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University of Southampton

Faculty of Social Science

School of Education

The Teaching and Learning of Social Research Methods Online

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by

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Thesis for the degree of Doctor of Philosophy

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University of Southampton

Abstract

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Social research methods (SRM) enable social scientists to undertake research. These methods, along with research design, include quantitative, qualitative, and mixed methods, research ethics and data interpretation. In the UK, advanced SRM training is funded primarily through the Economic and Social Research Council (ESRC), with the aims of building research capacity and facilitating methodological innovation. The teaching and learning of SRM is therefore of strategic importance, yet it has often been overlooked. This research, funded by the ESRC, formed part of a wider pedagogy of methodological learning project which aimed to address this gap by better understanding the pedagogical demands of teaching SRM, and how those with more advanced methodological knowhow communicate their knowledge in ways that allow others to understand and make use of it. This study was concerned with these questions in the online context, and additionally sought to understand the roles played by digital technologies. There is limited literature in relation to these questions, particularly in the UK context.

This research focused on two UK case studies of online SRM courses: an entirely online, asynchronous quantitative methods short course run by a private company; and a university master's level introductory SRM course, offered as a hybrid (place-based and online) or as online-only. Case study findings were generated from an analysis of course documents and forum posts, observations, semi-structured interviews and conversations with teachers, learners, and other stakeholders. Interviews included document-stimulated reflection. In addition, seven online SRM teachers, who taught a range of methods in different formats were interviewed. Fieldwork took place prior to the COVID-19 pandemic (2017 -2019) when the teaching of SRM online was less common. The research drew on the concepts of Pedagogic Content Knowledge (PCK) and Pedagogical Technological Content Knowledge (TPCK), and the conceptual-empirical typology of social science research methods pedagogy (the typology).

Building on what is already known about the challenges of teaching and learning SRM, the online dimension brings additional challenges, particularly when teacher and students are temporally and physically separated. This influences the ways in which teachers plan and teach SRM online. Planning becomes the focus of teacher activity, often becoming a group activity involving online education support staff in which pedagogic decision-making may be distributed. This runs counter to the TPCK framework and the typology. SRM online pedagogy can be characterised as the combination of teachers' knowledge of the subject, the technological support available to teachers, and online support staff's knowledge of the technologies and how these can support teachers' SRM pedagogy. The concept of PCK is helpful in understanding how teachers respond to the challenges of teaching SRM online, with teachers (starting to) transform their pedagogy: how they plan to teach; the content they will teach; how they teach in-situ; and the activities they get students to do. Change involves teachers letting go of the ways they taught (and were taught) in place-based classrooms and embracing the online space and being supported in learning through experience. The digital technologies of the online teaching environment can support SRM teachers' pedagogic goals by: distributing content; connecting students with each other, the teacher and content; providing students with a sandpit practice environment and collaboration opportunities; and providing a means by which teachers can provide students with immediate feedback on their learning.

Online SRM teaching presents opportunities for teaching innovation and the further development of an SRM pedagogic culture. However, to realise these opportunities will require investment by teachers in reflecting on and evaluation of their online teaching experiences, and by institutions in digital learning support staff, and a pushing back against the deficit narrative that casts online SRM teaching as of secondary value to place-based teaching. Further research is needed to provide a wider range of exemplars, to explore in more detail the planning of online SRM courses, and to understand how teachers and learners make use of the functionality and affordances of digital technologies in support of their teaching and learning.

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Research Thesis: Declaration of Authorship

Print name: Deborah Louise Collins

Title of thesis: The Teaching and Learning of Social Research Methods Online

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

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Definitions and Abbreviations

AoIR.....	Association of Internet Researchers
ASRM.....	Advanced Social Research Methods
ATI.....	Advanced Training Initiative
BERA.....	British Educational Research Association
CDT.....	Centres for Doctoral Training
DTCs.....	Doctoral Training Centre
DTPs.....	Doctoral Training Partnerships
ESRC.....	Economic and Social Research Council
HE.....	Higher Education
HEFCE.....	Higher Education Funding Council for England
HEIs.....	Higher Education Institutes
HESA.....	Higher Education Statistics Authority
JISC.....	Joint Information Systems Committee
LMS.....	Learning Management System
MOOC.....	Massive Open Online Course
MoPRA.....	Model of Pedagogic Action and Reasoning
NCRM.....	National Centre for Research Methods
NSS.....	National Student Survey
OfS.....	Office for Students
PCK.....	Pedagogic Content Knowledge
PCKing.....	Pedagogic Content Knowing
SRA.....	Social Research Association
SRM.....	Social Research Methods
TEF.....	Teaching Excellence Framework
TPCK.....	Technological Pedagogical Content Knowledge
VLE.....	Virtual Learning Environment
UK.....	United Kingdom

Definitions and Abbreviations

UKRI United Kingdom Research and Innovation

Chapter 1 Introduction

1.1 The origins of this inquiry

My research, funded by the United Kingdom (UK) Economic and Social Research Council (ESRC), formed part of a wider ESRC-funded National Centre for Research Methods (NCRM) research project. That project explored the pedagogy of methodological learning within higher education (HE) to better understand:

- the pedagogical demands of teaching advanced social science research methods, exploring:
 - features of specialist pedagogical content knowledge (Shulman, 1986) associated with advanced social science research methods;
 - aspects of innovation in teaching and learning approaches;
 - the relationships between concepts, skills, epistemological position and outcomes; and
- how those with advanced methodological skill communicate their knowledge of research methods in ways that allow others to make sense of this knowledge and use it.

My research formed a distinct strand of this NCRM project, focusing on the teaching and learning of social research methods (SRM) in an online environment. Such an online environment could be designed to only allow [synchronous](#) communication, or it might also or only include [asynchronous](#) communication based on ‘the digital technologies used to store and retrieve messages’ and for real-time communication (Andrews and Haythornthwaite, 2007, p. p12).

In this chapter, I consider the context in which online SRM teaching and learning is taking place, looking at the policy landscape, online technology and education, and my connection to the research topic. As Williams’ (2009) notes, to understand pedagogy we need to understand the context – social, cultural, historical and political – in which it operates. To this, I would add we need to understand the technological landscape: the digital technologies being used by teachers and learners.

1.2 Social research methods training

Social research methods refer to a set of tools, techniques and decisions that allow researchers to understand the social world. These methods are underpinned by philosophical ideas about the nature of knowledge, measurement and social phenomena (Bryman, 2012). In learning

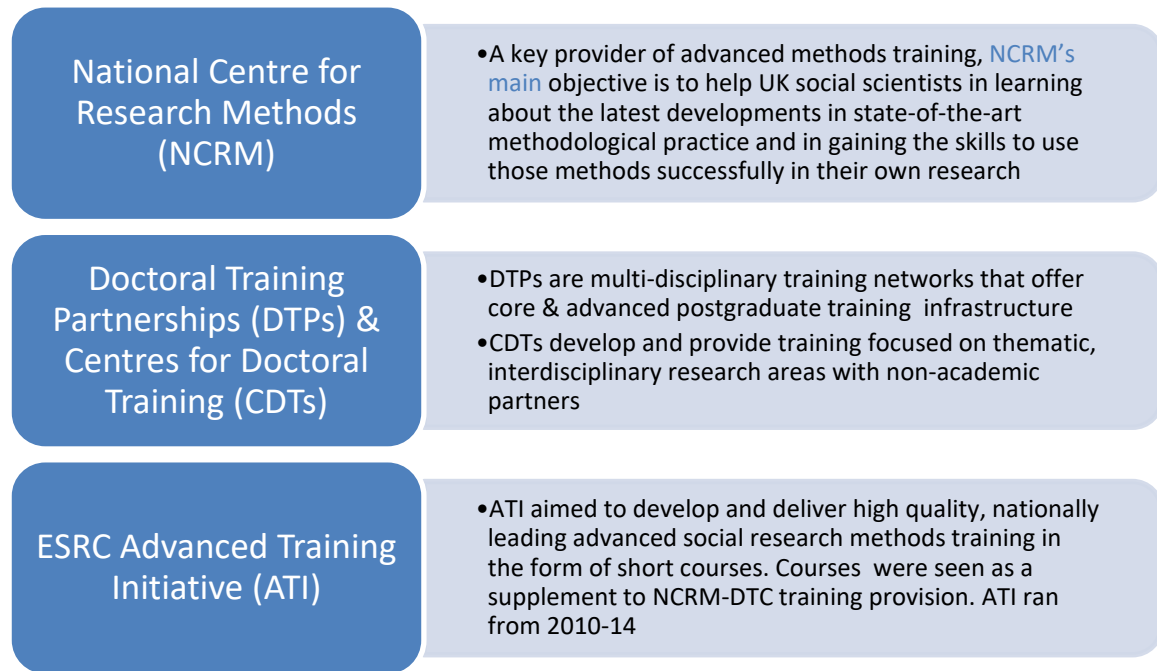
about SRM, students are introduced to important concepts, theories and debates, to the relationship between research questions and the methods employed to answer these questions, and to (some of) the research methods themselves. Students build on this learning over time as they progress through their academic studies and/or through their working lives, developing deeper knowledge and more sophisticated and specialist skills.

