participants flexibility over time and location (James & Busher, 2012:179), Teams - as with other video-conferencing tools - allows for natural conversations (Salmons, 2016) which can be recorded and a transcript of the recording automatically generated.

As all of the participants were PhD students in UK universities, I expected that they would all have access to reliable, confidential Wi-fi connectivity either in their institution or at home which would be safe from interception, a potential issue in some contexts (James & Busher, 2012:178). All of the participants had webcams which made establishing rapport easier and avoided 'visual anonymity' (James & Busher, 2012:181). There were virtually no technical issues in conducting the interviews, beyond an occasional glitch in the sound. Had major technical issues arisen which had comprised the capturing of useful data, my plan was to stop the interview and re-schedule it. I also took brief notes during the interviews, to capture my own in-the-moment reflections and observations for my research journal (see 3.6.3 below), and also as a valuable back-up (Salmons, 2016) in case the transcript and/or recording failed.

Participants could choose where to be when being interviewed and could therefore set their own privacy parameters, however it is acknowledged that wherever they were accessing Teams from, they may have had privacy concerns which could have impacted on their ability to share information freely (James & Busher, 2012:178). For that reason, at the start of each interview before recording commenced, I checked that they were happy with how to use Teams, discussed the fact that the interview was being recorded and checked that they were in a

safe, confidential space where they could speak openly. The transcripts and recordings were stored on a University-approved cloud system, protected by password and only accessible by myself.

Responsive interviewing is based on mutual trust and respect between the interviewer and the participant and a permissive and friendly atmosphere must be established (James & Busher, 2012:182; Rubin & Rubin, 2005:83) so I sought to build rapport and create a comfortable environment in which participants would feel able to speak freely about their experiences and perceptions. I used the time before the recorded interview started to introduce myself, make some general conversation to put the participant at ease and be available to answer any questions or address any concerns. In responding to their answers I also sought to avoid any emotional reactions or judgemental responses (Salmons, 2016). Adopting a 'responsive interview design' (Brinkmann & Kvale, 2015:129; Rubin & Rubin, 2005:152) also helped with building rapport as I adapted my questions iteratively to best suit the participant in front of me and what they wanted to say, whilst still eliciting information relevant to the research questions. For those participants from my work institution (Hull) who I had met or taught before, I also used the pre-interview time to reiterate that the interview was for the purposes of my research and not related to my professional role.

Throughout the interviews I sought to use active listening (Radnor, 2001:60) or what Rubin and Rubin (2005) call the 'art of hearing data'. Active listening in interviews seeks to understand the participant's sense of an experience without the interviewers own perceptions intruding (Weger Jr et al., 2010), and it can enhance the quality of data gathering in interviews, and contribute to rapport, trust and credibility (Lavee & Itzchakov, 2023). Techniques I employed included staying present- seeking to avoid interpretation of meaning in-the-moment- and reflecting and summarising the participant's words back- to establish and validate their meaning (Lavee & Itzchakov, 2023; Weger Jr et al., 2010).

It is acknowledged that it can be 'problematic' to turn oral language into written (Brinkmann & Kvale, 2015:203). My transcriptions were not verbatim as I was not conducting a linguistic analysis, but rather they took a literary style which enabled

the communication of meaning (Brinkmann & Kvale, 2015:207). Given concerns around the 'monopoly of interpretation' (Brinkmann & Kvale, 2015:37), to seek respondent validation (Radnor, 2001:62) I sent the transcript to participants to check after the interviews in order to give them the opportunity to correct any mistakes or make additions before I began my analysis.

Just as it is acknowledged that it is the practice of teaching that makes us better teachers (Chang et al., 2011; Deacon et al., 2017), 'the craft of research interviewing is learned by practicing interviewing' (Brinkmann & Kvale, 2015:75). Whilst I had conducted similar exchanges previously, including summatively assessed professional conversations, formal job interviews, and through the formal coaching and mentoring of others, I found that my sense of research interviewing self-efficacy developed as I conducted more interviews. Conducting a cluster of interviews close together and reflecting on my experiences in my research journal (see 3.6.3 below) in between times enabled me to hone my craft and be more confident and assured in my role as interviewer.

3.6.2 Data analysis

As mentioned in 3.2.1 above, Braun and Clarke's thematic analysis process involves six phases which I will summarise here before going into detail about each phase:

1. **dataset familiarisation** – where I read and re-read the content of my dataset, immersing myself and critically engaging with the content
2. **data coding** – where I systematically worked through the dataset to identify anything which seemed meaningful or interesting to create codes
3. **initial theme generation** – where I clustered codes which had shared concepts to create themes which responded to my research questions
4. **theme development and review** – where I went back to my complete dataset to check that the themes made sense and that they were the most compelling story of shared meaning.

5. **theme refining, defining and naming** – where I consolidated the themes to ensure each had a clear fit to the overall story of my data and in relation to my research questions

6. **writing up** – where I formally wrote the narrative to tell the story of my dataset.

I approached my data analysis knowing that it could not be accurate or objective (Braun & Clarke, 2022b, p. 8) and that there is no standard way of divining and communicating the meaning of words spoken in an interview (Brinkmann & Kvale, 2015:218). What I sought to identify were the stronger themes and patterned meanings that I could identify through systematic engagement with my dataset (Braun & Clarke, 2022b, p. 8).

3.6.3 Reflective journal

From the start of the research process, I chose to keep a reflective research journal to document both my thoughts and feelings on the research process itself, but also my decision making and activities, including related reading and training I had undertaken. These journal entries were invaluable at the time as an active document to record facts, decisions and actions (an important aide-memoire when time to work on the research was scarce around a full-time job), but it had particular value for meaning-making during the data analysis process when I was able to trace back developments in my thinking on the data, revisit reflections-in-action (Schön, 2017) during the interview process, and see how themes had started to be developed and refined.

My reflections also had a role in my ability to notice my situatedness and assumptions in terms of both my participant group and the topic of the research (Braun & Clarke, 2022b, p. 14). Together, they provided an honest account of the challenges and successes of the research process, and were a key part of the reflexive TA process (Braun & Clarke, 2022b, p. 19) which I will turn to next.

3.6.4 Data familiarisation

Braun and Clarke (2022b, p. 43) describe two processes as part of the data familiarisation phase- that of immersion and of critical engagement. After I had

conducted the first interviews, I downloaded each automatically generated transcript and then around a week later, went back through the transcript with the recording to correct any computer-generated errors. Leaving a week meant that I was coming back to the data fresh and this interval, coupled with going back through the transcript and recordings word-by-word, meant that I was able to more deeply familiarise myself with the participants words on the paper in conjunction with their expression, emphases and non-verbal cues through the recordings. Immersing myself in the data- as a reader and a viewer of the recordings- gave me a clear sense of what was being said so that I could summarise it in my journal. Noticing and remembering what previous interviewees had said also helped me to build on and adjust questions for subsequent interviews.

Once the first round of interviews had been completed, I re-read all of the transcripts together. Then with the second round of interviews, I again immersed myself in the individual transcripts close to the time of the interview, and all the transcripts together after the interviews had been completed. This phase was therefore an ongoing and repeated process.

As I became more immersed in the data, I had naturally started to engage with the content, asking questions of it and starting to make sense of it (Braun & Clarke, 2022b, p. 43). During this reading, I considered what assumptions each participant might have made, how they were making sense of their experiences, and how these differed between participants. I wrote summaries of each participant and the story they had to tell, noting anything which seemed meaningful. I also examined their experiences in relation to my own assumptions and whether I was reacting to their stories or making sense of them in a particular way. Again, my journal was useful here as the notes I'd made during the interviews – including one-word comments or reactions - contributed to my critical engagement, and I was also able to capture my further thoughts and reflections from this data familiarisation phase.

3.6.5 Data coding

Through the data coding phase, I aimed to generate codes which represented specific meanings within my dataset (Braun & Clarke, 2022b, p. 52). The familiarisation phase had enabled me to generate a few tentative codes, but during this phase I used the Nvivo qualitative data analysis software to go through each transcript systematically and code extracts of text, phrases and even individual words. Initially my codes were broad, but they evolved and became more specific as I worked through, so that I could be sure I was establishing as many codes of significance as I could. This resulted in many codes, with some extracts of text being coded against multiple different codes. Whilst this felt overwhelming, and whilst I was impatient to 'leap ahead' (Braun & Clarke, 2022b, p. 54) to what I could see were emerging as key areas, this rigour was a crucial part of the process to ensure that I was identifying patterns across the entire dataset.

These initial codes are listed alphabetically in table 3.3 below.

Academic performance (students)
Approachability
Attendance
Autonomy
Balance of teaching and research
Being a GTA
Comparing self with other teachers
Department
Effective teaching
Empathy with students
Emulation
Experience of teaching
Familiarity with subject
Feedback from students
Interaction with or input from students
Lack of information
Learning from / with students

Marking and assessment
Memorable quotes
Near peer
Need to be proactive
Observation
Opinions about their students
Other GTAs
Preparation
Problems and challenges
Reactions / emotions / feelings
Reasons to teach
Reflection
Responding to students' needs
Strengths and achievements
Student-centred teaching
Students' learning
Support from academic colleagues
Teaching techniques / methods / activities
Their experiences of being a student
Threshold concepts
Training / development
Type of teaching
Uncertainty

Table 3.3 Initial codes from dataset.

3.6.6 Themes - initial generation, development and review

Once this initial coding was completed, I started categorising the codes into topic summaries and then themes, which have been defined as areas of 'shared meaning organised around a central concept' (Braun & Clarke, 2021; 2022b, p. 77). However, I should note that during this process some additional codes were generated, reflecting that the analysis was a fluid, not linear or staged process. Initially I tried categorising the codes against the four elements of self-efficacy, but this didn't make sense for all the research questions, so I re-categorised them into

themes which spoke directly to my broad research questions, those which were of tangential relevance, and those which did not relate.

This was an interesting point in the analysis for me as I could start to see many directions the research could go in, with lots of potential avenues to explore. For example, several participants had spoken about their feelings about marking and assessment, but whilst this could be considered a form of interaction with students, it didn't directly relate to their initial practices in the classroom and it wasn't something which I had directly asked about or explored with the whole participant group, so whilst it is a potential area for future exploration, it had to be set aside for this research. Being guided by my research questions enabled me to focus my themes on just the areas of relevance, but I was careful to keep the other codes as I had already recognised that the research process was not sequential, and these codes may still become useful at a future point in the exploration.

This phase helped me to firm up what my exact research questions would be, as they had previously been clear but broad (Braun & Clarke, 2022b, p. 42) but the patterns in the dataset led to more specificity, for example there was more nuance in the patterns around student interactions which led to a tightening of research questions two and three.

At this point of developing and reviewing themes, I went back to the complete dataset as I wanted to ensure that what I had identified fit with what participants had actually said and meant, and that they were the most compelling story of shared meaning.

3.6.7 Theme refining, defining and naming

The next phase of the analysis was to refine, define and name the themes to determine that they had a clear purpose and fit with the overall story of my data. In doing this, I checked that the themes were evident across the dataset, rather than just in one participant's responses, to ensure patterned meaning. During this phase there were times when I felt quite distant from the data itself, but was reassured that this being 'two steps removed' is a recognised part of the process (Braun & Clarke, 2022b, p. 101). I did however ensure that I went back to the

dataset after this phase to continually check and refine. Whilst I went through many iterations of refining, defining and naming my themes, including during the subsequent writing phase, the core themes I established and their relation to the codes and research questions are presented in table 3.4 below:

Topic area	Theme	Codes	Research Question
Becoming a small-group teacher	The importance of being resourceful	Comparing self with others Being a GTA Comparing self with other teachers Emulation Experience of teaching Familiarity with subject Feedback from students Lack of information Learning from/with students Need to be proactive Observation Other GTAs Preparation Problems and challenges Reactions / emotions / feelings Reasons to teach Reflection Strengths and achievements Student-centred teaching Students' learning Support from academic colleagues Their experiences of being a student Uncertainty	1
Interactions with students	Students matter more	Academic performance (students) Being a GTA Empathy with students	2

	than they realise	Experience of teaching	
		Feedback from students	
		Interaction with or input from students	
		Lack of information	
		Learning from / with students	
		Opinions about their students	
		Problems and challenges	
		Reactions / emotions / feelings	
		Responding to students' needs	
		Student-centred teaching	
		Students' learning	
		Uncertainty	
Conceptions of teaching effectiveness	Effectiveness is relational	Academic performance (students)	3
		Approachability	
		Attendance	
		Being a GTA	
		Comparing self with other teachers	
		Effective teaching	
		Emulation	
		Experience of teaching	
		Familiarity with subject	
		Feedback from students	
		Interaction with or input from students	
		Lack of information	
		Learning from / with students	
		Opinions about their students	
		Preparation	
		Problems and challenges	
		Reactions / emotions / feelings	
		Strengths and achievements	
		Teaching techniques / methods / activities	
		Uncertainty	

Table 3.4 Relationship between themes, codes and research questions.

It should be noted that some of the codes were common across the themes, such as 'uncertainty' and 'lack of information' so the relevant quotes within those codes were extracted as the writing developed. During writing there was also some overlap and shifting of codes particularly between research questions two and three.

3.7 Summary of chapter

Through this chapter I have described the stages involved and decisions made in selecting a methodological framework and methods for this study. Whilst at times feeling like a long and repetitive process, I found it enjoyable to interpret the pattern meaning within the data. The reflexive TA approach gave this stage rigour and enabled me to fully explore the data I had generated, enabling me to feel confident that the stories I present are representative of the GTAs' experiences. The outcomes generated as a result of this design will have significance in understanding the roles of both non-formal learning and interactions with students for GTAs' teaching development, and these outcomes are presented in the next chapter.

Chapter 4: Outcomes

4.1 Introduction to chapter

In this chapter I will present the findings from my interviews with the 15 GTAs which I analysed using the reflexive thematic analysis process described in chapter three. I have organised these findings against the relevant research questions (RQ1, RQ2, RQ3). For each of the research questions I will present my interpretations of the responses from participants alongside quotations from the transcripts which evidence what was said. Through this I will show how their experiences and perspectives are both similar and distinct.

I will argue that there were three main non-formal and informal sources which GTAs drew from in learning how to teach – their experiences as a student, their colleagues and peers, and their knowledge of the subject. I will show that the interactions GTAs had with their students in the SGT setting supported the development of their sense of teaching self-efficacy through contributing to their confidence and competence in teaching, and the development of their pedagogies. Finally, I will argue that building up their pedagogies through interactions with students, and students' responses and enjoyment of their teaching sessions, contributed to GTAs' conceptions of teaching effectiveness, but that such interactions could feel high stakes.

RQ1 How do GTAs use non-formal and informal sources when learning how to teach?

4.2 Experiences as a student

The first source I will discuss is GTAs' own experiences as a student, as this was often the first source participants said they drew from when learning how to teach. This can be considered as both a form of informal learning (as it was accrued through their everyday lives and was unintentional) and as a form of implicit non-formal learning (which is acquired unconsciously). All of the participants were enrolled as PhD students and all had previously completed undergraduate and master's studies, with eight having studied at the same institution they were now teaching at (see table 3.2), and five of those teaching on a module which they had previously completed as a student. These experiences of being a student became a key source of information for their teaching preparation, through helping them to shape conceptions of effectiveness, giving them sources to emulate or reject, and as a source of confidence.

4.2.1 Experience as a student to inform conceptions of effectiveness in SGT

'I remember what I liked and didn't like about my tutors' [Jordan].

Blake, Charlie and Jordan were able to use their memories of being a student to help them understand what effective SGT meant to them. However, they each had different routes to HE teaching and therefore different expectations and perceptions of what effective teaching is. Blake had started their PhD following 25 years in an unrelated professional role, and whilst they had experience as a trainer, had never taught, but wanted to teach as they were passionate about their subject. Jordan had started their PhD directly after their master's and undergraduate degrees which they had completed at the same institution and in the same subject, so had more recent experience of being an undergraduate than Blake. Like Blake though, they were teaching tutorials and seminars to small groups of around 10-25 students. Charlie had previously studied in Italy and therefore had recent experience of being a student, but no experience of the UK education system, including the types of discussion-based SGT that they were now expected to teach.

Both Blake and Jordan used their experiences as a student to directly inform their understanding of what an effective small group teacher did. Although Blake hadn't recently been an undergraduate, they drew from their memories from 25+ years ago, together with more recent experiences as a master's student to inform their understanding of the 'bag of tricks' they perceived to be necessary for effective small group teaching. Similarly, Jordan's answers to the question 'what is effective teaching' included the importance of building teaching relationships and interactions with students in the SGT setting. Jordan was also able to draw from their experiences as a student to help them understand the content that needed to be covered at different stages and to determine what would make them an effective teacher.

Conversely, whilst Charlie was 'motivated ... by previous professors, lecturers back in the past' to inform their understanding of what an effective teacher was, they were approaching teaching with different experiences to Jordan and Blake. As such, they felt that they didn't understand what SGT was in the UK context, so were 'scared' about whether they could effectively perform the role of small group teacher, as it was 'the first time teaching at that level and also 'cause I was facing another system of education' [Charlie].

Despite these different routes, being able to draw from their memories of being taught contributed to these participants' understanding of teaching, before they had direct experience with students.

4.2.2 Emulating or rejecting teaching approaches they had experienced

'I want to...take the best of the best lectures that I had when I was doing my bachelors' *[Riley]*.

In reflecting on their experiences of being taught as a student, GTAs could start to consider the kind of teacher they would like to be. Riley, Elliot, Morgan and Cameron all drew from their previous experiences as a student to consider the approaches their previous teachers had taken and they used this reflection as a source of information and inspiration for what they could do, but also what they should avoid.

Despite having had a successful previous career in an unrelated field, Elliot felt like the 'apprentice' when it came to HE teaching, which led to some feelings of anxiety in approaching teaching. Yet even though they hadn't studied for over 20 years, they were still able to draw from their past experiences as a student to help them to prepare for teaching. They felt that they were 'clearly trying to model the teachers that have inspired me' but also sought to avoid approaches which had been ineffectual for their learning when they were a student, for example:

> I remember from being an undergraduate, seminars either felt like they were an interrogation, which is awful, or they felt like they were a competition between students and you know, I don't want it to either feel like it's a competition or an interrogation.

They felt that their role as the apprentice meant that they could get to know their students in a way that the Module Leader couldn't and so they made concerted efforts to build effective relationships with their students and promote a sense of belonging and mattering, such as strategies to learn students' names, which 'helped a lot'.

Riley, Cameron and Morgan each had similar routes to teaching. Whilst in different disciplines at different Universities, they had each progressed from undergraduate, to Masters, to PhD in the same departments, with some professional experience in either an industry placement (Riley) or their discipline (Cameron and Morgan). They were all teaching undergraduate seminars and recalled styles of teaching they had experienced in the past, reflecting on how the teaching style adopted had or hadn't supported their learning as a student in that session. They all expressed a feeling that the teaching had been 'traditional' with little room 'for offering a new interpretation or a new opinion' [Morgan], which for Cameron meant that they 'didn't get on with that teaching style', leading to the adoption of alternative styles and approaches.

In considering the styles, attributes and methods of their past teachers, these GTAs were therefore learning about how to be a teacher and were able to make decisions on both the approaches that they would seek to avoid in their own practices and the type of teacher they would want to be. Through drawing from their memories of being a student, they were able to describe practices which hadn't worked for them and in so doing, could consider alternative ways for them to be in their own teaching.

4.2.3 Experience as a student as a source of confidence to approach teaching

'That's something that made me feel more confident in teaching because I'm not stepping into something I'm completely unfamiliar with' [Alex].

Where participants had previously studied the module they were now teaching, all of them said that they used this as a source of confidence. As an example, Alex drew from their memories of being a student to help them understand what is involved in SGT and used this as a source of generating confidence to approach it. They had some clinical experience and had been a student immediately prior to starting their PhD but hadn't taught before. Their teaching was in discussion-based tutorial sessions for undergraduate and master's students where their role was to answer questions and facilitate group discussions, and they felt that their

confidence 'mostly comes from' their knowledge of previously studying the module that they were now teaching. When comparing teaching on that module – where they were 'quite familiar with the overall structure and what's expected from students' - with teaching a module that they hadn't previously taken, they found the latter was more challenging to teach as they were 'unsure about what to do and what to focus on'. This direct experience of the teaching they were now being asked to deliver was therefore a valuable source of learning for Alex, however this opportunity is one that was not available to all the GTAs.

4.3 Colleagues and peers

The second source I will present which GTAs drew from in learning to teach in HE was other people, namely colleagues in their department and their fellow GTAs. This can be considered as both reactive and deliberative non-formal learning, as GTAs were using their interactions with colleagues and peers to both react to experiences and to set time aside to review them. GTAs were able to compare their conceptions of teaching effectiveness with others by observing the teaching of colleagues and peers and discussing teaching with them, and through this gained reassurance as they approached their own initial teaching experiences.

4.3.1 Teaching observations as a source for comparison and emulation

'I've been able to take a little bit of that for me' [Riley].

Teaching observation experiences provided some of the GTAs with a valuable source of information about how to teach in small groups, what techniques work (or don't) and what effective teaching looks like. By considering effective teaching through the lens of being an observer, participants could compare their own potential skills, competencies and approaches as a teacher. This contributed to their decision-making processes as they settled into their new identity and role as a teacher and meant that observing and discussing teaching with others provided a source for emulation. For example, Cameron felt that they could take ideas from their observations and 'add them to my own... presentation style'.

Robin, who had been a lawyer for 13 years prior to starting their PhD, had initially started HE teaching because they had enjoyed delivering presentations and training in their workplace. They had completed some training in HE teaching which included the opportunity to observe peers and more experienced colleagues and they had used these teaching observations as a means to compare their own style. For example, when observing a fellow GTA, they were able to assert the methods they felt were needed to be an effective small group teacher:

> I realised that he didn't adopt those teaching techniques which I'd learnt. And because of that, he wasn't passing across his message effectively. The class was boring. The students were just looking, I don't even think they understood most of [it].

Similarly, Riley compared themselves with the teaching they had observed from both academic colleagues and other GTAs and used that to enhance their approach. They discussed two fellow GTAs, one of whose students called her 'Miss Fluffy' because 'she is super nice with her students' and 'takes a very sympathetic approach', and one who 'has no sympathy and no time' and 'takes a more… arm's length approach to teaching'. They felt that being able to observe these different approaches 'certainly shaped my [teaching style] for the better'. Riley also used comparison with an experienced academic's teaching to reassure themselves that their style was appropriate:

> My supervisor … is a senior lecturer and he still teaches how I teach which makes me feel as though it's certainly possible, and it would be fine to do that.

Through these comparisons then, Riley and Robin were seeking to both justify and position their own approaches and teaching styles. Whilst this comparison had given Riley some reassurance, for Alex the opposite was true. They describe how their confidence had been affected when observing another GTA teaching:

> At the time I was teaching with another … she's also doing a PhD, but she's much, much more experienced than me … So one of the strongest feelings I had was that can I match her level of knowledge of this? … she just went on

with different topics and I was really freaking out there, I was like 'Wow!' I was not expecting it so yeah, I felt the pressure to say something to make myself match her level.

Despite this 'pressure', the opportunity to observe had still provided a valuable source for learning how to be a small group teacher, even if they felt they couldn't yet do it themselves.

Rowan, who had previously taught English and Chinese, didn't yet have any experience teaching their discipline at HE level. They hadn't done an undergraduate degree in the subject they were teaching, or at a UK HEI and described how they felt 'a little bit anxious' about leading their first seminar, as they didn't know 'if I can handle it'. To overcome these challenges, they drew from observations from three sources. Firstly, they felt it was important that they 'pretend to be a first-year undergraduate' by sitting in on lectures prior to running their own sessions, so they could see what was taught and how. Secondly, they reflected on when they had been a student and how their teacher had encouraged them by giving them 'a little push... to help me improve myself' and that they hoped they 'can be that kind of teacher next term in my seminars'. Thirdly, in addition to lab-based teaching, they were also running seminars, so sought opportunities to observe a fellow GTA leading a seminar to get ideas they could emulate when teaching the session which 'kind of relieves my concerns'. From these multiple observations, they were therefore able to consider what made teaching in each setting effective and use this learning to emulate and base their own approaches on.

The benefits of being able to observe and learn from the teaching of others were not available to all participants though. Opportunities for teaching observations (as observer or observee) were not routinely available or offered, and some participants had to seek out such opportunities themselves, with Taylor and Elliot all citing examples of where they had to pro-actively seek observers, and for Jordan, the opportunity to observe came too late to be a source of learning for their initial teaching as they had 'already done a term of teaching'.

4.3.2 Discussing teaching to generate ideas

'Just discussing with colleagues who were also teaching or who had taught, you know different ideas came around' [Blake].

Where participants had the opportunity to talk to their colleagues and peers about teaching- either their own teaching or teaching-related topics more broadly- they found it a valuable non-formal source of information. For example, Blake felt that they 'learn by observation' and that their teaching style was 'a reflection of my own skill or practice, but also what I've observed' and they also used informal discussions with others to help work through teaching-related problems and generate ideas on how to resolve them:

> We discussed the seminar and the reading and questions and approaches and also methods. And I think it's fair to say, although I enjoyed it and the groups were responsive, I think my method was a bit repetitive and just discussing with colleagues who were also teaching or who had taught, you know different ideas came around, which in some cases I tried and for others I wasn't brave enough to do.

Charlie had their teaching observed by a lecturer on the same course and through the discussion afterwards found that the positive comments they received 'really helped me a lot in the sense that it strengthens my way of doing the teaching'. Elliot too, found a conversation with their Module Leader about how to teach the 'horrendously difficult material' to their students 'super helpful' as they were 'not sure if I would have figured that out for myself'.

These opportunities to discuss teaching with others were however sporadic. For example, Alex felt that the 'information for teaching ... it's a bit messy- it's a bit all over the place' and said that they had 'never met' the Module Leader or talked to them about teaching, although they had discussed marking, and spoken with another GTA about teaching and shared ideas with them. This lack of input led to a sense of uncertainty over their abilities, and input from someone with 'a lot of teaching experience and experience in the field' would have given them reassurance and confidence:

If they can tell me I'm doing something right or this is really good, I'd feel really confident about that particular thing.

So even though opportunities to discuss and observe teaching and get peer and colleague feedback on their own emerging practice were valuable in becoming an effective small group teacher, these could be inconsistent and often had to be self-generated.

4.3.3 Using others as a source of reassurance and support

'I'm more sure about how I deliver it, so I know that I'm in the right way. I can improve, but now I'm on the right path' [Charlie].

Engaging in teaching conversations and observations could give GTAs a source of reassurance and support as they approached their own teaching and was valued by participants. Alex for example, felt that colleagues would be able to advise them if they were doing teaching 'right', concluding that:

I'd say the other teaching staff have more influence on my feeling of confidence [than my students].

They did however feel that they hadn't had sufficient support and that 'more support would be helpful for sure'. For Taylor, even where support from colleagues wasn't immediately visible, they still had the sense that they 'could ask for help if I needed'. Taylor was completing a part time PhD whilst also working as a Mental Health Nurse in an Accident and Emergency department and whilst they felt confident in their practitioner knowledge, they were less confident about their ability to communicate that knowledge to students and facilitate their learning of it. They did though feel that they had support from the Module Leader and that they'd been 'trusted to do stuff', which gave them some reassurance - they felt that they wouldn't have been asked to develop and deliver teaching if the Module Leader didn't feel they could do it.

Thus, when support was asked for, these participants found that academic colleagues – particularly their supervisors and the module conveners who they were working most closely with– were willing to help and were supportive with their

teaching. As well as giving feedback on their teaching, other support from colleagues cited by participants included checking in after sessions to see how the students were doing (Alex), being able to ask questions about content (Morgan) or providing advice on specific situations with students (Riley).

Colleagues and peers were therefore a valuable but inconsistent source of support and information for GTAs in their initial stages of learning to be a small group teacher and in shaping their understanding of effectiveness.

4.4 Knowledge of the subject

The third, implicit non-formal source of information GTAs drew from when learning to teach was their own knowledge of the subject they were teaching. This was, for many, a key concern as they approached teaching and it formed an important part of their preparations, being mentioned by nearly all the participants. This knowledge was either based on their professional background or their study of their discipline. I have defined it as an implicit non-formal source as the intention of the activity was to acquire knowledge as a student, not as a teacher.

4.4.1 Practitioner knowledge as a source of confidence in content delivery

'I've practiced [Law] for 13 years, so … I know I've learned so much from practice and theory and combined together it gives me a lot of confidence'. [Robin]

Three of the GTAs had been practitioners in a profession (Nursing, Social Work, Law) which they were now teaching, and they used their professional knowledge to give them a sense of authenticity and confidence. This also gave both Jamie and Taylor reassurance as they approached their first teaching experiences:

> I think what makes a good teacher is if you actually have experience of doing the job and it's relevant and up-to-date experience rather than, you know theoretical stuff that you learned many years ago. (Jamie)

> One of my strengths [is] … still doing the job. So it's very current. It's not like, 'oh, when I was a Nurse 62 years ago, we did this and now research says

that this is what we're doing now and why'. It's still using that evidence base, but you're saying that this is really current today and I think that's been a real benefit. (Taylor)

Having that knowledge gave them confidence in delivering their content and it meant that their time to prepare for teaching was reduced, enabling them to focus instead on developing their methods and approaches for teaching. It was this aspect of teaching which could be a cause for concern though, with Taylor expressing that transferring their knowledge to the academic environment was 'the unknown, cause I've never really done it before' and similarly Jamie felt that their academic knowledge was insufficient to teach topics outside of their profession, which they had only recently learnt themselves, showing that confidence in the content was drawn from their practitioner experience, rather than pedagogic knowledge or teaching ability.

Neither Jamie, Taylor or Robin drew from their experiences as a student as much as the other participants did in preparing to teach, relying instead on their knowledge of their profession to give them confidence to both approach teaching and to know that they had command of their subject, as summarised by Robin:

You know, ask me questions beyond even what I've brought to class, even tricky questions, but because of my knowledge it helps me a lot in answering their questions you know.

For Jamie, Taylor and Robin then, as well as being a source of confidence, their practitioner knowledge was also a means of establishing credibility and authenticity with their students.

4.4.2 Knowledge of subject to be able to answer students' questions

'If I'm not well prepared, I wouldn't have confidence to ask students or teach students'. [Sammy]

In preparing to teach, knowledge of the subject was a natural and important consideration for GTAs, but for those GTAs who either didn't have a professional background, or whose background wasn't relevant to their teaching, such as Alex

and Blake, their disciplinary knowledge was key. Being familiar with the subject they were teaching was considered by Alex and Blake to be a vital element of developing their sense of teaching self-efficacy as they approached their initial teaching experiences. The setting of a small group teaching session with its inherent challenges and proximity to students demanded familiarity with the subject in order to be able to deal with those close interactions:

> You really need to do a lot of background reading, especially for this more like open form of discussion. All kinds of questions come up during the session and you need to sort of feel prepared for, you need to know the topic otherwise students ask me this, do I know the answer? I'm not sure. I'm like 30% confident! So I guess that could happen if you're unprepared. (Alex)
>
> Absolutely knowing the material, absolutely knowing the material. Confidence that you can answer questions. Confidence that you can, you know, give added value to your students. I think teaching something you're not familiar with that you know - I've never had to do it - but I would struggle with that, yeah. (Blake)

Being able to demonstrate this deep knowledge and understanding of the subject was closely linked to their feelings of credibility as an effective teacher, and conversely, displaying a lack of knowledge was seen as potentially exposing for Blake:

> Students aren't fools ... if you don't know your stuff and you're no good at what you do, they find you out very quickly.

Riley didn't engage in the same level of subject knowledge preparation as Alex and Blake. They had taught on topics related to their research and also topics that they'd 'never studied... never worked in it...I don't even use it' but even without being 'an expert in any way' felt that they could teach 'pretty much anything that I kind of vaguely understand in sufficient detail'. However, they still felt that any lack of knowledge could be exposed if they were unable to answer students' questions:

I think that was something that I was worried about, like getting some smart arse just like asking a question and me just being like 'uh I don't know the answer' - that would have destroyed my confidence if that had happened at the start.

Sammy, too, felt that if they 'cannot provide feedback or answer my student questions that would influence my confidence'.

This link between knowledge of the subject and an ability to respond effectively to students' questions was also shared by Rowan and Pat, who drew more from their knowledge of their subjects in preparing to teach than their experiences as students (which were only mentioned by Rowan as a source for emulation). For Rowan, knowledge of the subject became the main focus of their teaching preparation so that they would know the answers to the 'very, very detailed questions' that students might ask. For Pat, who was leading discussion-based sessions on fiction in their English Literature classes, their knowledge of the subject had to be more than just basic facts, as they had to support students to deepen their understanding through discussion. This had the benefit of enabling them to feel that they were 'learning together' with their students, but meant that they had to develop specific skills:

As a teacher, how much you're skilful to handle these questions, keeping in mind the things you need to impart to the students, how much you do that, is it the right amount of information you're giving or how much it is right or wrong. This is very important as a teacher to keep a balance of.

Cameron too felt that they were 'fairly confident in my knowledge. It's perhaps the deliverance and the teaching style that I need to work on', indicating that knowledge of the subject is only part of the story. A thorough knowledge of the subject did however enable these participants to feel more confident in being able to steer discussions and respond to student's questions, but that the scope of the knowledge required needed to be broad in order to anticipate the different topics which might arise in the SGT setting.

RQ2 What role do initial interactions with students play in supporting the development of GTAs' teaching self-efficacy?

The opportunity to actually be in a classroom – to interact with and teach students in the SGT setting - was a key source of continuing to learn how to be a teacher and in developing a sense of self-efficacy. Some of the participants (including Blake, Jamie, Morgan) had autonomy over what to include in a session, how to plan it and how to deliver it. Whilst this could be seen as a positive ('I was given a lot more freedom, which was great' (Morgan)), it could also contribute to a sense of uncertainty, with GTAs unsure what to prepare (Morgan, Taylor) and what methods and approaches to take (Morgan, Elliot, Rowan). However, it was interactions with students during their initial teaching experiences which gave GTAs the opportunity to build up effective practices, get to know their students and understand how to meet and respond to their diverse needs. I will show that through this, the GTAs sense of competence and confidence could develop.

4.5 Interactions with students and the development of confidence

Confidence and its development were recurring themes throughout the interviews and gaining classroom experience with students was a factor in developing the confidence of a number of the participants.

4.5.1 Interactions and confidence

'In terms of my sense of confidence or competence ... it is in my interactions with the students'. [Jordan]

As mentioned in 4.2 above, five participants were teaching a module they had previously completed as a student, and three of these said that they used that experience to give them confidence. Two of them also cited teaching experience as a key source of their confidence development. Cameron acknowledged that they already felt 'quite confident' about their teaching because of their prior experiences, but that this confidence would grow because 'I've not done them very

often and I think that will come more with experience'. As with Charlie, they felt that their teaching and their confidence improved after each session:

> The first class … it's probably not as good as the second class and then in turn the second class is probably not as good as the third class 'cause by that time I've had it twice before and I know some questions that are going to be asked.

For them, confidence in SGT came then from having time with students and being able to anticipate the questions they would ask, so being able to repeat-teach a session over a short time-frame was useful.

For Blake, the ability to try different 'skills and techniques' in their taught sessions led to some reflections around what had worked for their students and what they would change in the future. For them, confidence was bound up with knowing the subject and through that being able to 'give added value to your students'. Now that they had some positive experiences with students, they were able to build on those and this in turn gave them 'higher' confidence in their abilities for future practice. As a result of their 'massively positive' experience with students, they were keen to continue:

> I absolutely loved it. I just can't wait to do it again. I would be gutted if I'm not asked to teach next year! Absolutely gutted.

Interactions with students were also important for Charlie, Jamie and Jordan as a source of confidence in their abilities as a small group teacher. Charlie recalled positive comments from students after taught sessions and 1-1s, where students felt Charlie had explained the content clearly, which gave Charlie a 'pat on the back'. They went on to suggest that

> The more you know them, so the more you try to establish contact with them, the easier it is.

For Jamie, whose preparation for teaching was largely drawn from their professional knowledge, it was the interactions with students and seeing them

learn which gave them confidence that their teaching was effective during their initial teaching experiences:

> If students are engaged and they feel that they're learning and making progress then that would mean that I felt more confident that I was on the right track with things.

For these participants then, feeling confident in their abilities as a teacher was contingent on building relationships and interactions with students, however transient these might be.

Where GTAs drew from their previous experiences as a student to support learning how to teach, interactions with students then gained prominence when they started to teach. For example, Jordan, who mainly drew from their memories of being a student themselves to understand what effective small group teaching was, used their interactions with students to gauge the success of their new role. Similarly, Alex felt that their experiences as a student didn't give them all the information they needed, or full confidence, about how to effectively deliver or lead a session with their own students. They felt that they also needed more experience:

> Although I've been a student pretty much all my life, it feels different to be a teacher, and I think more experience will help me a lot.

When preparing for their SGT role, Alex felt that their proximity in age with their students could have a positive bearing on the amount and success of their interactions with students, suggesting that students might 'rather talk to a first year PhD' than an 'intimidating' or 'more experienced' academic, whilst also recognising that their students 'don't have the knowledge and experience' that they did. Whilst this gave them confidence to approach their teaching, it also shows that they had a clear sense that they were aware that their role was in between that of 'student' and 'teacher' and that this could impact on the nature of their interactions with students.

4.5.2 Student feedback to support confidence development

'I know I keep saying I don't get formal feedback from students, but even informal feedback from students is still very helpful in boosting my confidence because everything else that I mentioned that could boost my confidence, didn't happen. And also, I just think it's really empowering knowing that students find it helpful'. [Alex]

As recipients of the teaching, there was a feeling that students were best placed to be able to say whether the teaching had been effective or not. For example, when Charlie was asked at the second interview if their teaching had been effective, responded: 'you should ask the students that!'. At their first interview they had described how formal feedback wasn't mandatory and if it came 'at the end of any of the workshops it's pointless for [students] as I cannot improve' so they were instead devising their own methods of getting feedback such as a 'piece of paper in a hat or stuff like that – I will find a way'. At the second interview, when they had more teaching experience, they described how the most valuable feedback had come from talking to students informally after sessions. Similarly, Robin had also developed their own non-formal methods to collect feedback as a means of telling them about the effectiveness of their teaching, so both had needed to be creative to find ways to generate feedback which was a useful source of information for their developing sense of confidence and self-efficacy.

Alex too hadn't had access to formal feedback ('I know that with every module we have like student feedback questionnaire at the end of it, but I've never seen the results') which meant that:

> I actually don't know how well I teach. I mean, it'd be nice to hear what students think of me - maybe like send a spy into their group chat!

They had found it easier to get feedback from one-to-one interactions with students, rather than asking the whole group, and such informal feedback was useful for their developing confidence, to the extent that they wanted 'more feedback, especially feedback from students, that's really important'. The absence of feedback, or mentions in feedback, could however be a spun into a positive:

> I've asked the module lead about it and they said that they'd let me know once [the feedback's] available. It's just never happened. I guess that means there wasn't anything that went terribly wrong with me!

For Riley, who did have access to formal feedback responses via the module evaluation questionnaires (MEQs), receiving positive feedback from students on their teaching through the MEQs was a contributing factor in developing their sense of confidence:

> I've had quite a lot of positive feedback which was nice and definitely an affirmation and probably boost also to my confidence as a teacher.