There are many different research methods, as illustrated in the NCRM research methods typology (Luff, Byatt and Martin, 2015) and Sage's Research Methods Online repository, which are invariably classified as being qualitative, quantitative or mixed methods. Much of the research methods training delivered at undergraduate and master's level in the UK is pitched at introductory and intermediate level, focussed on providing students with foundational research methods knowledge and skills (Durrant *et al.*, 2015). At doctoral level the ESRC has expected SRM training provision to equip students with 'basic and advanced quantitative and qualitative research skills' (Economic & Social Research Council, 2015a, p. 7). Updated ESRC postgraduate training and development guidelines currently refer to advanced training as 'specialist' (Economic & Social Research Council, 2022a, p. 8). The ESRC has also sought to encourage the SRM training providers it funds to experiment and innovate in both the content and delivery of training (Economic & Social Research Council, 2015a, 2022a).

1.2.1 Stakeholders

Funders, providers, and beneficiaries of advanced SRM training are important stakeholder groups that shape the teaching and learning landscape. In the UK, funding for intermediate and advanced SRM training comes primarily from government via UK Research Innovation (UKRI) to the ESRC and to Higher Education Institutes (HEIs). Indeed, the ESRC is the largest investor in social science research methods training in the UK. Its investments are closely aligned to its (and UKRI's) strategic objectives to build research capacity and facilitate methodological innovation, which it is hoped will see social science research continue to thrive and contribute to the UK's knowledge economy. Figure 1-1 depicts large ESRC investments in advanced research methods training over the past decade or so.

Figure 1-1 Examples of UK ESRC investments in social research methods training



Sources: NCRM - (NCRM website, retrieved 8/2/16); DTPs and CDTs - (Economic & Social Research Council, 2015b) and ESRC website, accessed 18/11/2023; ATI ESRC website, accessed 29/9/2018

Training providers include HEIs and ESRC-funded centres and initiatives, not-for-profit and private sector research organisations, and professional bodies, such as the Social Research Association (SRA) and Royal Statistical Society (RSS). Beneficiaries of research methods training include postgraduate students and employers – who benefit from having highly skilled social scientists in their workforces. In addition, taxpayers and the wider public benefit from the impacts of robust social research as individuals and collectively, economically, environmentally, socially and politically. Other important stakeholders include Advance HE (formerly the Higher Education Academy) and the Office for Students (OfS), who promote and encourage good teaching practices.

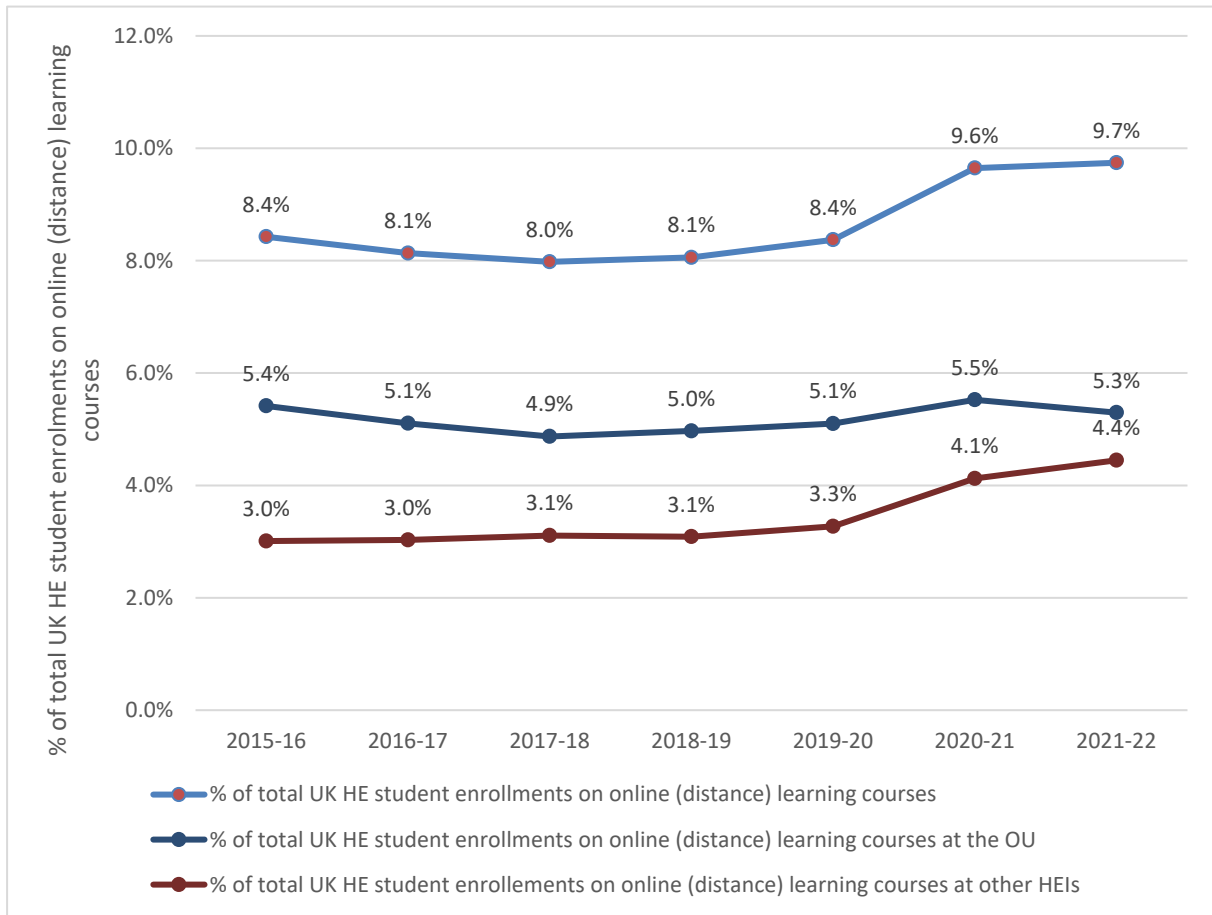
1.2.2 Provision

In the UK, SRM training provision takes different forms and involves different modes of delivery and course lengths. It includes taught master's courses and modules - some compulsory - and additional training for doctoral students, designed to support them in undertaking their own research for their dissertations. Provision also includes short, intensive training courses, typically lasting up to a few days, focused on a specific method, such as structural equation modelling or participatory methods. However, provision can also include courses lasting weeks, such as seasonal schools. Short courses are offered by a range of providers, including HEIs, private companies and professional bodies. Short courses form part of the intermediate and

advanced research methods training available to doctoral students in the UK. They are also available to research practitioners, commissioners, and research users, forming part of their continuing professional development.

When I started my doctoral research in 2015, place-based teaching in a physical classroom was the predominant mode of teaching SRM in the UK. There was some evidence to suggest this mode was preferred by UK-based SRM students and teachers at that time (Durrant *et al.*, 2015). Since then, the landscape has changed. Whilst there is no published data on UK enrolments on SRM courses, higher education enrolments on [online \(distance\)](#) courses in the UK are available from the Higher Education Statistics Authority (HESA). These data provide a proxy for online distance HEI course provision¹. Online distance HEI courses are designed for learners who are separated physically and temporally from each other and their teachers (Bozkurt, 2019). Figure 1-2 shows the proportion of UK HE student enrolments on online, distance learning courses between 2015-16 and 2021-2022. There are several things to note. Online, distance learning courses have and continue to occupy a small proportion of overall HE provision, but enrolments have increased. The marked increase in enrolments since 2020-21 reflects the impact of the COVID-19 pandemic. Traditionally, the Open University (OU) has been the main provider of distance HE provision in the UK, but since the COVID-19 pandemic, students enrolled on online distance courses at other HEIs has increased.

¹ <https://www.hesa.ac.uk/support/definitions/students>, accessed 20/08/2023.

Figure 1-2 Proportion of all UK enrolments on online (distance) learning courses 2015-2022²

The growth in distance online HE provision seen in the UK context, is mirrored in other countries, such as the USA (Seaman, Allen and Seaman, 2018), Australia (Latchem, 2018), and Germany (Zawacki-Richter, 2021). Whether the growth in distance online HE provision will continue is unclear, but online teaching and learning is likely to continue to be a feature of HE provision. Indeed, hybrid and flipped classroom courses that include both traditional classroom-based and online teaching and learning - not captured in the HESA statistics shown in Figure 1-2 – are increasingly seen as a standard part of many HEI’s approach to teaching delivery (e.g., Saboowala and Manghirmalani-Mishra, 2020; Bachner and O’Byrne, 2021; Guppy *et al.*, 2022).

Outside of HE, the provision of online SRM short courses has seen a marked increase since the COVID-19 pandemic, with no sign as yet to a return to the number of place-based courses seen prior to the pandemic. For example, prior to the COVID-19 pandemic the SRA offered no online SRM training courses, yet in August 2023 85% of its advertised courses were online³. This is in

² Source: Higher Education Statistics Authority <https://www.hesa.ac.uk/data-and-analysis/students/table-60>, accessed 20/08/2023.