This boost contributed to their feelings about whether HE-teaching was something they wanted to continue in the future, however, whilst the feedback was valuable personally, they questioned its value more broadly, suggesting that for some academics

> The emphasis is on the papers and publications not the teaching, so I'm now musing – and this is complete conjecture – but it seems to me that your teaching scores are only important if they're bad.

Feedback could also help GTAs to know what went well or what had supported students' learning too, and this was useful for their initial SGT experiences, for example Taylor found 'genuine' student feedback 'helpful for confidence' suggesting that:

> I've always had that knowledge [of the discipline] but it's about how it's received as well has built my confidence.

Whilst positive feedback on the value of the teaching was 'reassuring' to know that teaching was going well, Taylor found that the feedback was more meaningful if it was 'constructive', focussing not just on the positives, but on development too. So, whilst accessing formal feedback could be difficult, together with self-generated non-formal means these interactions with students through hearing opinions on their teaching were highly valued as GTAs took their first steps in teaching.

4.6 Interactions with students and the development of competence

'The more experience you get, the better you get at teaching'. [Robin]

Whilst time with their students was often cited as being useful for developing GTAs' teaching tools and methods, it was also a way for GTAs to build up competence and give them reassurance in their abilities. Robin felt that there is 'nothing like experience', but shared a view expressed by Elliot that having sufficient teaching hours with students in which to develop was key. As with Charlie, experience of teaching – and repeated opportunities to practice as a teacher- was also recognised by Riley and Morgan as a valuable means of developing competence. Where repeat-teaching sessions had supported the development of Blake and Robin's methods and approaches, it gave Morgan and Riley the chance to develop their competence:

> Because I've had you know, recurring experience and a lot of experience over 12 weeks, I think that's really what's helped me develop, you know, getting timings right, being able to know what works, what doesn't work and trying to develop that sort of sense of being able to think on your feet. So I think it's the sheer amount of experience in that sort of time frame I think, which has been my biggest help really. (Morgan)

> Once you've been in a situation it's easier to do it the second time and then when you've done it 10 times it's easy as pie. (Riley)

At Riley's second interview they also recognised that this experience had supported the rapid development of their teaching competence:

> At the start of teaching ... perhaps I was a little nervous and a bit jittery, butterflies in my stomach and now it's just almost like second nature already which is a quicker development than I anticipated ... maybe the competence comes from the confidence.

Repeated practice experience was evidently valuable for these participants and the development of their teaching self-efficacy. However, gaining sufficient

teaching experience could be a barrier. Elliot described the complexities of becoming a teacher with a lack of relevant experience with students:

> Where I fall down is the actual tools to use... you know when you're first learning to drive, it's all you can do to keep the car between the white lines and then if you're asked to change gear, it just throws everything off and you kind of veer into the middle of the road - that's how I feel my teaching is... I have no perspective on what's going on in the class... and I don't think I'll get that this term, I think it's too much to expect me to be able to acquire that in three hours a week.

Practice experience was then a key source for learning these 'tools' and being able to sharpen and enhance them through and with their students.

4.7 Student interaction to develop GTA's pedagogies

'Receiving those feedback is more than just a pat on the back- it can also become something to tell me, yeah you're doing right... they can really help me understand how to proceed'. [Charlie]

Through feedback from students by informal interactions, Charlie gained reassurance that the pedagogies they were using in their teaching of Economics were supporting their students' learning, and working closely with students in the SGT setting enabled them to see when the students were 'not 100% on the subject'. They used these insights to change their teaching:

> If I perceive that the student is not properly understanding it, then maybe it's me, that I should address it in another way. So I should try another way to make him understand. There are feedbacks that can help me with dealing with that and I think that if you look carefully, you will see that you will find always a good feedback to improve and change your explanation of things.

Similarly, Sammy, who repeat-taught the same session to four different groups of students per week discussed how they were able to adapt their session plan each time, based on how things had gone in previous sessions.

Morgan saw student feedback as 'it's a marker, isn't it, of the success of what

we've done'. They found it 'really quite humbling' to see when they had 'made a difference' to students' learning. They had access to both formal and informal feedback mechanisms, and whilst the formal surveys had been useful, the fact that the lecturer names were redacted meant it was difficult to get direct feedback on their own practice. They did, however, seek responses from students at the end of each session, and used this to help them decide what to change in the plans for future sessions:

> If the first one doesn't maybe go so well, you ... think well, maybe that didn't work so well in the first one. I'll change it for the second one.

Pat too 'appreciated' receiving informal feedback from students on specific methods or approaches they could tweak in their future teaching, including continuing to use humour and using more references and examples, and felt that feedback from students was:

> the way I discovered myself ... I wanted to know more about the students' perspectives about good teaching.

The use of informal feedback from students in class could be a challenge though, for example Jordan wasn't meeting the same group of students frequently enough, meaning that:

> It's hard to get much of a read on how engaged they are when I'm speaking at the front and nobody kind of gives me the feedback so I can think about what works and what doesn't, because there just isn't that week-to-week structure in place.

Therefore, whilst constructive feedback from students - received through working closely with them in SGT - could be a means of knowing if the teaching had been effective and supporting the ongoing enhancement of GTAs pedagogic practices, access to it could be problematic.

RQ3 How do interactions with students contribute to GTAs' conceptions of teaching effectiveness?

Whilst the participants' previous experiences of being a student had informed their initial conceptions of teaching effectiveness (see 4.2.1) from their perspective of a student, it was interactions with their students which contributed to the shaping of these conceptions as a teacher. There was a perception amongst the participant group that SGT requiring close interaction with students was 'the harder job' (Elliot) than 'monoline' (Blake) lecturing, and participants identified several skills, qualities and competencies that they considered to be elements of effective practice in SGT including subject knowledge (Morgan), delivery style (Blake), and showing authenticity (Jamie). Through working closely with students in the SGT setting, GTAs were able to build up their pedagogic methods, approaches and techniques, and through practising teaching were able to build their understanding of what effective SGT was. For some of the participants this was facilitated through getting to know their students and empathising with them, which is where their proximity as a fellow student was both valuable and was valued by their students. For others, the enjoyment and response from students in sessions were used as markers of their effectiveness as a teacher. However, as interactions were seen as such a key part of effectiveness in the SGT setting, there was some anxiety around 'getting it right'. These themes will be explored below.

4.8 Building up effective practices, methods and approaches through getting to know their students and their diverse needs

'Most of my development belongs to, has credit to, experience with students'. *[Charlie]*

GTAs were able to use their teaching practice to get to know their students, and through this, enhance their teaching methods and approaches. Pat had taught English for Speakers of Other Languages for 10 years but on becoming a PhD student had taken their first steps into teaching their discipline in UK HE. Whilst having some doubts about whether their knowledge of the subject was yet

sufficient to effectively conduct SGT sessions, they were clear about their aim for teaching, seeing themselves as a 'facilitator' of learning:

> My target is not how much knowledge I can give them, my target is how much I can engage everyone from every section of the class.

They had only been able to access seven or eight hours of teaching so far, but they had learned 'lots of things' from this 'little experience' and showed a concern for the learning of the students in their classes. Taylor also wanted to direct the 'flow' of their sessions towards meeting their students' interests and needs. At their first interview, before they had done much teaching, they felt that 'once I've had a few gone OK, that'll make me feel like I can do it' and cited the following as important for an effective session:

> Listening to people, understanding what the students want from a session, I think understanding kind of the different levels people are at and not thinking everyone is just at the same stage. I think building proper relationships with people so they feel they can approach you.

At the second interview, when reflecting on how the approaches they had used had worked, they discussed how they had adapted the plan to suit the students in the room, showing that their students' experiences were a key concern and that they had a desire to respond to students' interests and needs, which was possible within the SGT environment. Sammy too considered students as individuals when designing discussion activities:

> Some students are shy and they don't like to talk in the whole class, so I just let them discuss in pairs or in a small group and then we come back together and discuss the question again, trying to get key points and let other student hear what they think and trying to let them interact.

For those GTAs who were able to tailor their teaching methods to the needs of their students in the SGT setting, seeing the results of this had a positive impact on their teaching confidence, for example Taylor felt that 'I've got the ability to do it' when their students were coming away 'with a good experience' and Pat reported feeling 'happy and satisfied' when students who are 'lagging behind' were able to

contribute and improve. This in turn contributed to their conceptions of the effectiveness of their teaching.

The opportunity to get to know their students' needs influenced both Blake and Robin's practice too. Blake's aim across their teaching was to deliver 'the best experience to students that I can' without 'causing anxiety or stressing them out too much'. Through working with different groups on the same activity they were able to consider the potential impact of tweaks to their approaches:

> I had more than 10% of my students - which is a lot - with anxiety, couple of dyslexics, I've got one with a physical disability around mobility ... and I was like, 'if I switch things around too much, am I going to cause a high level of anxiety to some students which is going to get in the way of their learning?'

Similarly, Robin showed an awareness of the diversity of their students and how this influenced the approaches and techniques they adopted:

> Not everybody has the same orientation and people are from different backgrounds but you need to carry everybody along ... if you identify different languages, if people have difficulties with English, speak slowly. If people have hearing problems, speak loudly and use technology.

Robin had limited teaching hours, whereas Blake had seen the same group of students multiple times but both were able to use this contact time to consider the learning experiences of the students in the room and to consider changes to improve their teaching. Similarly, in their first interview, Charlie felt that gaining multiple opportunities to teach would enable them to gain competence and effectiveness as a teacher. They subsequently went on to repeat-teach a session to different groups over four days every week, and through working with students at the first session on a Tuesday would observe 'that they may struggle more with certain topics' and would then 'adjust my teaching' for the rest of the sessions:

> So I see that's an increasing improvement in the delivering of the lecture, which makes me feel sorry for the group on Tuesday actually... I'm afraid I'm delivering them the worst lecture of the week!

At their second interview there was evidence that it was this experience which had the strongest influence on their development:

> You have the first luxury to see that you got some problems, you had some issues and then you welcome them, you improve them, then maybe the more you go on, the more you see you can improve depending on the subject and the topic you're discussing. So yeah, most of my improvement comes from the experience. Learning by doing the process … helped me have a good start, a good beginning for the [teaching] experience.

This meant that although planning and preparation for teaching were considered necessary, plans needed to be amended or adjusted as the teaching took place, and that these adjustments were as a direct result of the interactions with – and contributions from - students. Teaching in the SGT setting inevitably gave these GTAs an opportunity to work closely with their students, and they showed how they understood their interests and needs, and through this, honed their methods and approaches. It was therefore a valuable part of their initial teaching development and conceptions of effectiveness.

4.8.1 Putting themselves in their students' shoes

I kind of know how the students … well, I know my *perception of how I felt when I did it. [Cameron]*

Some of the participants described how being a current, and in many cases, recent student enabled them to get to know and empathise with their own students. Alex, for example, remembers it being 'tough' doing a Masters, therefore they wanted to help their Masters students 'as much as I can' and Riley said that their first-year students 'don't quite know how to work with other people yet and struggle to understand where my responsibility finishes' and that 'it's easy to underestimate what they have to deal with'. Jamie, who was completing their PhD part time alongside being a Social Worker felt that it hadn't been long since they had been a student themselves and had learnt the topics that they were now expected to teach. Whilst they felt they had a lot to learn about teaching, they did feel confident in their knowledge of their discipline, and were also able to reflect

on their own time as a student when considering students' interaction in their sessions:

> I don't expect everybody to be sat on the front row and like asking loads of questions 'cause that wouldn't be me, do you know what I mean? I would be sat at the back, listening, writing, but not wanting to engage at all really.

Similarly, when Cameron was a student, they had completed the same assignment that their students were now doing so as well as being able to share extracts of it to support students' assessment preparation, they were able to put themselves in their students' shoes, whilst acknowledging that their experiences might be different. This acknowledgement that students have a different experience was shared by Blake. They had been an undergraduate over 20 years previously and found that their students had come from 'a hugely different world to me' which had different demands- but also different opportunities – and that these had an impact on their behaviour:

> I cannot judge them or … have a negative view because that is the world they're used to. That's the world that they've been brought up in. That's the way the university chooses to deliver the learning. But I think whilst recognising the differences, trying to be empathetic, but also not compromise the academic rigor of what I'm trying to teach, I think that's really important.

Blake also used their empathy with their students to enhance their approaches by putting in 'extra effort' and offering additional support:

> If I've got students that missed a seminar or they wanted to come and see me, I'd give them a chat, send them the slides … If people were struggling with essays, like 'come and have a chat'. Pointing them towards additional material that wasn't in the book list, and just dealing with emails. You know the commitment wants you to get an answer out in three working days - it's like rubbish! I would sack people for that when I was working, you know! They got an answer the same day, so they knew I was on it.

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Building effective relationships with students and responding to their individual needs was thus considered by Blake to be a key part of being an effective teacher, something that was shared by Morgan. Morgan had completed both an undergraduate and master's degree, then like Blake, had some professional experience outside academia before returning to do their PhD- for Morgan, this was at the same institution. They both spoke at length about some of the challenges their students face, and how that might impact on their attendance or engagement. In order to create and sustain effective relationships with their students, they both showed that they considered their students' position and context when designing and delivering teaching. For example, Morgan considered some of the challenges of the Covid-19 pandemic restrictions and the bearing this had on students' approaches to learning and also showed awareness of the day-to-day tasks and expectations on students, taking time to find out what their students were doing in other modules and adjusting their teaching accordingly:

> Maybe I'll pick some reading that isn't quite as long or isn't as difficult to read and make it very clear on the week that we were teaching it that I'd sort of pitched the material to be a little bit more receptive to their own circumstances, because obviously if they've got a big assignment, a big group presentation for half an hour, the last thing they wanna be doing is spending a lot of time [reading].

These GTAs, then, were able to recall and draw from their experiences of being taught to empathise with their students and use that as a key source of information for their developing understanding of what an effective teacher is. It was also an advantage for developing their knowledge of what methods and approaches would be useful for students' learning.

4.8.2 Being a current student provides proximity and flexibility

I get the feeling the students are not stressed or scared of talking with me, so I think that's a strength I have. [Alex]

Both Alex and Charlie talked about how because they had a dual identity as teacher and student, their students were able to approach them and interact with

them as a near-peer. Students could discuss questions and challenges in a non-hierarchical way which gave them some advantages over their colleagues:

> We're not convenors, we're not students, but we should be a sort of bridge to them to arrive there, so it's important that they see us as not convening their lectures but more like a mixed figure that's closer to them. [Charlie]

Charlie reported feedback from a student that they had managed to explain a concept 'in a way that the lecturer …. was not able to' because they had made it 'simple but comprehensible'. Charlie also describes aspects of effective teaching which foreground the experience of their students, as they know how being a student feels in a way that the 'professor or lecturer' who's been 'doing that for 20 years and from his or her perspective, it's normal' couldn't. For Riley though, their status as both student and teacher was a 'double-edged sword':

> I think because I'm only 25… I was concerned that them knowing I was a student would undermine my authority… because some of them hear the word 'student' and then kind of switch off … I'm more happy to discuss it now that I've built some sort of rapport with them and that we have a bit of an understanding and a bit of a relationship … and my credibility would be at less risk of being undermined.

However, their status also gave them 'a little more flexibility' and the 'ability to experiment' and meant there was less pressure to be perfect in their practice, suggesting that doing so was part of role-modelling to students that it is OK to be a novice.

Finn also recalled how being a GTA enabled them to have more of a relaxed interaction with their students. Finn had started their studies in Italy and completed them in the UK. Whilst having done some secondary school teaching before, they were finding HE-level teaching to be an enjoyable way of discussing the subject they were passionate about with their students and through that gaining new insights into the subject. Their role as a GTA enabled them to feel they could be more informal in their teaching and take different approaches to other academics. They felt that effective teaching was more than 'pouring information'

and they therefore used interactions with students through discussion and debate to support students' interest in the subject.

In running interactive SGT sessions, these participants were therefore using their role and status as a GTA to create informal, non-hierarchical learning environments, through which they could start to build effective teaching and learning relationships with their students.

4.9 Student response and enjoyment as a marker of the effectiveness of their teaching

People were really engaged, really enjoyed doing it, all had different examples and that made me think, 'yeah, I know what I'm doing. People have found this really helpful!' [Taylor]

When approaching SGT, some of the participants felt that they needed to design and facilitate sessions that had a high degree of student input and interaction in order to 'successfully' conduct the teaching and be effective small group teachers. These interactions were mainly characterised as contributions to in-class discussions, but it could also be interaction with learning resources or independent learning tasks, for example Sammy judged how much students had engaged with the preceding lecture and set reading, by the nature of the questions and discussion in their follow-up discussion session. In-session interactions through verbal and non-verbal responses could occur within the first few minutes of their first teaching session so was therefore a preliminary and very tangible indicator of the effectiveness of their teaching. Alex for instance felt that interaction from their students was 'actually the first time I really know that my teaching is effective'. Where interactions were successful, this gave an instant boost to their confidence.

GTAs including Finn, Robin and Blake were keen to provide teaching that students enjoyed and appreciated, as they felt that this would contribute to learning, and in turn, show that they had been effective in their teaching, for example Robin felt that:

Most of my classes I've been teaching these days, after the classes the students don't want to leave, they're like, oh, they've enjoyed this ... can they continue? I'm like 'no way! If it's one hour we have to end at one hour or continue again', you know. So those are all positive feedbacks from teaching. (Robin)

GTAs' own enjoyment of their teaching was often expressed in relation to a high level of interaction with students:

Last year I got the chance to lead a seminar ... and it was brilliant. It was great. Everyone talked, people had like real life anecdotes and everything, and it was just really rewarding. (Finn)

I've loved working with these students. To die for this course! (Elliot)

It made it quite nice that people had a lot of input, a lot of thought and were really passionate about it and really interested in it and it was just a pleasure. I came out and I was like 'ah that was amazing!' just because you felt like at the end people were like 'that was really helpful'. Sometimes I've taught stuff and I've thought 'Oh God, people aren't really interested in this, but they need to know it; they've really gotta do it, but they really don't care'. And I probably didn't when I did my training either. But that was something that was 'Oh my God, this is really helpful!' People really liked it. People really understood it and it felt like you could see it's gonna be beneficial for people's practice. (Taylor)

Students' interactions in sessions and enjoyment of it were clearly then a marker of these GTAs' perceptions of the effectiveness of their teaching.

4.10 Student interactions as high stakes

The thing that's always worried me the most typically, has been the time and knowing how much and what to include in content ... for the workshops, seminars. Because you think 'Oh if I come up with these questions, if they fall flat, how do I fill the two hours?' [Morgan]

As interactions with students in the SGT setting were such a key part of GTAs' conceptions of effective teaching, there was inevitably some anxiety and uncertainty about how to approach this and how to get students to interact in the ways they wanted them to. In conceptualising that effective SGT needed to be based on interaction and discussion, GTAs knew that they wanted to create positive learning environments where students would feel comfortable to input. Having the ability to deliver this key feature of SGT was however a worry for Taylor, Charlie, Morgan and Riley, not necessarily because of a lack of planning, preparation or effective learning design, but more because 'it's the group dynamics and stuff that you can't control, isn't it?' (Taylor).

As discussed in 4.2.1 above, Charlie was initially unfamiliar with SGT in the UK HE setting but quickly came to characterise this form of teaching by the interplay between teacher and students. They were delivering problem-based sessions to Economics undergraduates, and described how:

> The most horrifying thing for me would be like if it is an entire class just not interacting at all, not having interest in answering like, you know, talking to a wall - that's bad … I think that the worse situation would be like total indifference.

For Morgan, generating an interactive environment felt like a difficult task. They ran discussion-based seminars in History and wondered:

> How do you start off the conversation if someone hasn't contributed something, that was another concern of mine. How do you stop a conversation going flat, and how do you sort of be able to think on your feet?

The nature of SGT's reliance on student interaction and discussion as both a teaching method and a marker of effectiveness therefore added a layer of complexity to preparing teaching as it could be hard for GTAs to judge how much students would contribute and react. This feeling of uncertainty about how to build effective relationships and interactive learning environments was shared by Riley, who in their first interview, had identified this as a development area, but by the

second interview had some success in creating these environments. Although they still didn't find it easy, they had received positive feedback on their approaches:

> [A student] sent me an email at the end of the module to say that they'd felt that I'd created an incredibly open and safe environment in which they felt that they could contribute, and normally their anxiety prevented them from engaging in class discussions or from getting involved or from asking questions, which was really, really good feedback - I'd say that's the best feedback that I've received.

Dealing with the unknowns of student interaction meant that GTAs needed to be flexible in their approach, being able to adapt the content to meet the needs of the students in the room. Elliot, who didn't know 'what sort of level of engagement I should expect' had developed some of their own strategies to try to promote conversation between students which had meant that 'for the first time there was actually a lot more conversation between them rather than everything coming back to me'. However, they felt that the students still weren't doing enough reading and they didn't know 'how to encourage them to do that'. These GTAs therefore felt a lot of pressure around something which was to a large extent, out of their control, as it relied on working with students whose input was often unpredictable and inconsistent.

4.11 Summary of chapter

In this chapter I have presented the findings addressing my three research questions incorporating the voices of participants through direct quotes from their interview transcripts. Through this, I have shown that the primary non-formal and informal sources participants draw from when learning how to teach in HE are their own experiences as a student, their observations of and conversations with their colleagues and peers, and their knowledge of their subject. The interactions they have with their students in their initial teaching experiences have a key role in developing their confidence, competence and pedagogies which all contribute to a sense of teaching self-efficacy. Finally, their conceptions of teaching effectiveness are largely formed when they are a student and then built on and shaped when

they start to teach through their proximity to their students and the responsiveness of their students in class. In my next chapter I will discuss these findings in relation to the literature.

Chapter 5: Discussion

5.1 Introduction to the chapter

In the previous chapter I presented evidence from my data on the non-formal and informal sources which were influential for GTAs' development as they learn to teach, and how interactions with students influenced both GTAs self-efficacy development and their conceptions of teaching effectiveness in initial SGT experiences. In this chapter I will discuss and review my findings in relation to existing literature and highlight the contributions I have made to the literature. Through my study I identified several topics which would be useful to explore further, but as the key intention of this study is to contribute new knowledge linked to the gaps I identified in the literature, I have selected only the most prominent topics of interest related to my research questions to discuss.

5.2 RQ1 How do GTAs use non-formal and informal sources when learning how to teach?

I found that in their non-formal and informal learning (Eraut, 2000) of how to be effective teachers there were three key sources which GTAs drew from- their own experiences as students, their colleagues and peers, and their own knowledge of the subject. Bandura (1997) defined such sources as 'vicarious experiences' (see section 1.2.6) where through modelling approaches they have observed, individuals can compare their successes and failures which can contribute to their sense of self-efficacy. These highly valuable vicarious experiences were specific to each GTA's context and dependent upon variables including their personalities, motivations, agency and abilities (Poulou, 2007). I found that GTAs had to be self-reliant and pro-active in accessing these sources, which were characterised by being inconsistent and unreliable. I will present and unpick these themes below.

5.2.1 Drawing from their own experiences as students and observers of teaching for comparison and reassurance

My first original contribution to knowledge is that in becoming HE teachers, GTAs need to be self-reliant. GTAs' own previous experiences as a student were their main informal source of information in approaching, and during, their initial teaching experiences, and they used these experiences to inform both how to teach and how they knew they were effective. For GTAs who had not received any formal training for teaching, this source was the most significant and most frequently cited. For those who had received formal training, they situated and compared their own experiences as a student with that training to establish and shape their approach. Whilst drawing from this source may have been automatic and implicit for many, it did require GTAs to be independent and use initiative.

An experience that all the GTAs shared before they started to teach was that they were themselves students and had studied at HE-level previously. This 'implicit learning' (Eraut, 2000) when they were undergraduate and Masters students, or the 'apprenticeship of observation' (Lortie, 2002) would become a vital source of information on effective teaching methods and approaches as they started to teach as GTAs. Eraut (2000) suggests that our lived experiences enter our long-term memory unconsciously as single episodes but then accumulate to form a 'tacit knowledge base which enables future action'. My study shows that the accumulation of GTAs' multiple episodes of having been a student formed a knowledge base which they would actively draw from when they were learning to teach and that they used these past experiences as a source of comparison and reassurance for knowing if their teaching was effective during their initial teaching experiences. This was particularly the case where GTAs had been a student on the module they were now teaching, as they gained confidence from knowing what to expect, and what would support their students' learning. I found that this self-generated confidence alleviated the sense of uncertainty that can come with being a new teacher (Fong et al., 2019; Saetnan, 2022) and which many of the participants had expressed.

As with participants in previous studies (Dudley, 2009; Hemmings et al., 2012; Oleson & Hora, 2014; Smith & Delgado, 2021), through drawing on their past or recent memories of being a student, GTAs were able to determine the best teaching style for their own context, considering and situating their approaches and methods against that which they had themselves experienced, and making decisions on those they would emulate and those they would reject. However, my findings add to this literature by showing that for some, their status as a GTA gave them licence to try different ideas and approaches, for example Riley who sought to avoid the type of teaching they had found ineffectual as a student and felt they had the 'ability to experiment' with alternative ways which they felt they wouldn't be able to do if they were a full-time academic member of staff. Rather than using their experiences to 'persist conservatism' in teaching (Hargreaves, 2010), GTAs were using them as a benchmark from which to innovate or change direction in their initial practice.

Previous studies, notably those by Park and Ramos (2002) and Muzaka (2009), noted the lack of autonomy that GTAs can have, particularly with regards to the curriculum. My findings show that even when participants had a lack of autonomy over the curriculum or of the pre-planning of their session, they would pro-actively find ways to be autonomous in their approaches or methods when interacting with students in the classroom, adding to the findings of previous studies (e.g. Winters & Matusovich, 2011). Being self-reliant can therefore be seen as a form of autonomy which GTAs were able to enact to support their learning. Where participants did have some autonomy, there were mixed feelings about it. For example, Morgan found it empowering but also admits that they were 'a little bit overwhelmed to start with', and Taylor expressed a mixture of panic and 'comfort' in knowing they had free reign.

5.2.2 Drawing from their colleagues and peers for emulation and shaping their approaches

In addition to, or instead of, drawing from their experiences as a student, some GTAs engaged in observation of peers or colleagues as a non-formal way to learn

about teaching, before they themselves taught. For some (e.g. Riley and Robin) observing others was a positive experience, giving them ideas to emulate or shaping the style or approaches they would take, but for others, observing the teaching of experienced colleagues exposed areas of uncertainty (Cameron), methods that they weren't brave enough to try (Blake) or added pressure (Alex) at an already challenging time (Dobbins et al., 2021). But the fact that they had this point of comparison enabled GTAs to learn more about what effective teaching is, giving them a useful benchmark. Without these opportunities, some of the hidden aspects of teaching and thereby a key source of self-efficacy through vicarious experience (Burton et al., 2005; Klassen & Tze, 2014; Mills, 2011) which they could draw from before gaining valuable performance experience, was absent. These opportunities were however not universally available to participants, and where they were, they had to be pro-actively sought. Being self-reliant was then, not enough- they also had to identify and engage with their own non-formal opportunities to learn, which leads to my second original contribution to the literature, that GTAs must be pro-active and show initiative when seeking non-formal sources to support their initial teaching, highlighting the importance of agency and autonomy for GTAs.

Whilst there was some reassurance for participants (e.g. Taylor and Jamie) in knowing that support from colleagues was there if it was needed, participants expressed feeling 'totally on my own' (Blake), indicating that the onus was on participants to both identify when they needed support and to seek it. When such support wasn't available, or if GTAs didn't actively seek it out, the potential benefits of 'double seeing' (Tenenberg, 2016), that is, having a more experienced pair of eyes to scrutinise practice and reveal areas unknown to them, which can be particularly valuable for those in the vulnerable early stages of developing self-efficacy (Bandura, 1997, p. 86), were missed.

Whilst self-reliance and autonomy are not in themselves negative attributes to develop as an academic (Matos et al., 2021), initial teaching can be stressful and overwhelming (Melton & Bodur, 2011), so having to be self-reliant and pro-active in multiple areas (including but not limited to finding opportunities to teach,

accessing formal training and identifying mentors and observers) to shape their new role as a teacher added to the complexities of starting to teach (Tschannen-Moran et al., 1998). This created inconsistencies between the support and guidance that individual GTAs received at this 'sensitive period' of their development (Morris & Usher, 2011).

5.2.3 Drawing from their knowledge of the subject to give them credibility and confidence

GTAs' knowledge of their subject was a highly significant source which almost all the participants cited, and which was contingent on GTAs' self-reliance and their pro-activeness. Knowledge of the subject you are teaching is a key part of teaching preparations (Pickering, 2006) and as with experience of being a student, was something that all the participants possessed prior to starting to teach, to a greater or lesser extent. Although GTAs are often perceived- or perceive themselves- to lack sufficient knowledge to teach effectively (Kendall & Schussler, 2012; Muzaka, 2009; Park, 2002; Smith & Delgado, 2021), most of the participants had either professional knowledge of their discipline to draw from or had some level of subject knowledge they could build on. There was a feeling that a lack of subject knowledge would expose the GTAs as frauds, particularly in the small group setting where interaction and questions are the modus operandi and where students 'find you out very quickly' if you 'don't know your stuff' (Blake), so where participants felt they were lacking knowledge they pro-actively took steps to increase their understanding through additional reading or self-directed learning (Alex, Pat, Rowan) to the point where they felt comfortable to teach. In line with previous studies, participants in my study also tied their subject knowledge to feelings of confidence (Hemmings, 2015; Sadler, 2013), self-efficacy (Morris et al., 2017) and credibility as a teacher (Slack & Pownall, 2023).

However, participants including Blake, Alex and Pat felt that knowledge on its own wasn't sufficient to be an effective teacher. They felt that they had to develop skills – performance accomplishments - in areas such as managing discussions, critiquing topics and interacting effectively, which are all competencies which

have been identified as part of effective SGT generally (Su & Wood, 2012; Wise, 2011) and for GTAs specifically (Campbell et al., 2021). These competencies can be difficult to master on little experience and there is evidence that GTAs who have limited subject knowledge can find this even harder (Di Benedetti et al., 2023; Nasser-Abu Alhija & Fresko, 2018; Sadler, 2013).

However my findings have additionally identified that for some GTAs, a strength of their position is that the expectations of them by students can be lower (than of other academics, and of their own expectations of themselves) and that students appreciate the style of GTAs teaching and their proximity when compared to experienced academics, building on the findings of e.g. Kendall and Schussler (2012), and Pickering (2006) but which has not previously been evidenced through GTAs initial teaching experiences. As Charlie put it, 'we're not conveners, we're not students, but we should be a sort of bridge', with Riley being at peace with the fact that 'I'm just a [person] who's recently started doing it and I ... let that be fine'. A baseline of knowledge was therefore essential in feeling confident in approaching teaching, but it was the application of that knowledge through teaching experience which would enable participants to know if they had been effective, something I will explore further in 5.3.1 later.

5.2.4 Non-formal and informal sources as inconsistent and unreliable

Bandura's social learning theory proposes that learners learn by observing, imitation and modelling (Bandura, 1977). My research has shown that whilst these sources are invaluable for GTAs as they learn to teach, they are inconsistent and unreliable, highlighting the significance of uncertain influences on their development and adding to the literature in this area. For example, the idea of unreliability has parallels to the work of Smith and Delgado (2021) who in their study of GTAs with high and low self-efficacy, found that when experience – or performance accomplishments – are lacking for GTAs, they have lower self-efficacy and will depend on 'less-reliable influences', for example being 'susceptible' to relying on students to provide information on the effectiveness of practice. The evidence in my data adds to this, including that on feedback from students.

The non-formal and informal sources I discussed can all be characterised as inconsistent and unreliable, for example, some of the GTAs had multiple opportunities to observe effective teachers using pedagogies that support students' learning and which provided inspiration and sound methods for the GTA to emulate, yet other GTAs weren't able to access observations, or may have observed ineffective teaching which did little to support their learning of effective methods, beyond knowing what to avoid. Support from colleagues, including through conversations about teaching, is invaluable at early and mid-career stages in developing pedagogies, effectiveness and as a source of reassurance (Saetnan, 2022; Thomson & Trigwell, 2018) and for GTAs, integration into the department can be a useful source of orientation to the role and their transition from student to teacher (Ball et al., 2020; DeChenne et al., 2015; Schussler et al., 2015). Such support was however variable and dependent on the availability, capabilities and willingness of colleagues in the department (Barr & Wright, 2018; Di Benedetti et al., 2023) with one participant, Taylor, expressing that 'more support would be helpful for sure', in line with GTAs in previous studies who have felt starting to teach is like being thrown in at the deep end (Morris & Usher, 2011; Saetnan, 2022; Tschannen-Moran et al., 1998). Being what Elliot referred to as the 'apprentice', together with their reliance on unreliable sources of support, left some of the GTAs feeling uncertain and unsure about their role as a teacher and what was expected of them. Knowledge of the subject was an equally inconsistent and unreliable source, especially where GTAs such as Riley were teaching topics they weren't familiar with.

Such uncertainty is reflected in other recent studies of GTAs – for example, the participants in the study by Saetnan (2022) reported feeling that they had 'little support or preparation for their teaching role at the start' and Di Benedetti et al. (2023) found that a lack of support could lead to low confidence. Whilst being uncertain and not fully-formed as a teacher after initial experiences is to be expected and is part of the 'unfinishedness' which makes us educable (Cook-Sather & Alter, 2011; Freire, 1998), GTAs expressed that more support and information would have reduced some of their anxieties around starting to teach.

My findings add to this literature by showing that when drawing from non-formal and informal sources, GTAs need self-reliance and autonomy (as adults and in order to develop), but they also need a structure and guidance (as novice teachers) to alleviate their uncertainty.

The theme of inconsistency and unreliability extends to GTAs' interactions with students. My data shows that in the absence of more structured sources of information from students on their teaching (e.g. MEQs), GTAs were reliant on interactions with and informal feedback from students which were largely self-generated. In the case of Charlie, they gathered 'random small feedbacks' at the end of sessions and drew from that as a key source of both support for their teaching development and evidence of their effectiveness. Blake cites a similar position of 'chatting to some of them afterwards' as a means of knowing how the teaching was being received as they didn't want to wait until the formal evaluations of teaching which came out too late, and Alex relied on informal feedback because formal mechanisms 'which could boost my confidence, didn't happen'. Jordan didn't receive either formal or informal feedback so had to rely on their own perceptions of students' responsiveness and Morgan, Cameron, and Riley all expressed frustration and disappointment at a lack of access to feedback.

Sadler (2012) identifies that this 'incidental feedback' through everyday interactions with students can reveal new information to teachers on previously hidden areas of their practice, and that it is immediate and specific and can be reflected on and used to enhance future interactions, but this valuable source of information for GTAs, was often just a fleeting reaction or response from the students. As Elliot identifies, 'they're all really sweet to me and say nice things, but I want something a little bit more rigorous'. Interactions and feedback from students, whilst inconsistent and unreliable were clearly vital for GTAs' development, and it is this theme which I turn to next for research question two.

5.3 RQ2 What role do initial interactions with students play in supporting the development of GTAs' teaching self-efficacy?

I have shown that during the period prior to their teaching, GTAs had to be self-reliant and pro-active in finding (inconsistent) sources of vicarious experience to support their learning of how to be an effective teacher. In regard to RQ2, I found that when GTAs then started to teach, they reported that their sense of self-efficacy developed the most through performance accomplishments of the task and social persuasion from students. Performance accomplishments are defined as authentic experience of the task through which individuals can evaluate their ability, and social persuasion is achieved through feedback on their accomplishments from significant others (Bandura, 1997), in this case their students. GTAs' performance accomplishments contributed both to their learning of how to be a teacher and gave them an instant indication of whether they had been effective in their endeavours. Social persuasion from their students in their sessions was also key, an area which has been under-explored in the previous literature. However, my findings add to this literature by showing that it is interactions with students during initial classroom experiences which are the unintentional sparks that ignite GTAs' confidence and pedagogies.

5.3.1 Classroom interactions and performance accomplishment

Whilst participants cited sources including subject knowledge, practitioner knowledge and having been a student in the module previously as key to their confidence in *approaching* teaching, direct classroom experience with students was the key to developing this confidence in practice. GTAs approached their first sessions with varying and inconsistent levels of vicarious experience and subject knowledge, but for all of them their development and learning about how to be an effective HE teacher was accelerated by practice experience in the classroom, or 'learning about teaching by teaching' (Chang et al., 2011) which Deacon et al. (2017) consider to be 'the best way' to develop teaching efficacy. Experience of teaching can impact on confidence either positively (Hemmings, 2015; Melton & Bodur, 2011) or, when there is a lack of experience, negatively (Smith & Delgado,

2021) with novice teachers often feeling inadequate, disadvantaged, underqualified and that they need to project the image of an experienced teacher (Campbell et al., 2021; Di Benedetti et al., 2023; Muzaka, 2009; Wubbels & Brekelmans, 2005).

Notably, repeat-teaching the same group had a significant positive impact on the sense of performance accomplishment of the six GTAs who had the opportunity to do so, summarised by Robin as 'the more experience you get, the better you get at teaching'. Longevity of experience in teaching is considered 'essential' for lecturers' development (Matos et al., 2021; Sadler, 2013) and can have a positive impact on students ratings of GTAs (Nasser-Abu Alhija & Fresko, 2018), but whereas new academics would typically have plentiful opportunities to teach, GTAs' opportunities can be sporadic, inconsistent and subject to limitations by either their supervisor, institution, funder or the fact that their primary role is to complete their research (Hardré & Burris, 2012; Jordan & Howe, 2017; Winstone & Moore, 2017). However I found that whilst it was difficult for some of the GTAs to get sufficient opportunities to teach, it was worthwhile as this experience was highly beneficial in their learning to be a teacher.

Even those GTAs who had access to formal training found that it was the opportunities to practice teaching during that training which were the most impactful and useful for their confidence, for example the case of Charlie who felt that the training got them to 'a certain point, then most of my development belongs to, has credit to, experience with students'. My findings are therefore similar to Flodén (2017) and Postareff et al. (2008) who found that whilst initial pedagogical training was impactful, it was an increase in teaching experience rather than further training which had a positive effect on self-efficacy. However, for GTAs, it wasn't just the chance to be in the classroom and practice delivery that was significant for this development, as much as it was their interactions with students.

Such teaching was difficult though, with Blake reporting finding it 'exhausting'- 'I was on my knees with fatigue'- and Elliot feeling that it was a 'harder job' than lecturing, which is similar to participants in Tobiason (2023) who found student-

centred teaching 'demanding intellectual work' and Di Benedetti et al. (2023) who suggest that such teaching requires 'confidence, flexibility, and resilience'. Having a mix of engaged, motivated and involved students with disengaged and apathetic ones in the same session is a 'chronic problem in education' with 'no single right answers' (Linnenbrink & Pintrich, 2010). SGT requires constant student engagement through responding to and asking challenging questions, and some participants (e.g. Elliot, Riley and Blake) expressed frustration when their expectations of interaction in sessions weren't met, similar to the GTAs in the study by Ball et al. (2020), but this was largely because they enjoyed the teaching and wanted their students to do well, consistent with Hagenauer and Volet (2014a). On balance though, they felt that the benefits of interactions counteracted these challenges.