³ Source: The Social Research Association <https://the-sra.org.uk/SRA/SRA/Training/Training.aspx>, accessed 23/08/2023

marked contrast to the UK situation NCRM noted in its SRM training consultation, published in 2015:

The development of online learning is changing the training environment, although as a complement to (rather than as a replacement for) face-to-face learning. There is perceived to be a clear need for high-quality online learning resources, although these require time, staff and financial resources to be developed to a sufficiently high standard. (Durrant *et al.*, 2015)

In addition to SRM courses, there has been a range of online resources designed to support the teaching and learning of research methods. These include:

- the Research Methods Knowledge Base (<http://www.socialresearchmethods.net/kb/>), a web-based research methods textbook that can be integrated into online or hybrid learning research methods course;
- the Online Research Methods Resources⁴ for teachers and learners, produced by the Indira Gandhi National Open University (IGNOU) and Manchester Metropolitan University with support from the British Council and the Central Queensland University; and
- Sage publishing's Research Methods Online (<https://methods.sagepub.com/>), a web-based repository of book chapters, articles, videos, search and discover tools, and methods map showing how different methods relate to each other.

1.3 The policy landscape

There are several sets of factors that shape the policy environment in which the teaching and learning of SRM takes place within the UK. These factors relate to debates around the impacts of marketisation on higher education and stakeholder concerns about social science research capacity and competitiveness. In the rest of this section these sets of factors are summarised.

1.3.1 Marketisation of higher education

The latter half of the twentieth century saw the steady marketisation of higher education across the world, which has gained pace and moral authority in the twenty first century. It has its origins in the rise of neo-liberal politics (Lynch, 2006) and is promoted by organisations such as the World Bank, the World Trade Organisation, International Monetary Fund and Organisation for

⁴ <http://www.celt.mmu.ac.uk/researchmethods/original%20docs/index.html>, accessed 12/06/2017 but no longer available

Economic Cooperation and Development (Henry *et al.*, 2001). Against a backdrop of globalisation, privatisation, and deregulation of public policy many countries look to higher education to provide the skills and knowledge to ensure the global competitiveness of their economies (Gourlay and Stevenson, 2017). Students are framed, in policy terms, as fee paying consumers, who are buying a product or a service (Clarke, 2007; Brown, 2011). The creation of the UK OfS in 2018, with its value for money objective (Office for Students, 2019), speaks to this market-focused notion of higher education. Debates about the impact of marketisation on higher education teaching and learning cohere around three strands:

- a shift in focus from education as a social good to one that serves the needs of businesses, employers, and investors (Massy, 2004; McGettigan, 2013; Radice, 2013)
- an increasing focus on measuring impact and quality and on how these measures can come to define the value and worth of institutional and individual activity (Lynch, 2006; Bedggood and Donovan, 2012);
- increasing pressures brought to bear on individuals (staff and students) to perform and be continually assessed (Ball, 2003; Lynch, 2006), with teachers increasingly feeling accountable to their institutions ahead of their students (Tomlinson and Watermeyer, 2022).

The introduction of the Teaching Excellence Framework (TEF) in England⁵ in 2017 has contributed to the scrutiny of teaching in higher education, with its focus on recognising and rewarding high quality teaching in HEIs (Department for Business Innovation & Skills, 2015). Next, I consider UK social science research capacity.

1.3.2 UK social science research capacity

The UK's social science quantitative skills capacity has been of concern for over fifty years (McVie *et al.*, 2008). The ESRC's (1987) Horizons and Opportunities report and subsequent reviews by Skinner (1999), Rendall (2003), Williams, Collett and Rice (2004), HEFCE (2005) and Mills *et al.* (2006) highlighted industry concerns over a social science quantitative skills deficit and the risks this posed to the UK's knowledge economy. The Higher Education Funding Council for England (HEFCE) noted that there was a shortage of skilled quantitative methods teachers within academia and that the subject had been 'marginalised' within university departments despite there being 'increasing demand' for quantitative social science skills (HEFCE, 2013, p. 3). However, the nature of the quantitative skills gap varied across the social sciences, with

⁵ Universities and colleges in Wales, Scotland and Northern Ireland were also able to take part.

some disciplines, such as economics and psychology, having stronger teaching and content traditions than others, such as sociology and education (Moore *et al.*, 2007).

The Q-Step undergraduate programme was designed to promote a step-change in the teaching and learning of quantitative research methods within the social sciences. Q-Step ran from 2013/14 until 2021 and was funded by the Nuffield Foundation, the ESRC and HEFCE to address ‘market failure to attract students and teachers into quantitative social science training’ by improving the ‘UK’s longstanding weakness’ in quantitative skills (Nuffield Foundation, HEFCE and ESRC, no date, p. 2). A feature of the Q-Step programme was its focus on supporting and developing approaches to the teaching and learning of SRM. These approaches included teaching with and through data to support students to develop an understanding of the links between theory and practice, and work placements that involved students applying their learning to real-world projects. An independent evaluation of the Q-Step programme concluded that it had led to ‘measurable improvement in the teaching capacity’ of quantitative methods within participating institutions (Rosemberg *et al.*, 2022, p. 10). The authors noted that institutional investment in teaching and learning resources had been important to Q-Step’s success. Improvements and investment in quantitative methods teaching has also fed into the teaching of more advanced methods, ‘increasing the capabilities of institutions to train’ postgraduate students (Rosemberg *et al.*, 2022, p. 63).

Whilst concerns have been raised about the quantitative methods skills of social science students, this is by no means the only concern. The growth in interdisciplinary research into complex issues such as climate change, and health and social care (Economic & Social Research Council, 2022b), and in mixed methods research (Palinkas, Mendon and Hamilton, 2019; Wasti *et al.*, 2022), has prompted research funders to focus policy initiatives on developing capacity and supporting innovation across a range of research methods. Moreover, the ESRC has recently announced its vision for supporting the development of data-driven research skills across the career stage (Economic & Social Research Council, 2022c) and to revamping doctoral training in the social sciences (Economic & Social Research Council, 2021). There is also recognition among doctoral training providers, doctoral students and graduates, and employers that training in core research methods, both qualitative and quantitative, is still important alongside ‘more cutting-edge methods’ (Tazzyman *et al.*, 2021, p. 6).

1.4 Digital technology, education and SRM

There are a wide range of terms used to describe digital technology-mediated teaching and learning. These include eLearning, technology-enhanced learning, online learning, hybrid (blended) learning, m-learning and MOOCs. The definitions of some of these terms are varied (Moore, Dickson-Deane

and Galyen, 2011) and contentious, reflecting the pace of technological change (Lowenthal and Wilson, 2010; Moore, Dickson-Deane and Galyen, 2011) and the aspirations and values of those individuals and organisations promoting their use, including the education technology industry. The term eLearning, for example, is used in different ways (Guri-Rosenblit and Gros, 2011), referring to 'the use of various technological tools that are either Web-based, Web-distributed or Web-capable for the purposes of education' (Nichols, 2003, p. 2) and to an aspiration of what education and training can be (Cross, 2004); it is said to involve the use of digital technologies to increase access to education and to 'enhance and transform teaching and learning' (Bullen, 2014, p. n.p.).

Like the term eLearning, technology-enhanced learning or TEL (Kirkwood and Price, 2014), was used as a technical description of 'any online facility or system that directly supports learning and teaching' (Walker *et al.*, 2016, p. 1), 'enhancing learning, teaching and assessment through the use of technology' (HEFCE, 2009, p. 1), but also as a way to convey a set of aspirations. The term technology-enhanced learning implies that the learning experience of students is improved in 'quality, value or extent' (Kirkwood and Price, 2014, pp. 2–3) by the technology.

I have chosen to use the term online to describe SRM courses that involve teachers and students in using online, digital technologies to teach and learn SRM. This includes its use within place-based teaching and learning such as in hybrid delivery models. Such digital technologies include the semantic web (Berners-Lee, Hendler and Lassila, 2001), computer technology - devices and software applications, including mobile devices and Apps (Rock *et al.*, 2023), managed learning systems e.g., Learning Management System (LMS) and Virtual Learning Environment (VLE), multimedia platforms, social-media, video-conferencing platforms, artificial intelligence, and cloud computing. In this thesis I use the terms LMS and VLE interchangeably, reflecting how the industry uses these terms and the fact that they include similar functionality, e.g., forums and quiz authoring options (Pinner, 2014). Next, I consider the allure of digital technology for HE.

1.4.1 Policy aspirations for digital technology in higher education and SRM

In the education context, technology is often described in terms of its utility, and or transformative effect without regard to the ways in which technology and education interact – the sociomaterial (Fenwick, Edwards and Sawchuk, 2011). For example, policy makers and funders express their aspirations for what digital technology might deliver for higher education in terms of its potential to widen access to HE 'at reduced unit costs' (Barnett, 2014, p. 8). The education digital technology industry promotes the benefits and virtues of its products with evangelical claims about how they can transform teaching and learning. Such aspirations for online teaching and learning

have also been expressed in the context of SRM training specifically (Moore *et al.*, 2007; McVie *et al.*, 2008; Durrant *et al.*, 2015).