5.3.2 Learning about pedagogy through interacting with students

In addition to the development of confidence and competence, practice experience also enabled GTAs to learn about pedagogies and how to support and enhance their students' learning. They were therefore concerned with both the tasks of *doing* teaching and the attributes of *being* a teacher, aligning with previous research which shows that teaching experience can impact GTAs' sense of self as a teacher (Bale & Anderson, 2022) as they adopt their new teacher identity. Those participants who spoke about this topic showed that they weren't fixed in their thinking but rather were open and willing to make changes to their approaches. Such changes were based on social persuasion - the response they got from their students - emphasising that it was the elements of teaching experience where GTAs intersected with students which had the biggest impact on their self-efficacy development.

5.3.3 The unconscious role of students in GTAs development

Teaching sessions are designed to support students' learning of the subject, not GTAs' learning of effective teaching, so whilst interactions with students had a powerful effect on self-efficacy through developing confidence and pedagogies, this impact was an incidental outcome from the teaching session and therefore a

form of informal learning. Whilst the research on the importance of positive student-teacher relationships for teacher development is still scarce (Hagenauer et al., 2023; Korthagen et al., 2014), my findings add to that of e.g. Sadler (2012) in showing the impact of student interactions on teacher development, but whereas Sadler's longitudinal study showed this development over the first two years of an academic's practice, my findings indicate that for GTAs, this development occurs from their initial experiences with students.

Additionally, unlike previous studies including Scoles et al. (2021), Marquis et al. (2019) and Korthagen et al. (2014) where collegiate development was planned and explained to both students and teachers (i.e. deliberative), in my study the impact of interactions with students on GTAs' teaching development was shown to be unintentional, as students are unconscious of the vital impact their presence, interactions, responses, feedback and performance have on a GTAs' nascent sense of self-efficacy. It therefore typifies the 'unorganised, unsystematic and … unintentional' (Coombs & Ahmed, 1974, quoted in Tight, 2002, p. 71) nature of informal learning.

These unintentional sparks ignite GTAs' teaching development from the first interactions in their first teaching sessions and continue to drive and inform the development of GTAs' teaching self-efficacy, competency and pedagogies as their practice increases. My findings therefore add to the literature by showing that students have a crucial role in both supporting GTAs in learning to teach and in them knowing if they have been effective, yet this is something which is unintentional and of which students are unaware when participating in the class.

5.4 RQ3 How do interactions with students contribute to GTAs' conceptions of teaching effectiveness?

Before exploring how interactions contributed to GTAs' conceptions of effectiveness, it is worth establishing what the GTAs themselves considered to be 'effective' teaching. In table 5.1 I have categorised their responses to the question 'what is effective teaching' into aspects which are relational and those which are focused on the teacher's qualities or knowledge:

Relational	Teacher-focused
Engagement	Preparation
Inspiring people	Delivery
Encouraging critical thinking	Subject knowledge / content
Students' performance	Passion
Awareness (of the context; the students; needs)	Creativity
Flexibility	Professional expertise
Collaboration	Patience
Approachability	
Explaining things	
Understanding	
Openness	
Students' attendance	
Inclusion	

Table 5.1 Summary of responses to the question 'what makes a teacher effective?'

Their responses show more relational aspects than teacher-focused aspects, a theme I will return to in 5.4.2 below and which in itself adds to the 'scarce' literature on GTAs' conceptions of teaching (Soomere & Karm, 2021). Before that, I will show the role interactions had in GTAs' conceptions of effectiveness, before finally discussing the reciprocal cycle of self-efficacy in relation to GTAs' interactions with their students.

I have so far shown that experience of teaching, and especially repeat experience, was key to GTAs' development and learning, and I will now discuss how it was the social persuasion of students during interactions which impacted and built on the conceptions of SGT effectiveness which GTAs had started to form through the non-formal and informal sources discussed in 5.2. This study focused on the interactions between students and GTAs to explore potential benefits for teachers, rather than students, for which there is already an existing body of research. I found that the sometimes-brief interactions and contact that GTAs had with their

students were nevertheless rich sources of information for them to both hone their teaching skills and know if they had been effective, something which the previous literature has not explicitly shown.

5.4.1 The role of interactions with students in GTAs knowing if they've been effective

Teaching is relational, depending on encounters between individuals which are 'not easy to measure, judge or capture' (Bovill, 2020a). Participants found such encounters difficult to predict and control, as in the cases of Charlie, Morgan and Riley who all found the thought of having to establish and maintain interaction challenging. Aligned with the findings of Kim (2009), some of the international GTAs found this a particular challenge to adjust to as sessions based on interaction were a different approach to teaching to that which they had been used to. Whilst my study only looked at one side of the coin – the teacher's perspective – and through their own words, rather than through observations of practice, nevertheless GTAs' perceptions of these interactions during their initial teaching experiences provided insight into both their development and their sense of whether they had been effective, something which has not been explored in this way before.

Bandura (1997, p. 39) asserts that to develop skills, there needs to be an intersection of an individual's behaviour, personal attributes and environmental circumstances. Within the environment of the SGT session, interaction with students' and their enjoyment of the session were seen as indicators of successful and effective teaching, interpreted by the GTAs as indicative that the approaches they had adopted had supported learning to take place and thereby helping them develop their teaching skills and effectiveness. They described indicators of initial success as being students asking and answering questions, discussing topics, talking and responding to the topic. These forms of verbal responsiveness are in contrast to Mottet et al. (2004), who found forms of nonverbal responsiveness to have a greater effect on self-efficacy, but align with Morris and Usher (2011) who found indexes of initial success to include the flow of the classroom and praise from students. My findings add to this by showing that such interactions were

regarded as indicators of student engagement and thereby the effectiveness of teaching, which could occur from within the first few minutes of a session, in contrast to sources of learning to teach (such as the 'apprenticeship of observation' or the development of subject or practitioner knowledge) which develop over numerous years.

Students' attendance in classes and their performance at assessment were seen by some participants as an indicator of teaching effectiveness, chiming with the research of Nasser-Abu Alhija and Fresko (2018) who found that student attendance was correlated with their positive ratings of GTA's teaching. But for Blake and Elliot, whilst good performance and high attendance were seen as indicative of effective teaching, poor performance or attendance were regarded as saying more about the students ('it's not you, it's them' (Blake)) and there was uncertainty around the extent to which performance at assessment could be attributed to the input from the teacher, particularly when that input was infrequent. Students' performance was therefore a less significant source of effectiveness than interactions were.

5.4.2 Student-centred teaching

Previous longitudinal studies on academic staff development have found a duration of between two to five years to shift the focus from teacher-centred (e.g. imparting content knowledge) to student-centred (e.g. changing students' conceptions, focus on the learners' needs, active participation) (Kugel, 1993; Sadler, 2013; Simmons, 2011) and for GTAs a gradual shift has been found to occur during the first year of teaching when supported with a teaching development programme (Di Benedetti et al., 2023; Wyse et al., 2014). Self-efficacy is contextual (Bandura, 1997, p. 39) so beliefs can be different depending on factors including the location, the content, and the types and numbers of students, with teachers in unfamiliar settings or with low content knowledge being found to have low confidence, which can lead to more teacher-centred approaches (Sadler, 2013). However, my data indicates that in their initial teaching experiences in the SGT context, participants took an approach which was focused on their students' interests and needs, actively using their students' input to make changes to their

own teaching methods and content which would benefit their students. Working in the context of SGT enabled GTAs to interact closely with and gain feedback from their students and there was evidence that drawing on their memories of being a student helped them to understand their students' interests and needs. Together these sources were used to hone their teaching methods and approaches.

My findings add to this literature by showing that for GTAs, whilst the period prior to teaching is inward focused (including their own knowledge, preparation and anxieties), in their initial teaching they tended to adopt student-centred approaches as a means to support both their students' learning and their own learning and development as a teacher.

In previous studies, reasons suggested for GTAs taking a student-centred approach include that they have yet to identify or cement a preference of teaching approach (Shum et al., 2020), or that those with high self-efficacy or more confidence in their teaching ability are more open to student-centred practices (Smith & Delgado, 2021; Smith et al., 2023). In the case of my findings, in drawing from non-formal and informal sources (notably their own experiences as a past and current student), participants were more likely to take a student-centred approach, showing a high degree of concern for their students as individual and diverse learners. They put themselves in their learners' shoes, adopting approaches that had supported their own learning. For example, Blake spoke about wanting to give students 'added value' and Morgan sought to make 'a difference' to students' learning, largely because of their empathy with their students drawn from their own memories.

They also used a student-centred approach to support their teaching effectiveness, which they shaped through the informal learning of interactions with students and which they conceptualised largely through relational aspects (see table 5.1 above) with Morgan changing the content of subsequent sessions if students fed back that they hadn't learnt in the first iteration, and Blake reflecting on making changes to their methods, but being concerned that these would cause 'anxiety' and 'get in the way of their learning'. So, whilst student-centred approaches were used to benefit students, my study contributes findings which

show that these approaches had a dual purpose of giving GTAs information about their teaching which they could use to become more effective. Interactions thereby encompassed and enabled both student and teacher learning.

5.4.3 The reciprocal cycle

Throughout the interviews, participants discussed examples of when they had attempted to increase their effectiveness by reflecting on and changing teaching methods, approaches or practices. These enhancements were chiefly in response to student interactions or feedback. For example, Taylor talked about how they tailored their teaching to what their students were interested in, the students had a good experience, and this left Taylor feeling happy and confident, or the case of Charlie, who noticed an improvement in the quality of their teaching over the four days of repeat-teaching the same session to different groups when enacting their feedback which led to feelings of effectiveness, or Blake who reflected on what had been beneficial for their students' learning in their initial classes and then built on those when planning subsequent sessions and from this derived a sense of confidence in their abilities and effectiveness.

These examples demonstrate the 'reciprocal cycle' of self-efficacy, or triadic reciprocality (Bandura, 1997, p. 6; Schunk & DiBenedetto, 2020; Tschannen-Moran et al., 1998) whereby success in the activity leads to feelings of confidence, confidence leads to effectiveness in the activity and this in turn leads to positive outcomes, in this case for students through future teaching. The literature on this area for GTAs and their initial teaching is scant, with the cycle being implicit (DeChenne et al., 2015) or linked to formal training rather than informal interactions (Prieto & Meyers, 1999) or explored over an extended period (Chiu et al., 2019). The cases from my study add to this literature by showing that such a reciprocal cycle can emerge from GTAs' initial interactions with students. As represented in figure 5.1, the personal determinant of a GTAs confidence, impacts and is impacted by the environmental determinant of students' interactions and the behavioural determinant of their effectiveness in teaching.
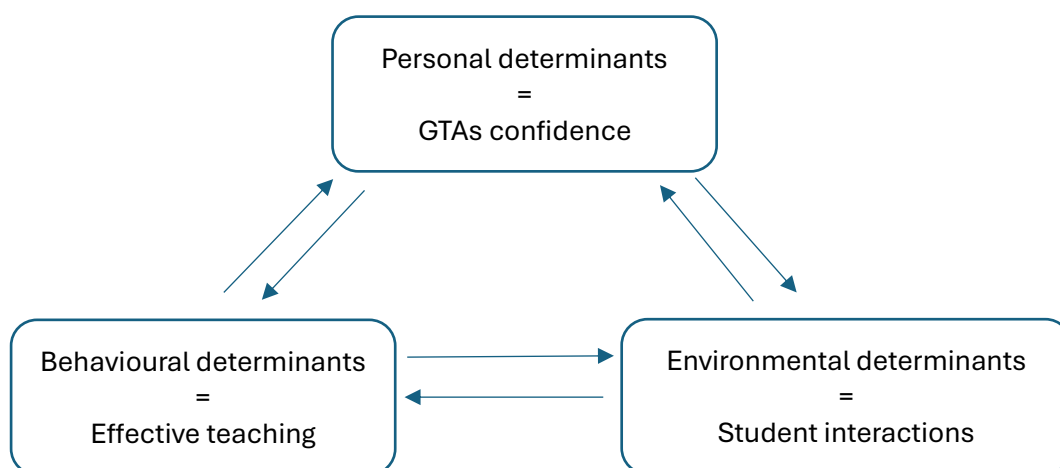
Figure 5.1: GTAs triadic reciprocality

Such interactions are therefore a place of possibility for the development of both GTAs' teaching self-efficacy and their students' learning.

5.5 Summary of chapter

My findings show that having access to regular, repeated initial teaching experiences - which are supported by colleagues and peers, and which provide opportunities for students to interact and provide feedback - enhance the development of teaching self-efficacy in GTAs and their conceptions of teaching effectiveness. In presenting that GTAs draw from multiple different sources of performance accomplishments, vicarious experience, social persuasion and showing that elements of these are inconsistent or unreliable, I have added to previous work exploring the role and interplay of multiple sources of learning for those new to HE teaching (e.g. Burton et al., 2005; Mills & Allen, 2007; Morris & Usher, 2011; Smith & Delgado, 2021) and contributed to the general field of research on GTAs' teaching self-efficacy. I have also added to the literature on the non-formal and informal sources of learning for GTAs, specifically the role of student interactions in GTAs teaching development, the student-centred nature of such teaching and the reciprocal cycle that can emerge. Whilst such interactions in the SGT setting can be challenging, they can support the learning and development of both the GTA and their students.

Chapter 6: Conclusion

6.1 Introduction to the chapter

In this final chapter I will revisit my original motivations, intentions and research questions and draw together the findings and what they contribute. Through conducting this research and through the use of reflexive thematic analysis, I developed my own sense of self-efficacy as a researcher, so in this chapter I will also reflect on and discuss how I have developed, and the implications of both this and my findings for potential future practice and research. Through this I will consider the successes and challenges I encountered along the way and reflect on any potential enhancements.

6.2 Summary of the research

Through using Eraut's (2000) conceptions of non-formal and informal learning to conceptualise GTAs initial experiences prior to and during their initial interactions with students through three of the elements of Bandura's (1997) self-efficacy (namely performance accomplishments, vicarious experience and social persuasion, defined in section 1.2.5) I was able to explore the features of that learning and how it occurred. In setting out to explore the non-formal and informal sources that impact on GTAs learning to teach and how these support the development of their sense of self-efficacy and teaching effectiveness, I hoped to generate insights into the experiences of GTAs so that I could amplify their voices to those who work with and alongside them, and to enhance both my understanding and the support I offered them in my professional role. My own interests in self-reflection and development also informed my design of the study with reflexive thematic analysis enabling me to create and interpret patterned meaning from the stories participants told me with my own subjectivity as a resource for knowledge production (Braun & Clarke, 2019).
My original intention was to focus solely on GTAs' sense of teaching self-efficacy and how that developed during their initial teaching experiences but after engaging in the interview process and thematically analysing the data generated, I couldn't ignore the fact that so many of the participants were impacted and shaped by their

interactions with their students. This key but under-explored and unconscious role of students in supporting GTAs' informal and non-formal learning necessitated a further review of the literature (presented in chapter two) and a re-framing of the research questions to those which I have spoken to throughout this thesis, namely:

1. How do GTAs use non-formal and informal sources when learning how to teach?
2. What role do initial interactions with students play in supporting the development of GTAs' teaching self-efficacy?
3. How do interactions with students contribute to GTAs' conceptions of teaching effectiveness?

6.3 Review of the findings

6.3.1 Formal, non-formal and informal learning

Through this research I was able to explore how GTAs learn how to *be* a teacher and how to *do* teaching beyond formal learning through training and development. By focussing on non-formal and informal sources, I wasn't seeking to diminish the value of formal training which has repeatedly been shown in the literature to have a strong, positive influence on GTAs' teaching development (e.g. Beaton, 2017; Chadha, 2013; Winter et al., 2015), but rather to examine an area of development which was hitherto under-explored, but which has an important complementary role to this formal learning. Whilst the data generated would inevitably be different in other settings for example those where formal training was either mandatory or wasn't offered at all, this particular dataset offered perspectives from participants who all had access to some formal training and support through their institutions (although not all had accessed it) and such formal opportunities were valued and were valuable for the participant group. Exploring the distinct role of these GTAs' non-formal and informal learning and how it contributed to the development of their sense of teaching self-efficacy shows that such sources can complement, enhance and sometimes compensate for formal development opportunities.

6.3.2 Original contributions to knowledge

Whilst there is a significant body of literature on GTAs' formal teaching development, informal and non-formal learning has been less widely researched. My research was able to contribute some new findings to this area, and to the research into the teaching self-efficacy of GTAs more broadly.

Previous studies on UK-based GTAs (e.g. Di Benedetti et al., 2023; Dobbins et al., 2021; Stocks, 2018) have looked at the informal and non-formal sources such as GTAs' experiences as students, their knowledge of their subject and their observations and discussions with others. My research looked at these sources together and showed that when preparing to teach, GTAs need to be self-reliant in drawing from these sources of non-formal and informal learning, but that this self-reliance had to be balanced with the structure and support they sought through their formal development opportunities. The impact of a lack of support at this early developmental stage has been highlighted previously (e.g. Saetnan, 20022; Di Benedetti et al, 2023), and my findings add to this by showing that even when the support is there, it can be inconsistent and unreliable, aligning with previous US-based research on unreliability (Smith & Delgado, 2021).   Each participants' experiences, knowledge and opportunities to learn from others varied and the sources themselves are not necessarily explicitly designed as teaching development opportunities for GTAs. However, they emerged as significant sources of learning for GTAs, often in place of formal sources. Such inconsistency and unreliability will also mean that the stories told from a different dataset may vary in impact and focus, but there was sufficient patterned meaning in my data to make the claim for these characteristics and to therefore add to the literature in this area.

In my second research question, I looked at the role that student interactions have in supporting GTAs' teaching self-efficacy development during a crucial developmental period, which has previously been under-explored in the literature on GTAs, particularly through qualitative methods. Studies on teaching self-efficacy development for school and university teachers have consistently found that early experiences are formative in learning how to be a teacher and in

developing a sense of teaching self-efficacy (Chiu et al., 2019; Fives & Looney, 2009; Ma et al., 2022; Morris & Usher, 2011; Young & Bippus, 2088) and that it is their performance accomplishments which are the strongest influence, however these studies have largely overlooked the impact of interactions with students. Focussing on GTAs' initial experiences in the classroom with students and the potential role students play in the development of self-efficacy, I found that it was the social persuasion from the moments where GTAs intersected with students which had the biggest impact on their self-efficacy development. Such interactions provided a source of reactive non-formal learning as the GTAs were aware that they were learning but the intention of the teaching was for their students to learn, not them. This builds on the findings of Gillespie (2005) which posited teacher and student interactions as a 'place of possibility' for student learning, by showing that they are also a key place of possibility for GTAs learning.

My second original contribution to knowledge is therefore that whilst the performance accomplishments of GTAs' initial teaching experiences were a key component of their developing self-efficacy, it was the social persuasion of the interactions GTAs had with their students and the structured and unstructured feedback they received which were the key contributors. The success or otherwise of these interactions and the nature of the feedback received had a powerful effect on their sense of confidence, competence and the development of their pedagogies. My findings have added to studies by e.g. Morris and Usher (2011) and Chiu et al. (2019) by showing that the initial teaching experiences of GTAs are key 'make or break' moments for their teaching development contributing to the development of both the *doing* of teaching and the *being* a teacher. However, access to meaningful and timely feedback from students could be problematic, meaning that such a critical developmental phase and source of reactive non-formal learning was often under-supported.

Finally, the data generated in relation to my third research question showed that in articulating what teaching effectiveness is, GTAs' conceptions were based largely on their previous experiences as a student (a source of informal learning) but were shaped and built on through the relational aspects of working with students as a

teacher. From the first few moments of entering the classroom, the quality and amount of verbal and non-verbal responsiveness from students were used as a form of reactive non-formal learning and seen by GTAs as a direct indication of the success or otherwise of their teaching. Whilst further experience of teaching could re-shape their feelings about their own practice, their conceptions of effectiveness tended to remain the same, with GTAs striving to create classroom environments built on interactions.