Policy makers and HEIs can be seduced by such claims, seeing technology as the vehicle by which their strategic objectives and aspirations can be achieved without thinking about what, how and why digital technology may be adopted and to what ends (Bayne, 2015). Without pedagogic purpose, technology can be a ‘fetishised and empty learning and teaching experience’ (Hughes, 2008, p. 438). Critical voices such as Cuban (2001), Selwyn (2003, 2007, 2017) and Cuban and Jandrić (2015) have warned that technology alone is unlikely to transform teaching and learning. Yet such claims abound and sit within the context of education technology being seen by venture capitalists as an investment opportunity, due to the growing market for companies offering a range of edtech services (Veletsianos and Moe, 2017).

1.5 My connection to the research topic

The advertisement for this doctoral research study caught my interest as I am a research practitioner and SRM trainer. What struck me, as I read the studentship advertisement and found out more about the research project, was that I was engaged in the teaching of research methods and yet had received very little training in teaching myself. (My training consisted of a two-day workshop, which I attended many years after having first started teaching). I was unfamiliar with the term pedagogy and was not consciously using any theoretical or conceptual framework to guide my teaching practice. Moreover, I was struck by my lack of experience in teaching or learning online. I wondered what teaching and learning SRM online would be like, what challenges would it present, and how teachers and learners responded to these challenges. This research project provided an opportunity to explore these issues within the context of the aims of this ESRC-funded research.

1.6 Structure of this thesis

This thesis is organised as follows. In chapter 2 I review the literature on the teaching and learning of SRM online, identifying gaps in our understanding and how my research seeks to address some of these. In Chapter 3 I set out my research questions and the rationale underpinning my choice of research design – case study - and research methods. I discuss the ethical issues that arose and my responses to them and explain my approach to data analysis and interpretation. In chapters 4 and 5 I introduce my two cases and present the features of each case that speak to my research questions. I introduce the additional teachers I spoke with who were teaching SRM online and describe their experiences in chapter 6. In chapter 7 I discuss the findings from my research and answer my research questions. Finally, in chapter 8 I

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consider the implications of my research findings, the limitations of my study, and potential directions for further research.

Chapter 2 Literature review

2.1 Introduction

There is a growing body of literature on the teaching and learning of SRM. Indeed, several literature reviews have summarised the state of pedagogical knowledge about the teaching and learning of SRM (Wagner, Garner and Kawulich, 2011; Earley, 2014; Kilburn, Nind and Wiles, 2014; Wagner, Kawulich and Garner, 2019; Nind and Katramadou, 2023), the latter two being systematic reviews published after my doctoral fieldwork had been completed. Taken together, these reviews highlight that there is a growing body of published knowledge, much of which comes from close-to-practice research, including teacher' reflections (e.g., Pushner, 2014; Howard and Brady, 2015; Earley, 2016; Ponnuswami and Harris, 2017; Ross and Call-Cummings, 2020). Wyse *et al* (2021, p. 1485) have defined close to practice research as research that 'focuses on issues defined by practitioners as relevant to their practice', involving collaboration between those with research and teaching expertise and experience.

Synthesising the findings from these reviews a picture of a SRM pedagogic landscape can be constructed in which:

- the teaching and learning of SRM is seen as challenging (e.g., Earley, 2014; Kilburn, Nind and Wiles, 2014; Bender and Hill, 2016; Gunn, 2017);
- a SRM pedagogic culture that was largely missing a decade or so previously (Wagner, Garner and Kawulich, 2011) has emerged (Nind and Katramadou, 2023); and
- there is an evident steady growth in resources to support the teaching of SRM, with papers describing student-centred (e.g., Simon, 2014; Bell, 2016; Franco, 2016; Slayton and Samkian, 2017; Andrzejewski and Carson Baggett, 2020; Ross and Call-Cummings, 2020), active (e.g., Delyser, 2008; Hsiung, 2008; Aguado, 2009; Smith and Martinez-Moyano, 2012; Gönül and Solano, 2013; Dyrhauge, 2014; Hazzan and Nutov, 2014; Corti and Van den Eynden, 2015; Hesse-Biber, 2015; Bowers, 2017; Boström, 2019) and experiential (e.g., Raddon, Nault and Scott, 2008; Benton *et al.*, 2012; Dousay, Igoche and Branch, 2012; DeLyser *et al.*, 2013; Chatfield *et al.*, 2014; Lapum and Hume, 2015; Bartels and Wagenaar, 2018; Call-Cummings, Hauber-Özer and Dazzo, 2019; Johnson, Murphy and Griffiths, 2019) ways of teaching and learning SRM.

Only Nind and Katramadou's (2023) review, however, included (a small) literature on the teaching and learning of SRM online. The authors noted an increase in research studies that were concerned with the effectiveness of teaching SRM online. However, there was no specific discussion of teaching and learning SRM online addressing:

- 1) the ways in which SRM are taught online;
- 2) the challenges SRM teachers and learners encounter in the online environment;
- 3) whether or in what ways the teaching of SRM may differ online to place-based teaching;
and
- 4) the role of digital technologies in teaching and learning SRM online.

These questions were the focus of my literature review. The literature review enabled me to identify gaps in the knowledge-base and to develop my research questions and a research design that would contribute to knowledge. I considered this literature through the lenses of two conceptual ideas: pedagogic content knowledge (Shulman, 1986, 1987) and technological pedagogical content knowledge (Mishra and Koehler, 2006; Koehler, Mishra and Yahya, 2007). I start this chapter by discussing these ideas and their utility to my research.

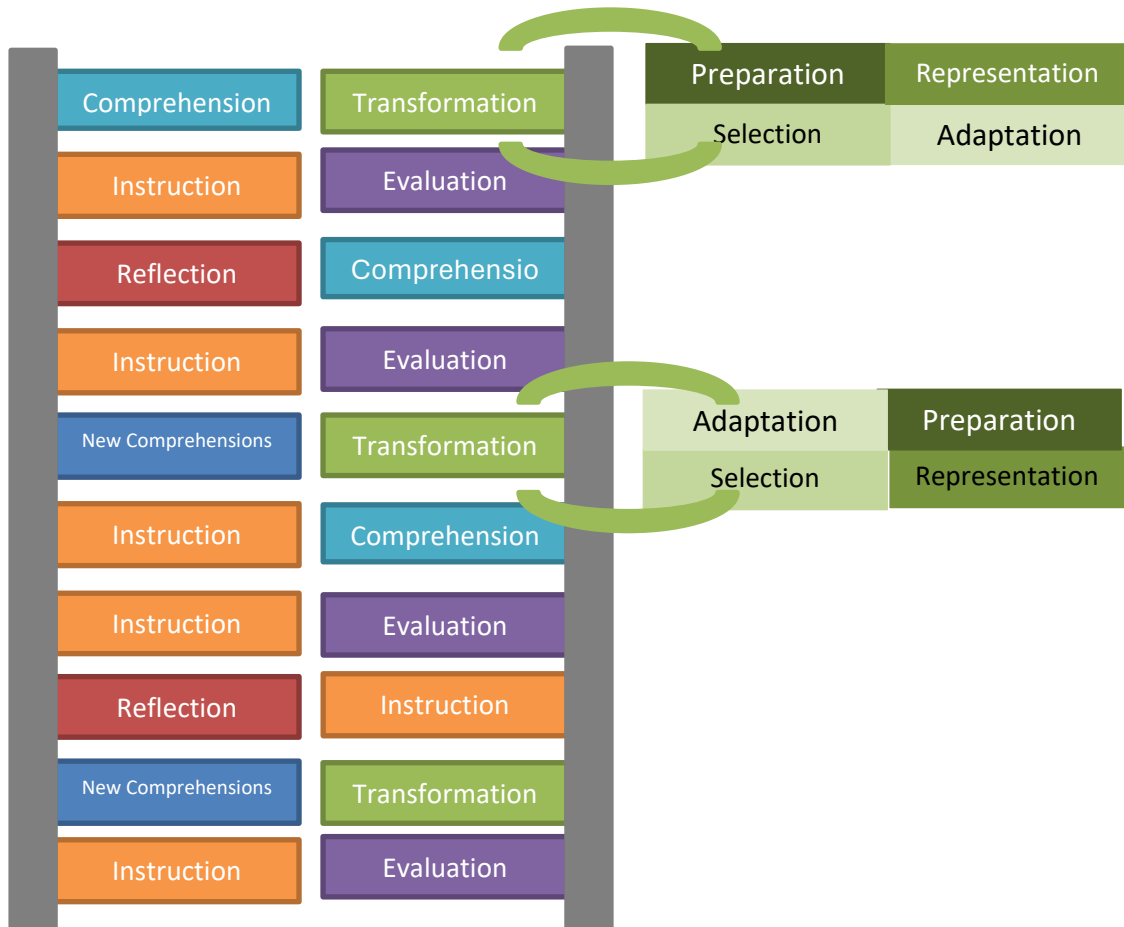
In this chapter I go on to describe my literature review methodology before considering what the literature tells us about the aforementioned four points. I reflect on the findings of my literature review and the gaps in our knowledge and understanding and propose the research questions that I set out to address in my doctoral research.