An outcome of this focus on their students was that GTAs' teaching tended to be student-centred, that is focussed on active participation, changing conceptions and the diverse needs and interests of their students. This benefitted students but also shaped GTAs' teaching effectiveness, providing my third contribution to the literature on GTAs teaching self-efficacy, namely new evidence of triadic reciprocality for GTAs, whereby GTAs' confidence is both impacted by and has an impact on student interactions and on their perceptions and practices of effective teaching.

In drawing the findings and research questions together I have shown that in preparing to teach, GTAs main source of learning was the informal and implicit non-formal source of being a student, either currently or in the past, and that they then developed their sense of teaching self-efficacy and conceptions of effectiveness through their initial teaching experiences - by interacting with students, observing and discussing with others, and getting feedback - which were sources of reactive and deliberative non-formal learning. Each source and form of learning thereby had a clear role and place in the learning and development of the GTAs and these sources could both complement and compensate for each other, depending on their availability for GTAs.

6.4 Concluding remarks

6.4.1 Development as a researcher

In addition to the generation of new knowledge to contribute to the field of GTA teaching development, there was personal and professional value for me in

conducting this research through learning about myself, my resilience, and my developing identity as a researcher (Bryan & Guccione, 2018). I sought to explore the experiences of my GTA participant group but in keeping a research journal and reflexively analysing the process, I also tracked my own experiences as a researcher. Whilst I aimed to capture all my experiences, inevitably there were more reflections on challenges than successes, as these prompted the most thinking, reading and action-setting for the future. Two of the first, and most significant of these learning experiences were in re-applying for ethical approval to broaden the dataset to GTAs from other HEIs, swiftly followed by reframing the research questions following the first round of interviews. Through this I had to let go of my expectations of where the research was going and instead trust that it was the data generated through my participants' sharing of their stories which would drive the narrative and direction of the research.

I reflected and learnt significantly during the conducting of the interviews, for example, my reflections concluded that if I were to conduct the research again, I'd schedule the first round interviews prior to the GTAs doing any of their teaching (in reality, many had already taught some classes). Whilst this didn't detract from their stories, I felt it would have made a clearer distinction between the 'before' and 'after'. The six stages of the data analysis process was also a key time of both frustration and celebration as I grappled with coding and theming to accurately represent the GTAs' meanings. However, the rigour of this process enabled me to have confidence in my findings and contributed significantly to my developing skills as a researcher.

The development of my sense of research self-efficacy mirrors the development of the GTAs' sense of teaching self-efficacy, with the chance to design and conduct interviews and thematically analyse the data (i.e. the performance accomplishments) contributing most strongly, but the vicarious experience of learning from and through the experiences of others, and the social persuasion of my supervisor and peers and comparing my work to others', both making a valuable contribution to my development.

6.4.2 Implications for professional practice

In conceptualising and designing this research my intention had been to explore and share GTAs' experiences of learning to teach, and this required me to both build on and re-frame my own professional knowledge and understanding of this cohort of teachers who I have worked with over many years. The findings of my research represent the stories my participant group told at the point of data collection however the patterned meaning suggests that their experiences are representative of other GTAs who are learning to teach in UK HE.

The non-formal and informal sources they drew from in learning how to teach and the role of student interactions in shaping both their own sense of teaching self-efficacy and their conceptions of teaching effectiveness were represented across the dataset and from my findings, I can suggest several recommendations for my own professional practice, to complement the formal development programmes I offer, and which may also be applicable for others who work with or support GTAs with their teaching, depending on what support they already have in place.

The findings from my first research question indicate that the non-formal and informal sources GTAs draw from are inconsistent and unreliable, meaning that some GTAs will have 'stronger' sources than others. Whilst this is not in itself something which can be 'solved'- the many and various previous experiences GTAs will draw from in learning about teaching can never be standardised- nevertheless, it will enable them to capitalise on being a 'mixed figure' [Charlie] and help to mitigate the potential negative consequences of the unreliability of this source. Opportunities could be provided prior to or during the initial teaching period for GTAs to reflect on their own experiences as a student and the pedagogical approaches that supported their learning, either generally or in their discipline, for example, supporting GTAs in the pre-teaching period, especially to help them plan and prepare for small group teaching. Similarly, opportunities for GTAs to observe the teaching of more experienced others could be provided and supported as a core part of teaching development programmes and/or by Module Leaders to enable GTAs to benefit from the reassurance and learning of this vicarious experience and to maximise this currently inconsistent but key form of learning.

Self-efficacy is the belief that you can achieve a specific task or action, but this doesn't necessarily mean that you can do it, so even if GTAs understand what effective SGT is, it is their practice experience with students and feedback from them which are crucial in developing these abilities. My findings indicated that where GTAs were able to teach regularly and repeat-teach sessions, this generated valuable performance accomplishment experiences which built up their confidence and competence. Whilst offering every GTA multiple session is not always feasible, its value in supporting and consolidating GTAs' learning can be emphasised as part of a structured 'induction' to teaching, alongside vicarious experiences and social persuasion from teaching conversations with peers and/or Module Leaders, and opportunities to practice teaching such as 'Microteach' sessions. These conversations should also enable GTAs to discuss, share and reflect on the interactions they have had with their students, to contextualise and normalise some of the challenges, successes and benefits of this crucial source of non-formal learning.

Even without multiple opportunities to teach or observe others, feedback from students would, on its own, be a significant source of information supporting reactive non-formal learning. My findings draw attention to the strong influence of students' interactions and feedback on GTAs' nascent teaching development, but that formal feedback is often absent, late or lacks direct meaning for GTAs. Collecting timely and meaningful feedback would give the GTA a further source of information which they can reflect and build on for their subsequent teaching, and whilst it might not be possible to secure repeat-teaching opportunities for all GTAs, it should be possible to facilitate the collection of feedback on the sessions the GTA has taught. To further support GTAs teaching development, mechanisms for collecting feedback from students on the individual teaching sessions which the GTA teaches should therefore be explored.

6.4.3 Implications for future research

Matos et al (2020) discuss the idea of 'collective self-efficacy' and that few published papers explore or examine this, particularly with regards to the disciplinary context. One limitation of the size and scale of my research was that I was unable to explore any patterns across or within the experiences of GTAs in different academic disciplines, which is a feature of much of the US-based

research on GTA's teaching self-efficacy and which contextual information can contribute to an explanation of the GTAs' experiences. However, my research highlighted the importance of GTAs' initial teaching experiences in developing their sense of teaching self-efficacy and this indicates that when designing developmental interventions for GTAs, rather than viewing them as a homogenous group with a single collective experience, there should be attention paid to the different stages of being a GTA and the formal, non-formal and informal learning which will best support them at each stage.

My research was also solely focused on those who wanted an academic career in the future, and I acknowledge that the results may have been different for those with other motivations, for example those who were only teaching temporarily or were teaching reluctantly, so again differentiated provision and further research into individual experiences across different collective groups (including but not limited to discipline, stage and motivation) is warranted. A future discernment between both the collective and the individual experiences of GTAs will add richness and meaning to the support offered to them.

In reflecting on my research, I am confident that the size of my dataset and the views expressed are representative of the broader community of GTAs, however I would have liked to have heard the stories and experiences of GTAs from a wider variety of UK HEIs. The dataset was predominantly drawn from two universities- the one in which I work supporting GTAs and the one in which I am studying as part of the PGR community, with only one voice from elsewhere. Whilst the call for participants was an open one, and the vast majority of my participants were previously unknown to me, there is likely to have been perceptions of me and my professional role which could have influenced participants' answers. I am hugely grateful for the generosity and loyalty of fellow PGRs in supporting this research and recognise that drawing from a larger dataset would have generated additional challenges in terms of time and resources, however hearing the stories of those in other HEIs would have provided a wider perspective to add further insights to GTAs' learning and experiences with students.

Key to this research has been the impact and influence of students on GTAs' teaching development, a critical role of which they are unaware. To take this research further I would be keen to explore the perspectives and perceptions of students on their GTA teachers. Whilst previous studies have focused on what students perceive as the benefits and challenges of the GTA role (e.g. Kendall & Schussler, 2012; Muzaka, 2009; Park, 2002), exploring students' views on the GTAs role in supporting teaching development remains worthy of further investigation. For example, several of the participants discussed attributes including enthusiasm and empathy as something they felt was valued by students. Exploring this through research or the feedback mechanisms mentioned above would provide more insight into these and other attributes which could then be focused on as development areas for GTAs. Similarly, the reciprocal cycle of student-centred approaches and teaching effectiveness could be explored further in initial teaching experiences. Whilst this was not a key focus of the interview questions, it emerged as a key theme suggesting that more specific investigation could create further knowledge and understanding of this theme.

6.5 Chapter summary

In drawing together my thesis in this final chapter, I have been able to further reflect on the process, the outcomes and the significance of the research, including my contributions to new knowledge. Since writing it, I have been invited to share my findings and recommendations with GTAs and those who support them, at both my own institution and with the national GTA Developers Network which closes the circle on this research, as it was being involved in these communities which sparked my curiosity and interest in this topic. Whilst I still have much to learn, and avenues for potential further research, this process has been enriching and enlivening and has directly contributed to both my own competence as a researcher and has enhanced my professional practice for the benefit of the GTAs I support, and ultimately, their students.

References

Åkerlind, G. S. (2007). Constraints on academics' potential for developing as a teacher. *Studies in higher education (Dorchester-on-Thames)*, *32*(1), 21-37. https://doi.org/10.1080/03075070601099416

Ashwin, P. (2005). Variation in students' experiences of the "Oxford Tutorial". *Higher Education*, *50*(4), 631-644. https://doi.org/10.1007/s10734-004-6369-6

Ashwin, P. (2009). *Analysing teaching-learning interactions in higher education accounting for structure and agency*. Continuum International Pub. Group.

Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research*, *1*(3), 385-405. https://doi.org/10.1177/146879410100100307

Austin, A. E. (2002). Preparing the Next Generation of Faculty: Graduate School as Socialization to the Academic Career. *The Journal of higher education (Columbus)*, *73*(1), 94-122. https://doi.org/10.1080/00221546.2002.11777132

Bailey, J. G. (1999). Academics' Motivation and Self-efficacy for Teaching and Research. *Higher Education Research & Development*, *18*(3), 343-359. https://doi.org/10.1080/0729436990180305

Bale, R., & Anderson, M. (2022). Teacher identities of graduate teaching assistants: how we (De)legitimise GTAs' role identities. *Teaching in Higher Education*, 1-17. https://doi.org/10.1080/13562517.2022.2109015

Ball, V., Joyce, A., & Mills, C. (2020). "They just have more of a vibe of being 'one of us'": undergraduate law student perceptions of PhD tutors. *The Law Teacher*, *54*(3), 327-348. https://doi.org/10.1080/03069400.2019.1698212

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Bandura, A. (1982). Self-Efficacy mechanism in human agency. *American Psychologist*, *37*(2), 122-147. https://doi.org/https://doi.org/10.1037/0003-066X.37.2.122

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W H Freeman/Times Books/ Henry Holt & Co.

Barr, M., & Wright, P. (2018). Training graduate teaching assistants: What can the discipline offer? *European Political Science*, *18*. https://doi.org/10.1057/s41304-018-0175-6

Beaton, F. (2017). Just in time and future-proofing? Policy, challenges and opportunities in the professional development of part-time teachers. *The international journal for academic development*, *22*(1), 19-30. https://doi.org/10.1080/1360144X.2016.1261354

BERA. (2024). *Ethical Guidance for Educational Research, fifth edition*. BERA. https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-fifth-edition-2024-online#fundamentals

Bogaard, A., Carey, S. C., Dodd, G., Repath, I. D., & Whitaker, R. (2005). Small Group Teaching: Perceptions and Problems. *Politics*, *25*(2), 116-125. https://doi.org/10.1111/j.1467-9256.2005.00236.x

Bovill, C. (2020a). Relationships in learning and teaching. In *Co-creating learning and teaching: towards relational pedagogy in higher education* (pp. 10-24). Critical Publishing.

Bovill, C. (2020b). Towards relational pedagogy in higher education. In *Co-creating learning and teaching: towards relational pedagogy in higher education* (pp. 43-56). Critical Publishing.

Bradley, S., Kirby, E., & Madriaga, M. (2015). What students value as inspirational and transformative teaching. *Innovations in Education and Teaching International*, *52*(3), 231-242. https://doi.org/10.1080/14703297.2014.880363

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589-597. https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative research in psychology*, *18*(3), 328-352. https://doi.org/10.1080/14780887.2020.1769238

Braun, V., & Clarke, V. (2022a). Conceptual and design thinking for thematic analysis. *Qualitative psychology*, *9*(1), 3.

Braun, V., & Clarke, V. (2022b). *Thematic analysis: a practical guide*. SAGE. https://go.exlibris.link/0S6Xp6PM

Brinkmann, S. (2015). GOFQI and the Phoenix of Qualitative Inquiry. *Qualitative Inquiry*, *21*(7), 620-622. https://doi.org/10.1177/1077800414554376

Brinkmann, S., & Kvale, S. (2015). *InterViews: learning the craft of qualitative research interviewing* (Third ed.). Sage Publications.

Brookfield, S. (2017). *Becoming a critically reflective teacher* (Second;2;Second; ed.). Jossey-Bass.

Brousseau, B. A., Book, C., & Byers, J. L. (1988). Teacher beliefs and the cultures of teaching. *Journal of Teacher Education*, *39*(6), 33-39.

Bryan, B., & Guccione, K. (2018). Was it worth it? A qualitative exploration into graduate perceptions of doctoral value. *Higher Education Research & Development*, *37*(6), 1124-1140. https://doi.org/10.1080/07294360.2018.1479378

Burton, J. P., Bamberry, N.-J., & Harris-Boundy, J. (2005). Developing personal teaching efficacy in new teachers in University settings. *Academy of Management Learning and Education*, *4*(2), 160-173. https://doi.org/https://doi.org/10.5465/amle.2005.17268563

Campbell, P., Lacsny, A., Marr, N., Hollinsworth, A., & Mathers, H. (2021). The value of teaching observations for the development of GTA educator identity. *Postgraduate Pedagogies*, *1*(1), 131-153.

Cassidy, A., Dee, J., Lam, V. K., Welsh, A., & Fox, J. (2014). Teaching assistants thrive in a collaborative team: A TA development case study. *Transformative Dialogues: Teaching and Learning Journal*, *7*(3).

Chadha, D. (2013). Reconceptualising and reframing graduate teaching assistant (GTA) provision for a research-intensive institution. *Teaching in Higher Education*, *18*(2), 205-217. https://doi.org/10.1080/13562517.2012.696537

Chadha, D. (2015). Evaluating the impact of the graduate certificate in academic practice (GCAP) programme. *The international journal for academic development*, *20*(1), 46-57. https://doi.org/10.1080/1360144X.2014.940956

Chadha, D. (2022). How do we prepare to teach? Exploring science lecturers' authentic approaches to teaching in higher education. *Research in Science Education*, *52*(2), 635-653.

Chang, T. S., Lin, H. H., & Song, M. M. (2011). University faculty members' perceptions of their teaching efficacy. *Innovations in Education and Teaching International*, *48*(1), 49-60. https://doi.org/10.1080/14703297.2010.543770

Chickering, A. W., & Gamson, Z. F. (1989). Seven principles for good practice in undergraduate education. *Biochemical Education*, *17*(3), 140-141. https://doi.org/https://doi.org/10.1016/0307-4412(89)90094-0

Chiu, P. H. P., Corrigan, P., & Hui, S. K. F. (2019). A study of graduate teaching assistants' self-efficacy in teaching: Fits and starts in the first triennium of teaching. *Cogent Education*, *6*(1). https://doi.org/10.1080/2331186x.2019.1579964

Cho, Y., Kim, M., Svinicki, M. D., & Decker, M. L. (2011). Exploring teaching concerns and characteristics of graduate teaching assistants. *Teaching in Higher Education*, *16*(3), 267-279.

Clark, L., Hansen, J., Hastie, A., Kunz, S., Standen, A., & Thorogood, J. (2021). Introduction to Postgraduate Pedagogies: Centring Graduate Teaching Assistants in Higher Education. *Postgraduate Pedagogies*, *1*(1), 7-26.

Clarke, V., & Braun, V. (2013). Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. *The psychologist*, *26*(2), 120-123.

Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, *12*(3), 297-298. https://doi.org/10.1080/17439760.2016.1262613

Colardyn, D., & Bjornavold, J. (2004). Validation of Formal, Non-Formal and Informal Learning: Policy and Practices in EU Member States. *European Journal of Education*, *39*(1), 69-89. http://www.jstor.org/stable/1503751

Compton, M., & Tran, D. (2017). Liminal space or in limbo? Post Graduate Researchers and their personal pie charts of identity. *Compass (Eltham)*, *10*(3). https://doi.org/10.21100/compass.v10i3.620

Cook-Sather, A., & Alter, Z. (2011). What Is and What Can Be: How a Liminal Position Can Change Learning and Teaching in Higher Education. *Anthropology & Education Quarterly*, *42*(1), 37-53. https://doi.org/https://doi.org/10.1111/j.1548-1492.2010.01109.x

Cousin, G. (2009). *Researching learning in higher education: an introduction to contemporary methods and approaches*. Routledge.

Cranfield, S. (2016). Teaching by leading and managing learning environments. *Enhancing teaching practice in higher education*, 47-68.

Deacon, C., Hajek, A., & Schulz, H. (2017). Graduate teaching assistants' perceptions of teaching competencies required for work in undergraduate science labs. *International Journal of Science Education*, *39*(16), 2189-2208. https://doi.org/10.1080/09500693.2017.1367110

DeChenne, S. E., Enochs, L. G., & Needham, M. (2012). Science, technology, engineering and mathematics graduate teaching assistants teaching self-efficacy. *Journal of the Scholarship of Teaching and Learning*, *12*(4), 102-123.

DeChenne, S. E., Koziol, N., Needham, M., & Enochs, L. (2015). Modeling Sources of Teaching Self-Efficacy for Science, Technology, Engineering, and Mathematics Graduate Teaching Assistants. *CBE Life Science Education*, *14*(3). https://doi.org/10.1187/cbe.14-09-0153

Denscombe, M. (2014). *Good research guide: for small-scale social research projects* (5th ed.). McGraw-Hill Education.

Di Benedetti, M., Plumb, S., & Beck, S. B. M. (2023). Effective use of peer teaching and self-reflection for the pedagogical training of graduate teaching assistants in engineering. *European Journal of Engineering Education*, *48*(1), 59-74. https://doi.org/10.1080/03043797.2022.2054313

Dillard, J. B., Sadek, K., & Muenks, K. (2023). Undergraduate perceptions of graduate teaching assistants: competence, relatedness, and autonomy in practice. *Higher Education Research & Development*, 1-16. https://doi.org/10.1080/07294360.2023.2215169

Dobbins, K., Adams, N. F., Bishop, E., Ismayilli, M., Papadopoulou, M., Phillips, M. L., Tauchner, N., van Wessem, E., & Watkins, J. (2021). The power of peers in GTA development of practice: evaluation of an equal-status teaching observation project. *Compass: Journal of Learning and Teaching in HE*, *14*(2).

Dong, J., Zhang, Y., & Ma, K. (2023). Online teaching self-efficacy of Chinese university teachers amidst Covid-19: its changes and the moderation of adaptability and administration quality. *Social Influence*, *18*(1), 2187881. https://doi.org/10.1080/15534510.2023.2187881

Dudley, M. (2009). Jumping out of an airplane: A TA's perspective on teaching effectiveness. *Eastern Education Journal*, *38*(1), 1-10.

Engin, M. (2016). Enhancing the status of peer observation through the scholarship of teaching and learning. *International Journal for Academic Development*, *21*(4), 377-382. https://doi.org/10.1080/1360144X.2016.1225576

Entwistle, N., & Walker, P. (2002). Strategic Alertness and Expanded Awareness within Sophisticated Conceptions of Teaching. In N. Hativa & P. Goodyear (Eds.), *Teacher Thinking, Beliefs and Knowledge in Higher Education* (pp. 15-39). Springer Netherlands. https://doi.org/10.1007/978-94-010-0593-7_2

Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*, *70*(1), 113-136. https://doi.org/https://doi.org/10.1348/000709900158001

Exley, K., Dennick, R., & Fisher, A. (2019). Small Group Teaching: Tutorials, Seminars and Workshops.

Fives, H., & Looney, L. (2009). College Instructors' Sense of Teaching and Collective Efficacy. *International journal of Teaching and Learning in Higher education*, *20*(2), 182-191.

Flodén, J. (2017). The impact of student feedback on teaching in higher education. *Assessment & Evaluation in Higher Education*, *42*(7), 1054-1068. https://doi.org/10.1080/02602938.2016.1224997

Fong, C. J., Dillard, J. B., & Hatcher, M. (2019). Teaching self-efficacy of graduate student instructors: Exploring faculty motivation, perceptions of autonomy support, and undergraduate student engagement. *International Journal of Educational Research*, *98*, 91-105. https://doi.org/https://doi.org/10.1016/j.ijer.2019.08.018

Fontana, A., & Frey, J. H. (2000). The interview: From structured questions to negotiated text. In N. K. Denzin & Y. S. Lincoln (Eds.), *SAGE Handbook of qualitative research* (2nd ed., pp. 645-672). Sage.

Freire, P. (1998). *Pedagogy of freedom: Ethics, democracy, and civic courage*. Rowman & Littlefield.

Gibbs, C. (2003). Explaining effective teaching : self efficacy and thought control of action. *Journal of educational enquiry*, *4*(2), 1-14. https://go.exlibris.link/3psLsT5N

Gillespie, M. (2005). Student-teacher connection: a place of possibility. *J Adv Nurs*, *52*(2), 211-219. https://doi.org/10.1111/j.1365-2648.2005.03581.x

Glackin, M., & Hohenstein, J. (2018). Teachers' self-efficacy: progressing qualitative analysis. *International Journal of Research & Method in Education*, *41*(3), 271-290. https://doi.org/10.1080/1743727X.2017.1295940

Gosling, D. (2002). Models of peer observation of teaching. In: York.

Grant, B., Lillie, C., Smith, M., & Tomlinson, A. (2024). Exploring the value of PGRs who teach (PGWT) in supporting undergraduate students' sense of belonging: A Student Staff Partnership Project. *Journal of PGR Pedagogic Practice*, *4*, 12-31.

Hagenauer, G., Muehlbacher, F., & Ivanova, M. (2023). "It's where learning and teaching begins – is this relationship" - insights on the teacher-student relationship at university from the teachers' perspective. *High Educ (Dordr)*, *85*(4), 819-835. https://doi.org/10.1007/s10734-022-00867-z

Hagenauer, G., & Volet, S. E. (2014a). 'I don't think I could, you know, just teach without any emotion': exploring the nature and origin of university teachers' emotions. *Research Papers in Education*, *29*(2), 240-262. https://doi.org/10.1080/02671522.2012.754929

Hagenauer, G., & Volet, S. E. (2014b). Teacher–student relationship at university: an important yet under-researched field. *Oxford Review of Education*, *40*(3), 370-388. https://doi.org/10.1080/03054985.2014.921613

Haigh, N. (2005). Everyday conversation as a context for professional learning and development. *International Journal for Academic Development*, *10*(1), 3-16. https://doi.org/10.1080/13601440500099969

Hancock, J. C. (2018). Engaging with liminalities and combating toxicity: a compassionate approach to developming professional identities for PhD students who teach. *Journal of Perspectives in Applied Academic Practice*, *6*(3), 66-74. https://doi.org/https://doi.org/10.14297/jpaap.v6i3.380

Hardré, P. L., & Burris, A. O. (2012). What contributes to teaching assistant development: differential responses to key design features. *Instructional Science*, *40*(1), 93-118. https://doi.org/10.1007/s11251-010-9163-0

Hargreaves, A. (2010). Presentism, Individualism, and Conservatism: The Legacy of Dan Lortie's Schoolteacher: A Sociological Study. *Curriculum Inquiry*, *40*(1), 143-154. https://doi.org/10.1111/j.1467-873X.2009.00472.x

Hemmings, B. C. (2015). Strengthening the teaching self-efficacy of early career academics. *Issues in Educational Research*, *25*(1).

Hemmings, B. C., & Kay, R. (2009). Lecturer self-efficacy: its related dimensions and the influence of gender and qualifications. *Issues in Educational Research*, *19*(3).

Hemmings, B. C., Kay, R., Sharp, J., & Taylor, C. (2012). A transnational comparison of lecturer self-efficacy. *Journal of Further and Higher Education*, *36*(3), 291-307. https://doi.org/10.1080/0309877x.2011.614932

Hendry, G. D., Bell, A., & Thomson, K. (2014). Learning by observing a peer's teaching situation. *International Journal for Academic Development*, *19*(4), 318-329. https://doi.org/10.1080/1360144X.2013.848806

Hendry, G. D., & Oliver, G. R. (2012). Seeing is Believing: The Benefits of Peer Observation. *Journal of university teaching & learning practice*, *9*(1), 87-96. https://doi.org/10.53761/1.9.1.7

Houser, M. L., & Waldbuesser, C. (2017). Emotional Contagion in the Classroom: The Impact of Teacher Satisfaction and Confirmation on Perceptions of Student Nonverbal Classroom Behavior. *College Teaching*, *65*(1), 1-8. https://doi.org/10.1080/87567555.2016.1189390

Huxham, M., Scoles, J., Green, U., Purves, S., Welsh, Z., & Gray, A. (2017). 'Observation has set in': comparing students and peers as reviewers of teaching. *Assessment & Evaluation in Higher Education*, *42*(6), 887-899. https://doi.org/10.1080/02602938.2016.1204594

Ismayilova, K., & Klassen, R. M. (2019). Research and teaching self-efficacy of university faculty: Relations with job satisfaction. *International Journal of Educational Research*, *98*, 55-66. https://doi.org/https://doi.org/10.1016/j.ijer.2019.08.012

James, N., & Busher, H. (2012). Internet Interviewing. In G. J., H. J., M. A., & M. M. K. (Eds.), *The SAGE Handbook of Interview Research- the complexity of the craft* (2nd ed.). SAGE publications.

Jarvis, J., Clark, K., & Smith, K. (2020). *Conversations to Change Teaching*. Critical Publishing. http://ebookcentral.proquest.com/lib/lancaster/detail.action?docID=6196100

Jensen, M., Farrand, K., Redman, L., Varcoe, T., & Coleman, L. (2005). Helping Graduate Teaching Assistants lead discussions with undergraduate students: a few simple teaching strategies. *Journal of College Science Teaching*, *34*(7), 20+. https://link.gale.com/apps/doc/A134103101/AONE?u=unilanc&sid=bookmark-AONE&xid=b165a64e

Johnson, M., & Majewska, D. (2022). Formal, Non-Formal, and Informal Learning: What Are They, and How Can We Research Them? Research Report. *Cambridge University Press & Assessment*.

Jordan, K., & Howe, C. (2017). The perceived benefits and problems associated with teaching activities undertaken by doctoral students. *Teaching in Higher Education*, *23*(4), 504-521. https://doi.org/10.1080/13562517.2017.1414787

Joyce, A., & Hassenfeldt, T. A. (2020). Utility of a Peer Teaching Mentor to Graduate Teaching Assistants. *College Teaching*, *68*(1), 12-19. https://doi.org/10.1080/87567555.2019.1689906

Karpouza, E., & Emvalotis, A. (2019). Exploring the teacher-student relationship in graduate education: a constructivist grounded theory. *Teaching in Higher Education*, *24*(2), 121-140. https://doi.org/10.1080/13562517.2018.1468319

Kaur, A., Awang-Hashim, R., & Kaur, M. (2019). Students' experiences of co-creating classroom instruction with faculty- a case study in eastern context. *Teaching in Higher Education*, *24*(4), 461-477. https://doi.org/10.1080/13562517.2018.1487930

Kendall, K. D., & Schussler, E. E. (2012). Does Instructor Type Matter? Undergraduate Student Perception of Graduate Teaching Assistants and Professors. *CBE life sciences education*, *11*(2), 187-199. https://doi.org/10.1187/cbe.11-10-0091

Kendall, K. D., & Schussler, E. E. (2013). Evolving Impressions: Undergraduate Perceptions of Graduate Teaching Assistants and Faculty Members over a Semester. *CBE life sciences education*, *12*(1), 92-105. https://doi.org/10.1187/cbe.12-07-0110

Kim, E. (2009). Beyond language barriers: Teaching self-efficacy among East Asian international teaching assistants. *International journal of Teaching and Learning in Higher education*, *21*(2), 171-180.

Klassen, R. M., Foster, R. Y., Rajani, S., & Bowman, C. (2009). Teaching in the Yukon: Exploring teachers' efficacy beliefs, stress, and job satisfaction in a remote setting. *International Journal of Educational Research*, *48*(6), 381-394. https://doi.org/https://doi.org/10.1016/j.ijer.2010.04.002

Klassen, R. M., & Tze, V. M. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational research review*, *12*, 59-76.

Klassen, R. M., Tze, V. M. C., Betts, S. M., & Gordon, K. A. (2011). Teacher Efficacy Research 1998–2009: Signs of Progress or Unfulfilled Promise? *Educational Psychology Review*, *23*(1), 21-43. https://doi.org/10.1007/s10648-010-9141-8

Korthagen, F. A. J., Attema-Noordewier, S., & Zwart, R. C. (2014). Teacher–student contact: Exploring a basic but complicated concept. *Teaching and Teacher Education*, *40*, 22-32. https://doi.org/https://doi.org/10.1016/j.tate.2014.01.006

Kugel, P. (1993). How professors develop as teachers. *Studies in Higher Education*, *18*(3), 315-328. https://doi.org/10.1080/03075079312331382241

Kvale, S. (2006). Dominance Through Interviews and Dialogues. *Qualitative Inquiry*, *12*(3), 480-500. https://doi.org/10.1177/1077800406286235

Kyndt, E., Gijbels, D., Grosemans, I., & Donche, V. (2016). Teachers' Everyday Professional Development:Mapping Informal Learning Activities, Antecedents, and Learning Outcomes. *Review of Educational Research*, *86*(4), 1111-1150. https://doi.org/10.3102/0034654315627864

Lancaster University. (2021). Lancaster University. https://www.lancaster.ac.uk/data-analytics/studentstatistics.html

Landino, R. A., & Owen, S. V. (1988). Self-efficacy in university faculty. *Journal of Vocational Behavior*, *33*(1), 1-14. https://doi.org/https://doi.org/10.1016/0001-8791(88)90030-9

Lavee, E., & Itzchakov, G. (2023). Good listening: A key element in establishing quality in qualitative research. *Qualitative Research*, *23*(3), 614-631. https://doi.org/10.1177/14687941211039402

Lindblom-Ylänne, S., Trigwell, K., Nevgi, A., & Ashwin, P. (2006). How approaches to teaching are affected by discipline and teaching context. *Studies in higher education (Dorchester-on-Thames)*, *31*(3), 285-298. https://doi.org/10.1080/03075070600680539

Lorenzetti, D. L., Shipton, L., Nowell, L., Jacobsen, M., Lorenzetti, L., Clancy, T., & Paolucci, E. O. (2019). A systematic review of graduate student peer mentorship in academia. *Mentoring & Tutoring: Partnership in Learning*, *27*(5), 549-576. https://doi.org/10.1080/13611267.2019.1686694

Lortie, D. C. (2002). *Schoolteacher: a sociological study* ([2nd]. ed.). University of Chicago Press.

Ma, K., McMaugh, A., & Cavanagh, M. (2022). The development of teacher self-efficacy from preservice to early career teacher: a systematic review of development and methodological quality in longitudinal research. *International Journal of Research & Method in Education*, *45*(5), 450-465. https://doi.org/10.1080/1743727X.2021.1990879

Mack, L. (2010). The philosophical underpinnings of educational research. In: Polyglossia.

Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *All Ireland journal of higher education*, *9*(3).

Marquis, E., Power, E., & Yin, M. (2019). Promoting and/or evading change: the role of student-staff partnerships in staff teaching development. *Journal of Further and Higher Education*, *43*(10), 1315-1330. https://doi.org/10.1080/0309877X.2018.1483013

Matos, M. D. M., Iaochite, R. T., & Sharp, J. G. (2021). Lecturer self-efficacy beliefs: an integrative review and synthesis of relevant literature. *Journal of Further and Higher Education*, 1-21.

McMahon, T., Barrett, T., & O'Neill, G. (2007). Using observation of teaching to improve quality: finding your way through the muddle of competing conceptions, confusion of practice and mutually exclusive intentions. *Teaching in Higher Education*, *12*(4), 499-511. https://doi.org/10.1080/13562510701415607

Melton, B., & Bodur, Y. (2011). Effects of a Graduate Training Program on Teaching Self Efficacy. *National Teacher Education Journal*, *4*(2), 49-55.

Miller, A. D., Ramirez, E. M., & Murdock, T. B. (2017). The influence of teachers' self-efficacy on perceptions: Perceived teacher competence and respect and student effort and achievement. *Teaching and Teacher Education*, *64*, 260-269. https://doi.org/10.1016/j.tate.2017.02.008

Mills, D. A., P. (2013). *Small group teaching: a toolkit for learning*. https://www.advance-he.ac.uk/knowledge-hub/small-group-teaching-toolkit-learning

Mills, N. (2011). Teaching Assistants' Self-Efficacy in Teaching Literature: Sources, Personal Assessments, and Consequences. *The Modern Language Journal*, *95*(1), 61-80. https://doi.org/10.1111/j.1540-4781.2010.01145.x

Mills, N. A., & Allen, H. (2007). Teacher self-efficacy of Graduate Teaching Assistants of French.

Morris, D. B., & Usher, E. L. (2011). Developing teaching self-efficacy in research institutions: A study of award-winning professors. *Contemporary Educational Psychology*, *36*(3), 232-245. https://doi.org/10.1016/j.cedpsych.2010.10.005

Morris, D. B., Usher, E. L., & Chen, J. A. (2017). Reconceptualizing the Sources of Teaching Self-Efficacy: a Critical Review of Emerging Literature. *Educational Psychology Review*, *29*(4), 795-833. https://doi.org/10.1007/s10648-016-9378-y

Mottet, T. P., Beebe, S. A., Raffeld, P. C., & Medlock, A. L. (2004). The effects of student verbal and nonverbal responsiveness on teacher self-efficacy and job satisfaction. *Communication Education*, *53*(2), 150-163. https://doi.org/10.1080/03634520410001682410

Muzaka, V. (2009). The niche of Graduate Teaching Assistants (GTAs): perceptions and reflections. *Teaching in Higher Education*, *14*(1), 1-12. https://doi.org/10.1080/13562510802602400

Nasser-Abu Alhija, F., & Fresko, B. (2018). Graduate teaching assistants: how well do their students think they do? *Assessment and evaluation in higher education*, *43*(6), 943-954. https://doi.org/10.1080/02602938.2018.1423673

Navarro, L. P. (2005). Las creencias de autoeficacia docente del profesorado universitario. *PhD diss. Madrid: Universidad Pontificia Comillas*.

O'Keeffe, M., Crehan, M., Munro, M., Logan, A., Farrell, A. M., Clarke, E., Flood, M., Ward, M., Andreeva, T., Van Egeraat, C., Heaney, F., Curran, D., & Clinton, E. (2021). Exploring the role of peer observation of teaching in facilitating cross-institutional professional conversations about teaching and learning. *International Journal for Academic Development*, *26*(3), 266-278. https://doi.org/10.1080/1360144X.2021.1954524

Oleson, A., & Hora, M. T. (2014). Teaching the way they were taught? Revisiting the sources of teaching knowledge and the role of prior experience in shaping faculty teaching practices. *Higher Education*, *68*(1), 29-45. https://doi.org/10.1007/s10734-013-9678-9

Pajares, F. (1996). Self-Efficacy Beliefs in Academic Settings. *Review of Educational Research*, *66*(4), 543-578. https://doi.org/10.3102/00346543066004543

Park, C. (2002). Neither fish nor fowl? The perceived benefits and problems of using graduate teaching assistants (GTAs) to teach undergraduate students. *Higher Education Review*, *35*(1), 50-62.

Park, C. (2004). The graduate teaching assistant (GTA): Lessons from North American experience. *Teaching in Higher Education*, *9*(3), 349-361.

Park, C., & Ramos, M. (2002). The donkey in the department? Insights into the graduate teaching assistant (GTA) experience in the UK. *Journal of Graduate Education*, *3*(2), 47-53.

Parmenter, L., & Robertson, N. (2022). Student perspectives on good university teachers: communication, clarity, commitment, care. *European Journal of Engineering Education*, *47*(6), 852-864. https://doi.org/10.1080/03043797.2022.2073435

Perera, H. N., Calkins, C., & Part, R. (2019). Teacher self-efficacy profiles: Determinants, outcomes, and generalizability across teaching level. *Contemporary Educational Psychology*, *58*, 186-203. https://doi.org/https://doi.org/10.1016/j.cedpsych.2019.02.006

Pickering, A. M. (2006). Learning about university teaching: reflections on a research study investigating influences for change. *Teaching in Higher Education*, *11*(3), 319-335. https://doi.org/10.1080/13562510600680756

Poore, J., Stripling, C. T., & Estepp, C. M. (2014). Graduate Teaching Assistants' Sense of Teaching Self-Efficacy in a College of Agricultural Sciences and Natural Resources. *NACTA Journal*, *58*(2), 122-128.

Postareff, L., Lindblom-Ylänne, S., & Nevgi, A. (2008). A follow-up study of the effect of pedagogical training on teaching in higher education. *Higher Education*, *56*(1), 29-43. https://doi.org/10.1007/s10734-007-9087-z

Poulou, M. (2007). Personal Teaching Efficacy and Its Sources: Student teachers' perceptions. *Educational Psychology*, *27*(2), 191-218. https://doi.org/10.1080/01443410601066693

Prieto, L. R., & Altmaier, E. M. (1994). The relationship of prior training and previous teaching experience to self-efficacy among Graduate Teaching Assistants. *Research in Higher Education*, *35*(4), 481-497.

Prieto, L. R., & Meyers, S. A. (1999). Effects of Training and Supervision on the Self-Efficacy of Psychology Graduate Teaching Assistants. *Teaching of Psychology*, *26*(4), 264-266. https://doi.org/10.1207/s15328023top260404

Radnor, H. (2001). *Researching your professional practice*. Open University Press.

Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). RoutledgeFalmer. https://doi.org/10.4324/9780203507711

Regan, J. A., & Besemer, K. (2009). Using action learning to support doctoral students to develop their teaching practice. *International Journal for Academic Development*, *14*(3), 209-220. https://doi.org/10.1080/13601440903106536

Reinholz, D. L. (2017). Not-so-critical friends: Graduate student instructors and peer feedback. *International Journal for the Scholarship of Teaching and Learning*, *11*(2). https://doi.org/https://doi.org/10.20429/ijsotl.2017.110210

Revell, A., & Wainwright, E. (2009). What Makes Lectures 'Unmissable'? Insights into Teaching Excellence and Active Learning. *Journal of Geography in Higher Education*, *33*(2), 209-223. https://doi.org/10.1080/03098260802276771

Richardson, S., & Radloff, A. (2014). Allies in learning: critical insights into the importance of staff–student interactions in university education. *Teaching in Higher Education*, *19*(6), 603-615. https://doi.org/10.1080/13562517.2014.901960

Roach, K. D. (1997). Effects of graduate teaching assistant attire on student learning, misbehaviors, and ratings of instruction. *Communication Quarterly*, *45*(3), 125-141. https://doi.org/10.1080/01463379709370056

Rubin, H. J., & Rubin, I. S. (2005). *Qualitative Interviewing: The Art of Hearing Data* (2nd ed.). https://doi.org/10.4135/9781452226651

Russell, J. A. (2009). A Survey of Basic Instructional Program Graduate Teaching Assistant Development and Support Processes. *Research Quarterly for Exercise and Sport*, *80*(4), 792-795. https://doi.org/10.1080/02701367.2009.10599621

Sadler, I. (2012). The influence of interactions with students for the development of new academics as teachers in higher education. *Higher Education*, *64*(2), 147-160. https://doi.org/10.1007/s10734-012-9545-0

Sadler, I. (2013). The role of self-confidence in learning to teach in higher education. *Innovations in Education and Teaching International*, *50*(2), 157-166.