2.2 Pedagogical Content Knowledge and its relevance to the teaching of SRM online

In proposing pedagogic content knowledge (PCK) Shulman (1986) was challenging the privileging of knowledge about how to teach, which was pervasive in US education policy of the time. The desire for teaching best practices failed, in Shulman's view, to acknowledge the importance of teachers' content knowledge. In proposing PCK, Shulman sought to highlight 'the particular form of content knowledge that embodies the aspects of content most germane to its teachability' (Shulman, 1986, p. 9). PCK includes teachers knowing how to transform their knowledge of the subject in ways that make it 'comprehensible' (Shulman, 1986, p. 9) and tap into the 'motivations' of their students (p. 16). It involves teachers in planning to teach – what Shulman (1987, p. 16) calls 'pedagogical reasoning', see Figure 2-1. This planning may include some combination of the following activities: deciding what to teach (comprehension) and its transformation into knowledge that is knowable to students; what the teacher does in the classroom to orchestrate learning (instruction) and to check on students' understanding and learning (evaluation); and teacher reflection – in the moment and afterward – on their plans and teaching in-situ. It also may include what Shulman (1987, p. 19) refers to as 'new comprehensions', which may arise from planning, teaching and reflection on teaching. Teachers must take active steps if new understandings are to enter their teaching 'repertoire[s]',

such as writing about and discussing their teaching experiences (Shulman, 1987, p. 19). Shulman noted that not all these activities may take place or involve equal attention.

Figure 2-1 Representation of Shulman’s Model of Pedagogical Reasoning and Action (MoPRA)



Source: My diagram based on Shulman’s (1987) description of the Model of Pedagogical Action and Reasoning

For Shulman (1987), the transformation of a teacher’s content knowledge was important. It involved teachers in some combination of: preparation of the material to be taught; representation of concepts and ideas that make them accessible to students; the selection of ways of teaching the content; and the adaptation of teacher’s knowledge to students. In thinking about these transformation steps, Shulman (1987, p. 17) argues that teachers end up with a teaching ‘plan’.

Since Shulman proposed PCK, the concept has been widely adopted, being particularly influential in research that has informed the teaching of mathematics (e.g., Marks, 1990; Hill, Loewenberg Ball and Chilling, 2008; Bednarz and Proulx, 2009; Depaepe, Verschaffel and Kelchtermans, 2013; Maryono et al., 2017; Sakaria, Bin Maat and Bin Mohd Matore, 2023) and science (e.g., Gess-Newsome, 1999; van Dijk and Kattmann, 2007; Abell et al., 2009; Nilsson and Vikström, 2015; Alonzo, Berry and Nilsson, 2019; Nilsson, 2022). However, Shulman’s

definition of PCK has been criticised for being too narrow, focusing on instructional strategies and representations, and students' (mis)conceptions. Critics have argued that it should include other domains, such as curriculum knowledge (Grossman, Wilson and Shulman, 1989), beliefs (Friedrichsen, Van Driel and Abell, 2011), emotions (Zembylas, 2007), the teaching environment (Cochran, DeRuiter and King, 1993) and knowledge of technology (Mishra and Koehler, 2006). There have been criticisms that Shulman's focus on what expert teaching looks like fails to recognise the normative processes that give rise to it (Ball, Thames and Phelps, 2008; Van Driel and Berry, 2012), which are culturally determined (Tirosh *et al.*, 2011) and shape how PCK is researched and interpreted. Yet Shulman (1987, p. 13) himself cautioned against ignoring the reasons why teachers teach what they teach: what he referred to as the 'normative' aspect of teaching decision-making.

Ball, Thames and Phelps (2008) noted the limited evidence to indicate that PCK is a distinct form of teacher's knowledge. Gess-Newsome (1999, p. 10) has suggested that the reading of the research evidence on PCK depends on researchers' conception of it- as 'integrative' or 'transformative'. In the integrative model, PCK is the result of the blending of knowledge domains e.g., pedagogy, content, context, in which these domains can be readily distinguished. In contrast, the transformative model sees PCK as a 'new' form of knowledge that teachers rely on for teaching; the knowledge domains are no longer easily distinguishable.

Whilst Shulman initially proposed that PCK would be learned and applied as part of teacher training, other scholars have articulated it as being dynamic (e.g., Lee and Luft, 2008; Oleson and Hora, 2014) – of 'knowing when to act' (Depaepe, Verschaffel and Kelchtermans, 2013, p. 13). Cochran, DeRuiter and King (1993, p. 16) proposed that a teacher's PCK develops over time, from 'multiple opportunities to teach, and to observe and to reflect on one's own teaching and that of others' – what they referred to as pedagogic content knowing (PCKing). The dynamic nature of PCK is echoed by Seymour and Lehrer (2006) who propose that a classroom feedback loop develops in which teachers' teaching responds to their students and students respond to the teacher. This feedback loop has been noted in the teaching of SRM, where the relevance of the subject to students can shape the ways in which it is taught (Hammersley, 2012).

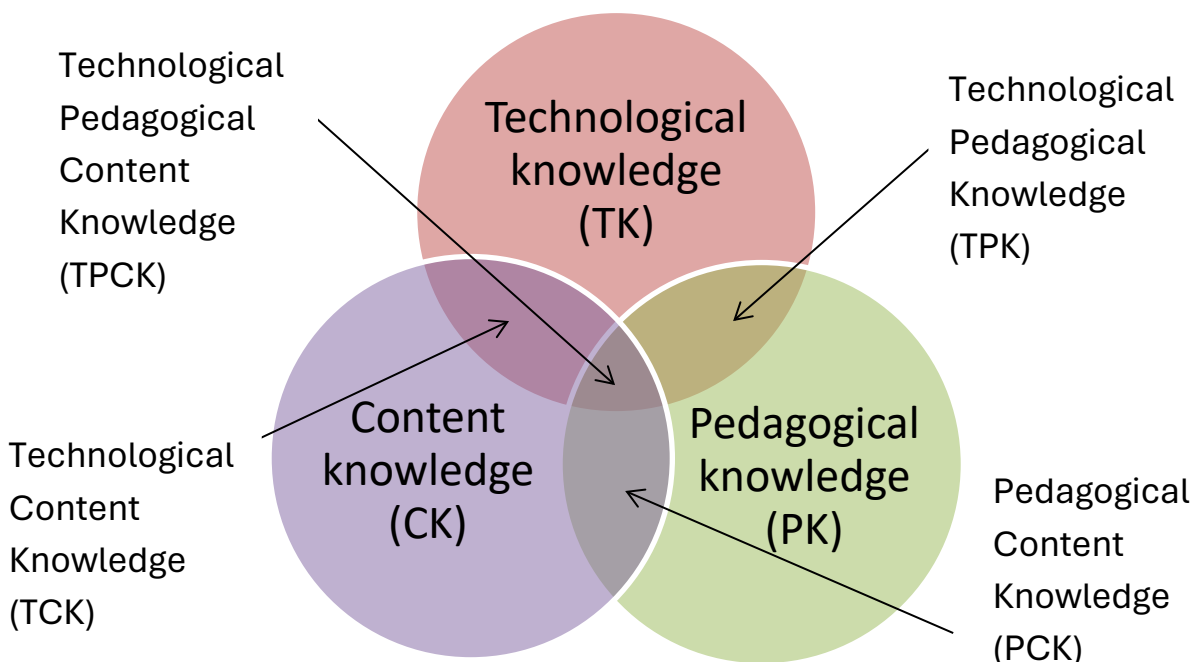
Researchers have focused on the subject-specific nature of PCK, such as to mathematics (e.g., Lehrer and Franke, 1992; Hadfield *et al.*, 1998) or generic PCK (Fernández-Balboa and Stiehl, 1995), the latter focusing on higher education teachers. Nind (2020) has argued that teaching SRM involves both generic and specific PCK. SRM generic PCK, she found, includes classroom organisation, pacing and chunking material, whilst SRM specific PCK is characterised by teaching 'with, through and about data' (Nind, 2020, p. 10). However, much of the research evidence that Nind drew upon to identify SRM-specific PCK was based on research with place-

based teachers (Kilburn, Nind and Wiles, 2014; Lewthwaite and Nind, 2016; Nind and Lewthwaite, 2018a). Whether the teaching of SRM online involves the use of data in these ways is something my review of the literature considers.

2.2.1 Technological Pedagogical Content Knowledge (TPCK)

Given my interest in the teaching of SRM online, it is worth considering Mishra and Koehler's (2006) adaption of PCK to include a technological component. They argue that in making decisions to use technologies in their classrooms, teachers need to develop 'a complex situated form of knowledge' – TPCK (Mishra and Koehler, 2006, p. 1017). In their model, reproduced in Figure 2-2, they proposed that when technology interacts with teachers' content and pedagogical knowledge, it results in four technology-specific forms of knowledge that teachers need to develop to become 'intelligent users of technology for pedagogy' (Mishra and Koehler, 2006, p. 1032). This knowledge would support, they argue, the 'full potential of technology for teaching specific subject matter' to be realised (p. 1032).