Saetnan, E. (2022). Developing teaching self-efficacy for aspiring academics. *Developing Academic Practice*, *2022*, 1-16. https://doi.org/https://doi.org/10.3828/dap.2022.2

Salmons, J. E. (2016). Doing Qualitative Research Online. In *Doing Qualitative Research Online*. SAGE Publications Ltd. https://doi.org/10.4135/9781473921955

Santiago, A. M., & Einarson, M. K. (1998). Background characteristics as predictors of academic self-confidence and academic self-efficacy among graduate Science and Engineering students. *Research in Higher Education*, *39*(2), 163-198.

Schoen, L. G., & Winocur, S. (1988). An investigation of the self-efficacy of male and female academics. *Journal of Vocational Behaviour*, *32*, 307-320.

Schön, D. A. (2017). *The reflective practitioner: How professionals think in action*. Routledge.

Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology*, *60*, 101832. https://doi.org/https://doi.org/10.1016/j.cedpsych.2019.101832

Schussler, E. E., Read, Q., Marbach-Ad, G., Miller, K., & Ferzli, M. (2015). Preparing biology graduate teaching assistants for their roles as instructors: An assessment of

institutional approaches. *CBE—Life Sciences Education*, *14*(3), ar31. https://doi.org/https://doi.org/10.1187/cbe.14-11-0196

Scoles, J., Huxham, M., Sinclair, K., Lewis, C., Jung, J., & Dougall, E. (2021). The other side of a magic mirror: exploring collegiality in student and staff partnership work. *Teaching in Higher Education*, *26*(5), 712-727. https://doi.org/10.1080/13562517.2019.1677588

Shannon, D. M., Twale, D. J., & Moore, M. S. (1998). TA Teaching Effectiveness. *The Journal of Higher Education*, *69*(4), 440-466. https://doi.org/10.1080/00221546.1998.11775144

Sharp, J. G., Hemmings, B., Kay, R., & Callinan, C. (2013). An application of the revised 'Lecturer Self-Efficacy Questionnaire': An evidence-based route for initiating transformational change. *Journal of Further and Higher Education*, *37*(5), 643-674.

Shum, A., Lau, P., & Fryer, L. (2020). From learner to teacher: (re)training graduate teaching assistants' teaching approaches and developing self-efficacy for and interest in teaching. *Higher Education Research & Development*, 1-18. https://doi.org/10.1080/07294360.2020.1818063

Simmons, N. (2011). Caught with their constructs down? Teaching development in the pre-tenure years. *International Journal for Academic Development*, *16*(3), 229-241. https://doi.org/10.1080/1360144X.2011.596706

Simon, E., & Pleschová, G. (2021). PhD students, significant others, and pedagogical conversations. The importance of trusting relationships for academic development. *International Journal for Academic Development*, *26*(3), 279-291. https://doi.org/10.1080/1360144X.2021.1949324

Sinnayah, P., Ambler, T., Kelly, K., Konjarski, L., Tangalakis, K., & Smallridge, A. (2023). Reviewing the literature: Collaborative professional learning for academics in higher education. *Innovations in Education and Teaching International*, 1-15. https://doi.org/10.1080/14703297.2023.2227614

Slack, H. R., & Pownall, M. (2023). 'Treat GTAs as colleagues, rather than spare parts': the identity, agency, and wellbeing of graduate teaching assistants. *Journal of Further and Higher Education*, 1-14. https://doi.org/10.1080/0309877X.2023.2241392

Smith, C. R., & Delgado, C. (2021). Developing a Model of Graduate Teaching Assistant Teacher Efficacy: How Do High and Low Teacher Efficacy Teaching Assistants Compare? *CBE—Life Sciences Education*, *20*(1), ar2. https://doi.org/10.1187/cbe.20-05-0096

Smith, C. R., Menon, D., Wierzbicki, A., & Dauer, J. M. (2023). Exploring STEM Teaching Assistants' Self-Efficacy and Its Relation to Approaches to Teaching. *CBE—Life Sciences Education*, *22*(1), ar6. https://doi.org/10.1187/cbe.22-06-0115

Smith, L. F., Corkery, G., Buckley, J., & Calvert, A. (2013). Changes in Secondary School Preservice Teachers' Concerns About Teaching in New Zealand. *Journal of Teacher Education*, *64*(1), 60-74. https://doi.org/10.1177/0022487112449019

Soodak, L. C., & Podell, D. M. (1997). Efficacy and experience: perceptions of efficacy among preservice and practicing teachers. *Journal of Research and Development in Education*, *30*(4), 214-221.

Soomere, T., & Karm, M. (2021). PhD students' conversations that lead to learning about teaching: the interplay of formal and informal learning. *International Journal for Academic Development*, *26*(3), 252-265. https://doi.org/10.1080/1360144X.2021.1951738

Steinert, Y. (2004). Student perceptions of effective small group teaching. *Med Educ*, *38*(3), 286-293. https://doi.org/10.1046/j.1365-2923.2004.01772.x

Stes, A., De Maeyer, S., Gijbels, D., & Van Petegem, P. (2012). Instructional development for teachers in higher education: Effects on students' perceptions of the teaching-learning environment: Instructional development in higher education. *British*

Journal of Educational Psychology, *82*(3), 398-419. https://doi.org/10.1111/j.2044-8279.2011.02032.x

Stocks, C. V. (2018). Supporting Graduate Teaching Assistants' (GTA) Continual Professional Learning: The Benefits of Using Action Learning. *Journal of perspectives in applied academic practice*, *6*(1), 84-90. https://doi.org/10.14297/jpaap.v6i1.288

Su, F., & Wood, M. (2012). What makes a good university lecturer? Students' perceptions of teaching excellence. *Journal of applied research in higher education*, *4*(2), 142-155. https://doi.org/10.1108/17581181211273110

Tenenberg, J. (2016). Learning through observing peers in practice. *Studies in Higher Education*, *41*(4), 756-773. https://doi.org/10.1080/03075079.2014.950954

Thomson, K. E., & Trigwell, K. R. (2018). The role of informal conversations in developing university teaching? *Studies in higher education (Dorchester-on-Thames)*, *43*(9), 1536-1547. https://doi.org/10.1080/03075079.2016.1265498

Tight, M. (2002). *Key Concepts in Adult Education and Training* (Vol. 2nd ed) [Book]. Routledge. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=84666&site=ehost-live&authtype=ip,shib&user=s1523151

Tobiason, G. (2023). From content-centered logic to student-centered logic: can peer observation shift how faculty think about their teaching? *International Journal for Academic Development*, *28*(3), 287-300. https://doi.org/10.1080/1360144X.2021.2015691

Tschannen-Moran, M., Hoy, A., & Hoy, W. (1998). Teacher Efficacy: Its Meaning and Measure. *Review of Educational Research - REV EDUC RES*, *68*, 202-248. https://doi.org/10.3102/00346543068002202

Tschannen-Moran, M., & Hoy, A. W. (2001). Teaching efficacy: capturing an elusive construct. *Teaching and Teacher Education*, *17*, 783-805.

Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education*, *23*(6), 944-956. https://doi.org/10.1016/j.tate.2006.05.003

UCL. (2021). www.ucl.ac.uk

UKRI. (2024). *UKRI Training Grant Guidance*. Swindon: UKRI

University of Hull. (2021). *Annual Report and Statement of Accounts 2020-21*. https://www.hull.ac.uk/choose-hull/university-and-region/key-documents/docs/annual-report-and-statement-of-accounts-2020-21.pdf

Vitae. (2011a). *Every Researcher Counts*. Retrieved 9.8.24 from https://www.vitae.ac.uk/doing-research/every-researcher-counts-equality-and-diversity-in-researcher-careers

Vitae. (2011b). *Researcher Development Framework*. Retrieved 9.8.24 from https://www.vitae.ac.uk/policy/vitae-concordat-vitae-2011.pdf

Weger Jr, H., Castle, G. R., & Emmett, M. C. (2010). Active Listening in Peer Interviews: The Influence of Message Paraphrasing on Perceptions of Listening Skill. *International Journal of Listening*, *24*(1), 34-49. https://doi.org/10.1080/10904010903466311

Wilkinson, S. (2019). The story of Samantha: the teaching performances and inauthenticities of an early career human geography lecturer. *Higher education research and development*, *38*(2), 398-410. https://doi.org/10.1080/07294360.2018.1517731

Winstone, N., & Moore, D. (2017). Sometimes fish, sometimes fowl? Liminality, identity work and identity malleability in graduate teaching assistants. *Innovations in Education and Teaching International*, *54*(5), 494-502. https://doi.org/10.1080/14703297.2016.1194769

Winter, J., Turner, R., Gedye, S., Nash, P., & Grant, V. (2015). Graduate teaching assistants: responding to the challenges of internationalisation. *The international journal for academic development*, *20*(1), 33-45. https://doi.org/10.1080/1360144X.2014.986661

Winters, K. E., & Matusovich, H. M. (2011). *Graduate Teaching Assistants' Decision Making and Perceptions of Autonomy* ASEE Conference, Vancouver, BC. 3/5 GTA-focussed (Engineeering, US). Findings include that GTAs perceive they have a lack of autonomy.

Wise, A. F. (2011). Supporting Future Faculty in Developing their Teaching Practices: An Exploration of Communication Networks among Graduate Teaching Assistants. *The International Journal of Teaching and Learning in Higher Education*, *23*, 135-149.

Wolf, K. (2011). Agricultural Education Perceived Teacher Self–Efficacy: A Descriptive Study Of Beginning Agricultural Education Teachers. *Journal of Agricultural Education*, *52*(2), 163-176. https://doi.org/10.5032/jae.2011.02163

Wood, B., & Moran, M. (1994). The Engine Room of Instruction: Small Group Teaching. *Politics*, *14*(2), 83-90. https://doi.org/10.1111/j.1467-9256.1994.tb00121.x

Wubbels, T., & Brekelmans, M. (2005). Two decades of research on teacher-student relationships in class. *International Journal of Educational Research*, *43*, 6-24. https://doi.org/10.1016/j.ijer.2006.03.003

Wyse, S. A., Long, T. M., & Ebert-May, D. (2014). Teaching assistant professional development in biology: Designed for and driven by multidimensional data. *CBE—Life Sciences Education*, *13*(2), 212-223.

Young, S. L., & Bippus, A. M. (2008). Assessment of Graduate Teaching Assistant (GTA) Training: A Case Study of a Training Program and Its Impact on GTAs. *Communication Teacher*, *22*(4), 116-129. https://doi.org/10.1080/17404620802382680

Zhuo, M., & Li, Y. (2024). Harnessing the power of peer dialogue to support GTAs' professional development: two reflective stories. *Journal of PGR Pedagogic Practice*, *4*(4), 136-158. https://doi.org/ https://doi.org/10.31273/jppp.vol4.2024.1792

Appendices

Appendix 1: Participant information sheet

Lancaster University

Participant information sheet

> For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

I am a PhD student at Lancaster University and I would like to invite you to take part in a research study about the **teaching self-efficacy of Postgraduate Research students**.

Please take time to read the following information carefully before you decide whether or not you wish to take part.

What is the study about?
This study aims to explore how Postgraduate Research students who teach perceive their teaching self-efficacy, whether that self-efficacy develops during their initial teaching experiences and what factors contribute to their sense of teaching self-efficacy.

Why have I been invited?
I have approached you because you are a Postgraduate Research student who has not done any HE level teaching in the UK before, is about to start HE teaching and has expressed an interest in pursuing an academic career in the future. I would be very grateful if you would agree to take part in this study.

What will I be asked to do if I take part?

If you decided to take part, this would involve the following:

- Completing a self-efficacy scale survey once at the start and once at the end of the trimester/academic year. This will take around 30 minutes each time.
- Taking part in two semi-structured interviews lasting approximately 30 mins-one hour each (one at the start and one at the end of the trimester/academic year) about your teaching.

What are the possible benefits from taking part?
Taking part in this study will allow you to share your experiences of initial HE teaching practice as a postgraduate research student which will contribute to our understanding of what influences a sense of teaching self-efficacy at this early career stage.

Do I have to take part?

No. It's completely up to you to decide whether or not you take part. Your participation is voluntary and if you do not wish to take part you do not need to give a reason.

If you are undertaking any training or development for your teaching, this study in no way affects or intersects with that.

What if I change my mind?
If you change your mind, you are free to withdraw at any time during your participation in this study. If you want to withdraw, please let me know, and I will extract any ideas or information (=data) you contributed to the study and destroy them. However, it is difficult and often impossible to take out data from one specific participant when this has already been anonymised or pooled together with other people's data. Therefore, you can only withdraw up to two weeks after taking part in the study.

What are the possible disadvantages and risks of taking part?
It is unlikely that there will be any major disadvantages to taking part.

Will my data be identifiable?

After the interviews and observations, only I, the researcher conducting this study will have access to the ideas you share with me.

I will keep all personal information about you (e.g. your name and other information about you that can identify you) confidential, that is I will not share it with others. I will remove any personal information from the written record of your contribution. All reasonable steps will be taken to protect the anonymity of the participants involved in this project. **The data from this study will not be shared with anyone responsible for employing you as a HE teacher.**

How will I use the information you have shared with me and what will happen to the results of the research study?
I will use the information you have shared with me for research purposes only. This will include my PhD thesis and other publications, for example journal articles. I may also present the results of my study at academic conferences. When writing up the findings from this study, I would like to reproduce some of the views and ideas you shared with me. I will only use anonymised quotes (e.g. from my interview with you), so that although I will use your exact words, all reasonable steps will be taken to protect your anonymity in **publications.**

How my data will be stored
Your data will be stored in encrypted files (that is no-one other than me, the researcher will be able to access them) and on password-protected computers. I will store hard copies of any data securely in locked cabinets in my office. I will keep data that can identify you separately from non-personal information (e.g. your views on a specific topic).In accordance with University guidelines, I will keep the data securely for a minimum of ten years.

What if I have a question or concern?
If you have any queries or if you are unhappy with anything that happens concerning your participation in the study, please contact myself Catherine Lillie via c.lillie@lancaster.ac.uk

My Supervisor's contact details are: Professor Paul Ashwin, Centre for Higher Education Research and Evaluation, Educational Research, County South, Lancaster University, Lancaster, LA1 4YD paul.ashwin@lancaster.ac.uk **01524 593572**

This study has been reviewed and approved by the Faculty of Arts and Social Sciences and Lancaster Management School's Research Ethics Committee.

Thank you for considering your participation in this project.

Appendix 2: Consent form

CONSENT FORM

Lancaster University

Project Title: Teaching self-efficacy of Postgraduate Research students

Name of Researcher: Catherine Lillie
Email: c.lillie@lancaster.ac.uk

Please tick each box

1. I confirm that I am a current PhD student, who is starting to teach at HE level in the UK in the 2021-22 academic year and am interested in an academic career in the future.	☐
2. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily	☐
3. I understand that my participation is voluntary and that I am free to withdraw at any time during my participation in this study and within six weeks after I took part in the study, without giving any reason. If I withdraw within six weeks of taking part in the study my data will be removed.	☐
4. I understand that any information given by me may be used in future reports, academic articles, publications or presentations by the researcher/s, but my personal information will not be included and all reasonable steps will be taken to protect the anonymity of the participants involved in this project.	☐
5. I understand that my name/my organisation's name will not appear in any reports, articles or presentation without my consent.	☐
6. I understand that any interviews will be audio-recorded and transcribed and that data will be protected on encrypted devices and kept secure.	☐
7. I understand that data will be kept according to University guidelines for a minimum of 10 years after the end of the study.	☐
8. I agree to take part in the above study.	☐

_____

_____   _____

Name of Participant   Date   Signature

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my

ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of Researcher /person taking the consent_____ Date _____ Day/month/year

One copy of this form will be given to the participant and the original kept in the files of the researcher at Lancaster University

Appendix 3: First round interview questions

Interview schedule – first round interviews

For non-Hull participants: please can you confirm which University you are a student / teacher at?

A1. Can you start by telling me about your background in terms of your own education and your teaching experience?

A2. What are your reasons for starting to teach?

B1. What have been your major sources of information about teaching at HE level?*

      a. Have you undertaken any training or development for your teaching?

B2. What makes a teacher effective? *Can you give me any examples from being a student yourself or from observing others*

B3. To what extent do you feel that your teaching will be effective?

      a. How will you know if your teaching is effective?

B4. What can strengthen your capability to teach effectively?

B5. What can weaken your capability to teach effectively?

B6. If I asked you to rate your confidence in teaching on a scale of 1-10, 1 being not at all confident, 10 being completely confident, what number would you select?**

B7. Can you tell me the reasons you selected this number?**

B8. What are the areas of your teaching that you feel are strengths (areas of high confidence)?**

B9. What do you think will have the most powerful influence on your confidence as a teacher?**

Additional questions for the first round interviews:

C1. What did you think of your scores from the self-efficacy survey?

C2. Which areas or activities do you feel least confident in / wish to develop most?

C3. What are your feelings about starting your teaching?

C4. How well do you think you will teach your subject?

Plus questions exploring areas they have scored themselves low on / have most experience of from the survey scale and questions exploring areas of interest / relevance from observation of teaching.

Text in red = questions added after the first 7 interviews

*Adapted from Mills, N.A. & Allen, H. (2007) Teacher self-efficacy of Graduate Teaching Assistants of French, in Siskin, H.J. (ed) *From thought to action: exploring beliefs and outcomes in the Foreign Language Program*
**Adapted from Morris, D.B. & Usher, E.L (2011) Developing teaching self-efficacy in research institutions: a study of award-winning professors *Contemporary Educational Psychology* 36:232-245

Appendix 4: Second round interview questions

Interview schedule – second round interviews

1A How much teaching did you complete this trimester?

2A How do you feel just before you started teaching?

3A How did you feel while you were teaching?*

1B Do you feel that your abilities as a teacher have developed this trimester/year? In what ways?

1B1 Which areas or activities do you feel you have developed the most?

1B2 What influenced this development?

2B What types of feedback have you received from others about your teaching?* How did that make you feel?

3B Can you tell me about any people who have provided you encouragement and/or strategies for over-coming obstacles in teaching?*

4B Are you influenced by others in your teaching? If so, who and how?*

5B Have you observed others' teaching?

6B Have you completed any teaching-related professional development this trimester?

7B What did you think of your scores from the self-efficacy survey? How do they compare to the start of the trimester?

1C What do you think makes a PGR teacher effective?

2C To what extent do you feel that your teaching is effective?

2C1 What can strengthen/weaken your capability to teach effectively?

3C What are the areas of your teaching that you feel are strengths (areas of high confidence)?**

4C If I asked you to rate your confidence in teaching on a scale of 1-10, 1 being not at all confident, 10 being completely confident, what number would you select?**
4C1 Can you tell me the reasons you selected this number?**

5C What do you think has had the most powerful influence on your confidence as a teacher?**

*Adapted from Mills, N.A. & Allen, H. (2007) Teacher self-efficacy of Graduate Teaching Assistants of French, in Siskin, H.J. (ed) *From thought to action: exploring beliefs and outcomes in the Foreign Language Program*
**Adapted from Morris, D.B. & Usher, E.L (2011) Developing teaching self-efficacy in research institutions: a study of award-winning professors *Contemporary Educational Psychology* 36:232-245