Figure 2-2 Mishra and Koehler's Technological Pedagogical Content Knowledge model



Source: (Mishra and Koehler, 2006, p. 1025)

According to Mishra and Koehler, technological knowledge is the practical knowledge of how to operate specific technologies that the teacher plans to use in teaching. TCK involves understanding how technology can transform students' learning of the subject. TPK, in contrast, involves knowing which technologies and functions can be used in teaching and how their use might support pedagogic goals. The synthesis of these forms of knowledge results in TPCK. This knowledge enables teachers to plan and use the affordances of specific technological

functionality in their teaching to address students' learning challenges. The relationship between technology, content and pedagogy is seen as 'dynamic' (Mishra and Koehler, 2006, p. 1030), in which choices in one domain impact on choices in the others. This dynamic relationship can result in teachers reflecting on their long-held pedagogic practises and beliefs (Peruski and Mishra, 2004).

Like PCK, the concept of TPCK has been widely adopted (e.g., Grandgenett, 2008; Harris, 2008; Hammond and Manfra, 2009; Hardy, 2010; Zainal, 2012; Kennedy, 2015; van Wyk, 2017; Kraglund-Gauthier and Moseley, 2019; Helppolainen and Aksela, 2020), including in the context of higher education (e.g., Benson and Ward, 2013; De Rossi, 2018). However, its application to the teaching of SRM has been limited (Snelson, 2019; Class, 2024). Angeli and Valanides (2009) criticise the model for a lack of conceptual clarity, with the domains that combine to produce TPCK being seen as indistinct. They, along with Unwin (2007), also criticise it for not explaining how the affordances of technologies can transform content and pedagogy. This may be because the model does not capture the underlying factors mediating technology choices to support learning or include learners (Unwin, 2007). Moreover, Archambault and Barnett (2010) have questioned the extent to which the model helps researchers predict outcomes or reveal new knowledge. Graham (2011, p. 1956) suggests that one reason for this is that technology is poorly defined, with Mishra and Koehler including 'the pencil and chalkboard as well as newer digital technologies'.

Like Ball, Thames and Phelps (2008), who saw the value of PCK as a heuristic that provides a way in which to think about teacher knowledge, I consider TPCK may be a potentially useful heuristic when thinking about the teaching of SRM online.

2.3 Literature review process

I carried out an in-depth literature review via several steps. I initially searched bibliographic databases – DelphiS , Google Scholar, Scopus and Web of Science using:

- Terms that identified papers about research methods – qualitative, quantitative, mixed methods AND
- Terms that identified papers concerned with teaching and learning - teach* OR learn* AND
- Terms that identified papers concerned with teaching and learning online OR distance.

Following on from Wagner, Kawulich and Garner's (2011) review, I reviewed papers published since January 2008 in the English language, which discussed the teaching and learning of SRM online. This included hybrid and flipped classroom contexts, at undergraduate level or higher,

including professional development short courses. Papers concerned with doctoral supervision (e.g., Maor, Ensor and Fraser, 2016; van Wyk, 2017), or with specific online activities, such as assessment (e.g., Gönül and Solano, 2013) fell outside my scope of interest.

The initial search was undertaken in 2016. I conducted bibliographic mining to identify other potentially relevant texts. I set up publication alerts and continued to identify and review relevant literature throughout my research, updating my review findings. I also undertook web search engine searches to identify conferences, blogs, and other online materials of relevance.

In reviewing the literature, I was guided by the advice of Wallace and Wray (2016) to identify papers that were relevant to my questions for deep reading. I mapped their content, using the following themes:

- Methodology: nature of the evidence being presented;
- The type(s) of social research methods or skills being taught;
- The level of the course e.g., undergraduate, post-graduate;
- How the course was taught e.g., entirely online, hybrid;
- How SRM is being taught online;
- Challenges of teaching SRM online;
- Differences between teaching online and in place-based contexts;
- Technologies being used; and
- What the technologies used enable teachers and learners to do.

A residual category was used to capture any other potentially useful information.

2.4 The online SRM teaching and learning literature

Of the papers I identified that were of relevance to my research, listed in Table 2-1, most were published since 2016, including two that included summaries of the literature (Bender and Hill, 2016; Snelson, 2019). The majority describe the teaching of SRM online in north America, predominantly in the USA. I identified only one paper that discussed the teaching of SRM in the UK context (Peimani and Kamalipour, 2021), describing the move to teaching SRM online during the COVID-19 pandemic. UK research is a gap.

The literature is dominated by close-to-practice research (Wyse *et al.*, 2021), typically involving online SRM teacher reflections, in some cases incorporating feedback from students. In a few cases papers included student reflections, as articulated through teachers (Dinauer, 2012; Roulston *et al.*, 2018; Kalpokaite and Radivojevic, 2019; Kawulich and D'Alba, 2019), or as co-authors with teachers (Moore and Janzen, 2012; Snelson *et al.*, 2017). The predominance of

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teacher reflection is reflective of the nature of the wider corpus of literature on the teaching and learning of SRM (Wagner, Kawulich and Garner, 2019; Nind and Katramadou, 2023). More unusual was research concerned with the impact of a move to online teaching on SRM student performance (Campbell *et al.*, 2008; Schulze, 2009; Ni, 2013; Lu and Cavazos Vela, 2015; Tan and Hew, 2016; Goode *et al.*, 2018; Kalpokaite and Radivojevic, 2019).

Table 2-1 Papers discussing the teaching and learning of SRM online published since January 2008

Author(s)	Country	Nature of evidence being reported	Methods being taught	Level (discipline)	Mode
Bender and Hill, 2016	Multiple	Literature review	Qualitative	Undergraduate (Multi-disciplinary)	Online (synchronous and asynchronous)
Bourque and Bourdon, 2017	Canada	Close-to-practice (teacher reflection incorporating student feedback)	Qualitative	Postgraduate (multi-disciplinary)	Hybrid- place-based and online (asynchronous)
Campbell <i>et al</i> , 2008	UK	Close-to-practice (quasi-experimental)	Research methods	Postgraduate (Nursing)	Online (asynchronous)
Chilton <i>et al</i> , 2019	USA	Close-to-practice (teacher reflection incorporating student feedback)	Research methods	Postgraduate (Nursing)	Hybrid - place-based and online
Diana and Catone, 2018	Italy	Close-to-practice (teacher reflection)	Research methods	Undergraduate (Sociology)	Hybrid - place-based & online (synchronous and asynchronous)
Diana and Catone, 2016	Italy	Close-to-practice (teacher reflection incorporating student feedback)	Research methods	Undergraduate (Sociology)	Hybrid - place based and online (asynchronous)

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Author(s)	Country	Nature of evidence being reported	Methods being taught	Level (discipline)	Mode
Dinauer, 2012	USA	Close-to-practice (case study involving students)	Quantitative	Postgraduate (Management)	Hybrid, online (asynchronous), place-based and teleconference
Earley, 2016	USA	Close-to-practice (teacher reflection)	Qualitative	Post-graduate (multi-disciplinary)	Hybrid, flipped classroom - online (asynchronous) and place-based
Goode <i>et al</i> , 28	USA	Close-to-practice (quasi-experimental)	Quantitative	Undergraduate (Psychology)	Comparison of hybrid and place-based instruction. Design of hybrid course is not explicitly stated
Girod and Wojcikiewicz, 2009	USA	Unclear (causal comparative)	Research methods	Postgraduate (Education)	Online and place-based versions of same SRM course
Holtlander <i>et al</i> , 2012	Canada	Close-to-practice (teacher reflection incorporating student feedback)	Qualitative	Postgraduate (multi-disciplinary)	Online (asynchronous)

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Author(s)	Country	Nature of evidence being reported	Methods being taught	Level (discipline)	Mode
Hunter, Ortloff and Winkle-Wagner, 2014	USA	Close-to-practice (teacher reflection incorporating student feedback)	Qualitative	Postgraduate (multi-disciplinary)	Online (asynchronous) plus for some teachers, place-based sessions as part of a hybrid design
Hsiung, 2016	Canada	Close-to-practice (teacher reflection)	Qualitative	Undergraduate and postgraduate (multi-disciplinary)	Online (asynchronous)
Ivankova, 2010	USA	Close-to-practice (teacher reflection incorporating student feedback)	Mixed methods	Postgraduate (Human Studies)	Online (asynchronous)
Ivanvoka and Plano-Clark, 2018	USA	Close-to-practice (teacher reflection incorporating student feedback)	Mixed methods	Postgraduate (Education)	Place-based version and online (asynchronous and synchronous) version
Kalpokaite and Radivojevic, 2019	Multiple	Research (surveys of former students and ATLAS.ti instructors)	Qualitative	Mixed (multi-disciplinary)	Hybrid - place-based classroom and online
Kawulich and D'Alba, 2019	USA	Close-to-practice (research with students)	Qualitative	Postgraduate (not specified)	Hybrid - place-based classroom and Second Life (virtual world practice environment)

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Author(s)	Country	Nature of evidence being reported	Methods being taught	Level (discipline)	Mode
Lightner and Lightner-Laws, 2016	USA	Close-to-practice (student performance)	Quantitative	Postgraduate (Management)	Hybrid - Place-based and online (asynchronous and synchronous)
Lu and Cavazos Vela, 2015	USA	Close-to-practice (teacher reflection, student survey)	Research methods	Postgraduate (Education)	Hybrid, place-based and online
Miskovic and Lyutych, 2017	USA	Close-to-practice (teacher reflection incorporating student feedback)	Qualitative	Postgraduate (Education)	Online (asynchronous)s
Moore and Janzen, 2012	Canada	Close-to-practice (student-instructor reflection)	Qualitative	Postgraduate (Health)	Online (asynchronous)
Ni, 2013	USA	Close-to-practice (student performance records, student survey)	Research methods	Not specified (Business Administration)	Online (asynchronous) version and hybrid - place-based and online (asynchronous)
Peimani and Kamalipour,2021	UK	Close-to-practice (case study)	Research methods	Postgraduate (Geography)	Online (synchronous and asynchronous)
Rock <i>et al</i> , 2016	Australia	Close-to-practice (examples)	Quantitative	Not specified (Psychology)	Online – (synchronous and asynchronous)

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Author(s)	Country	Nature of evidence being reported	Methods being taught	Level (discipline)	Mode
Roulston <i>et al</i> , 2018	USA	Close-to-practice (case study)	Qualitative	Postgraduate (not specified)	Online (asynchronous, synchronous)
Roulston, DeMarrais and Paulus, 2017	USA	Close-to-practice (teacher reflection)	Qualitative	Postgraduate (not specified)	Online (synchronous and asynchronous)
Ryen, 2009	Multiple	Close-to-practice (teacher reflection incorporating student feedback)	Qualitative	Postgraduate (Sociology)	Hybrid - place based initially, then online, (asynchronous)
Saeed and Al Qunayeer, 2021	Malaysia	Close-to-practice (research)	Research methodology	Postgraduate (Languages & Linguistics)	Hybrid - place-based and online (asynchronous)
Secret, Ward and Newmark, 2019	USA	Close-to-practice (teacher reflection)	Research methods	Not specified (Social Work)	Online (synchronous and asynchronous)
Secret, Bryant and Cummings, 2017	USA	Close-to-practice (teacher reflection, incorporating and student feedback)	Research methods	Postgraduate (multi-disciplinary)	Online (asynchronous)
Schulze, 2009	South Africa	Research (formative evaluation)	Research methods	Postgraduate (Education)	Online (synchronous and asynchronous)

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Author(s)	Country	Nature of evidence being reported	Methods being taught	Level (discipline)	Mode
Snelson, 2019	Multiple	Literature review	Qualitative	Mixed (Multi-disciplinary)	Online (asynchronous, asynchronous and synchronous)
Snelson <i>et al</i> , 2017	USA	Close-to-practice (student-instructor duo ethnography)	Qualitative	Postgraduate (Multi-disciplinary)	Online (synchronous and asynchronous)
Tan and Hew, 2016	Hong Kong	Research (quasi-experimental)	Quantitative	Short course (inter-disciplinary)	Hybrid - flipped classroom - online (asynchronous) and place-based
Wu and Patel, 2016	Hong Kong	Close-to-practice	Mixed methods	Post-graduate (not specified)	Hybrid – place-based and online (asynchronous)
Zhou, 2018	USA	Close-to-practice (teacher reflection incorporating student feedback)	Research methods	Postgraduate (not specified)	Hybrid - place-based and online (asynchronous and synchronous)

2.4.1 What research methods are being taught and in what kinds of online environments?

The majority of the papers identified concern the teaching of qualitative methods online - including courses focused on ethnography (Kawulich and D’Alba, 2019) and qualitative data analysis (Bourque and Bourdon, 2017; Kalpokaite and Radivojevic, 2019), and research methods and methodology. The remainder focus on the teaching of quantitative methods (Dinauer, 2012; Lightner and Lightner-Laws, 2016; Rock *et al.*, 2016; Goode *et al.*, 2018), including questionnaire design (Tan and Hew, 2016), and the teaching of mixed methods (Ivankova, 2010; Wu and Patel, 2016; Ivankova and Plano-Clark, 2018).

Papers span the teaching and learning of SRM online across a range of disciplines (Business, Education, Geography, Health, Language and Linguistics, Management Science, Psychology, Social Work and Sociology) as well as inter-disciplinary settings, primarily at postgraduate level. However, papers also include the teaching of SRM to undergraduates (Bender and Hill, 2016; Diana and Catone, 2016, 2018; Hsiung, 2016; Goode *et al.*, 2018) and of SRM short courses (Tan and Hew, 2016; Wu and Patel, 2016).

The teaching of SRM in a hybrid context predominated the literature. Of the papers discussing SRM teaching and learning entirely online were those discussing its teaching asynchronously (Ivankova, 2010; Holtlander *et al.*, 2012; Moore and Janzen, 2012; Hunter, Ortloff and Winkle-Wagner, 2014; Miskovic and Lyutykh, 2017; Secret, Bryant and Cummings, 2017) and using a mix of online asynchronous and synchronous teaching (Schulze, 2009; Rock *et al.*, 2016; Roulston, DeMarrais and Paulus, 2017; Snelson *et al.*, 2017; Ivankova and Plano-Clark, 2018; Roulston *et al.*, 2018; Secret, Ward and Newmark, 2019; Snelson, 2019; Peimani and Kamalipour, 2021). There appear to be gaps in the literature about the teaching of SRM entirely synchronously online and the asynchronous online teaching of quantitative SRM. Online-only SRM courses including synchronous elements appear, with the exception of Schulze (2009), in the literature since 2016. This may reflect developments in and wider use of video-conferencing software and telecommunications infrastructure. However, this was not a systematic review and papers may have been missed due to the search terms selected.

2.4.2 How is SRM being taught online?

Discussion of how SRM is taught online and in hybrid contexts was variable, with some papers containing little or no detail. Of those that did contain information, some referred to teaching approaches, see Nind and Lewthwaite’s (2020) pedagogy of methodological learning typology, or to theories that guided their course design, either by name or through description enabling

inference of the approach. These approaches are discussed later in this section. When provided, descriptions of the ways teachers planned to teach online – their strategies (Nind and Lewthwaite, 2020), vary in level of detail, as does discussion of teachers' pedagogic reasoning underpinning their planning. Unsurprisingly, papers lack detail on what teachers do in their online classrooms, a point noted by Nind and Katramadou (2023) in their literature review. There are, however, details of activities students were asked to complete. These include individual and group activities that involve students in reading, writing, talking and - in the case of Ivanvoka (2010) – drawing, to develop their understanding of SRM.

Active learning

Active learning involves teachers getting their students 'actively involved' in learning (Keyser, 2000, p. 35) through exercises that require methodological thinking and practice (Lewthwaite and Nind, 2017). This makes it a popular approach among place-based SRM teachers (Earley, 2014; Kilburn, Nind and Wiles, 2014; Lewthwaite and Nind, 2016; Nind and Katramadou, 2023). In the online literature, active learning principles are similarly prevalent, being used to inform the design of qualitative (Moore and Janzen, 2012; Hunter, Ortloff and Winkle-Wagner, 2014; Hsiung, 2016; Bourque and Bourdon, 2017; Kalpokaite and Radivojevic, 2019), quantitative (Lightner and Lightner-Laws, 2016), mixed methods (Wu and Patel, 2016; Ivankova and Plano-Clark, 2018) and research methods courses (Diana and Catone, 2016, 2018; Zhou, 2018; Saeed and Al Qunayeer, 2021).

Online SRM active learning involves teachers planning activities that support students putting theory into practice (Ivankova, 2010; Moore and Janzen, 2012; Hsiung, 2016; Tan and Hew, 2016; Diana and Catone, 2018; Zhou, 2018). It could also involve planning opportunities for students to collect their own data qualitatively (Miskovic and Lyutykh, 2017), through immersion in a virtual world (Snelson *et al.*, 2017; Kawulich and D'Alba, 2019) or quantitatively through an online survey (Chilton *et al.*, 2019), but such immersion in data collection appears rare. Alternatively, teachers plan activities involving a) the use of existing quantitative data sets (Diana and Catone, 2018; Zhou, 2018), b) existing qualitative datasets that include interview transcripts (Bender and Hill, 2016; Hsiung, 2016), and c) sample projects (Kalpokaite and Radivojevic, 2019). However, a) features in hybrid courses and it is unclear whether these activities took place online. Earley (2016) and Goode *et al.* (2018) adopt a flipped classroom approach, in which the online, instructional content supported and created space for active learning place-based individual and group activities. In summary, there are limited examples of online SRM teachers teaching with and through data. Online teaching represented in this body of literature involves teaching about data, involving students in review, critique, and reflection activities, individually and in small groups.

Active learning is combined with experiential learning (Holtlander et al., 2012; Diana and Catone, 2016; Hsiung, 2016) in teaching SRM online. Here authentic activities provide opportunities for learners to ‘observe the direct implications of their actions’, constructing knowledge that they could apply to ‘real-world situation’ (Diana and Catone, 2016, p. 113). Active learning is also paired with collaborative (Hunter, Ortloff and Winkle-Wagner, 2014) and constructivist approaches (Hunter, Ortloff and Winkle-Wagner, 2014; Diana and Catone, 2016, 2018; Lightner and Lightner-Laws, 2016). Constructivism can inform a student-centred approach, in which students’ experiences and values are utilised in the creation of new knowledge (Oliver, 1999). As such, it can support active, experiential and collaborative approaches.

Experiential learning

Experiential learning is associated with the work of Kolb (1984, 2014). It is characterised by the active involvement of students in their own learning, grappling with authentic problems in socio-spatial contexts that are ‘participatory and collaborative’ (Pipitone and Raghavan, 2017, p. 265), and learning from their attempts to solve them (Morris, 2020). In SRM teaching, the adoption of experiential approaches is particularly evident in the teaching and learning of qualitative research methods (Nind and Katramadou, 2023). In the online SRM literature there were also some examples of qualitative SRM teachers using experiential approaches.

Users of experiential learning discuss their plans in support of this approach in the online environment. These involve careful sequencing of content to scaffold students’ development of their own research proposals, the use of a case study that illustrates research decision-making, managing students’ cognitive load through the release of content when needed, providing lots of opportunities for practice, and discussion forum activities that encourage deep reflection (Holtlander *et al.*, 2012). Activities are planned that encourage students to identify problems, propose solutions and justify their proposed changes (Hsiung, 2016) and that support deep reflection e.g., through writing about interviewing experiences (Hunter, Ortloff and Winkle-Wagner, 2014). Details about planned authentic research activities are often missing. An exception is Hsiung (2016), who describes providing students with opportunities to practice their research skills and to supplement their own data, collected as part of the course, and when it was insufficient using a digital library of qualitative transcripts.

Other influences

This body of work discusses other influences on course design and teaching, such as connectivism (Secret, Bryant and Cummings, 2017), socio-constructivism (Schulze, 2009; Rock *et al.*, 2016), gamification principles to motivate and engage online students (Tan and Hew,

2016), Caputi's (2010) adult learning model for nursing (Chilton *et al.*, 2019), Power's (2008) blended learning design model (Peimani and Kamalipour, 2021), and Garrison, Anderson and Archer's (2000, 2001) Community of Inquiry model (Roulston *et al.*, 2018). Such diversity in influences is, I suggest, reflective of an emergent online SRM pedagogy, in which teachers are experimenting with how to teach SRM online without a single strong direction.

There are examples of creative and innovative teaching. Rock *et al.* (2016) draw on socio-constructivism and principles from Learning as Knowledge Creation (Hong and Sullivan, 2009) and Pedagogy of Desire (Pignatelli, 1998; Zembylas, 2007) to design activities that address statistics anxiety. They report designing fun activities, involving students in creating memes based on popular TV characters that illustrate statistical concepts and the use of Second Life (<https://secondlife.com/>) – a virtual world platform – to teach factor analysis and discriminant function analysis. Ivankova and Plano Clark (2018, p. 412) discuss developing a 'socio-ecological' approach in response to Hesse-Biber and Johnson's (2013) call for innovation in the teaching of mixed methods. Strategies include introducing philosophical assumptions later in the course, focusing on different methodological perspectives found in the literature, and explicitly acknowledging the social and interpersonal contexts of the actors and institutions involved in research. Their approach is based on Ivankova's (2010) earlier experiences of teaching online, which highlight students' struggles with understanding and developing their own philosophical standpoints.

2.4.3 Challenges of teaching and learning SRM online

For Shulman (1987), teachers' understanding of the challenges that their students face in learning the subject enables them to transform their content knowledge into forms that are accessible to their students. Discussion of the challenges of teaching and learning SRM in the literature reviewed is variable, with some papers including no reference to the topic. Among the papers that address the challenges of teaching and learning online and of teaching and learning SRM, there was limited discussion of the intersection of these two sets of challenges and their implications for teaching and learning SRM online. In the rest of this section, I summarise the discussion there was.

Online SRM teacher challenges

Teachers could struggle with how to teach SRM online, particularly asynchronously. Challenges related to how to model researcher behaviours and bring research 'thinking processes into the open' as part of a cognitive apprenticeship approach (Schulze, 2009, p. 1002), and how to assess students' understanding of qualitative research concepts in the asynchronous environment (Hunter, Ortloff and Winkle-Wagner, 2014). Dinauer (2012), teaching quantitative

analysis using software, discusses not knowing how to provide her students with more detailed explanations when they got stuck, or how to quickly identify students who needed help in the asynchronous learning environment. She reflects that her students' learning was hindered by her not knowing how to work with individual students or screenshare. Overall, the discussion of these challenges is limited. However, Roulston, Pope and DeMarrais' (2017, p. 220) reflection that their teaching repertoires needed expanding to include 'planning and designing' for online teaching and the 'making effective use of technologies' suggests a lack of PCK, TPK and/or TPCK may hinder the teaching of SRM online. Additionally, Hunter, Ortloff and Winkle-Wanger (2014, p. 6) reflect that the training they received in how to teach online 'did very little' to prepare them to teach qualitative research methods online.

Catering for the wide range of disciplinary backgrounds and methodological knowledge among students can also be a challenge (Kalpokaite and Radivojevic, 2019). In their online qualitative data analysis course involving the use of data analysis software, Kalpokaite and Radivojevic (2019) describe carefully sequenced content, using the asynchronous space to scaffold synchronous practical sessions in an attempt to address this challenge. The challenge of student disciplinary diversity is not specific to the online environment, however (Kilburn, Nind and Wiles, 2014).

Another set of challenges highlighted in the literature relate to engaging and sustaining students in SRM dialogue (Ryen, 2009; Peimani and Kamalipour, 2021), including how to moderate online discussion. Holtlander *et al.* (2012), report uncertainty about when to step in and when to step back in online asynchronous discussion tasks. These challenges are not restricted to the asynchronous environment, however. Peimani and Kamalipour (2021, p. 12) reflect on the challenges posed in online synchronous interactions when students turn their cameras off and 'become or remain invisible', and how this limits interaction and discussion of concepts and ideas. Such challenges are well documented in the wider online teaching literature (e.g., Gilbert and Dabbagh, 2005; Hammond, 2005; Hew, Cheung and Ng, 2010; Gašević *et al.*, 2015; Kim *et al.*, 2016).

Online SRM learning challenges

Some papers include discussion of the challenges of learning SRM online. One set of challenges relate to the difficult, complex nature of the subject matter (Ivankova, 2010; Holtlander *et al.*, 2012; Lu and Cavazos Vela, 2015; Diana and Catone, 2016) and its terminology (Schulze, 2009; Diana and Catone, 2016). Such challenges have been discussed previously (e.g., by Wagner, Garner and Kawulich, 2011; Kilburn, Nind and Wiles, 2014; Howard and Brady, 2015) in the context of place-based SRM learning. The characteristics of learners also present learning challenges online, particularly if they are adult learners with other responsibilities and time

pressures, which impact on their engagement with the course (Lu and Cavazos Vela, 2015; Diana and Catone, 2016) and online discussion activities (Roulston *et al.*, 2018). The papers reviewed do not discuss how the online teaching and learning environment mediates these challenges beyond Kalpokaite and Radivojevic's (2019) observation that the online learning environment was unfamiliar to some students.

There are particular challenges with students having to learn how to conduct qualitative research in virtual worlds (Snelson *et al.*, 2017; Kawulich and D'Alba, 2019). This dual learning of method and technology significantly adds to students' cognitive load, and whilst some students' learning was enhanced by their use, for others virtual worlds were an impediment.

Early papers also note that some students missed place-placed learning and in-person interaction (Ivankova, 2010), with students 'appear[ing] to long for more connection' with each other (Dinauer, 2012, p. 106). However, this observation is not reflected in later literature, and it is not clear whether this is because students have become more familiar with (the concept of) online learning. Only one paper includes students' reflections on the technical problems they faced with software, hardware and internet speed that impacted on their engagement in the course (Kawulich and D'Alba, 2019). However, this is centred on the use of a virtual world used to practice qualitative fieldwork skills, a rather niche technology.

Overall, the literature is discipline or method-specific, often focused on an individual course or a particular cohort of students. This hinders the development of online SRM pedagogy (Earley, 2014).

2.4.4 What is different about teaching SRM online?

Discussion of what is different about teaching SRM online focuses primarily on teaching or learning outcomes differences.

Teaching differences

Much of the discussion of teaching differences relates to the teaching of qualitative research methods in online asynchronous spaces. The importance of dialogue and embodiment in the teaching of qualitative methods poses challenges for those teaching in such environments (Miskovic and Lyutykh, 2017). Miskovic and Lyutykh note the privileging of text-based communication in the asynchronous online teaching and learning space – a point previously noted by Locke (2016) - and how this 'simultaneously challenges and liberates' the teacher in forming relationships with their students (2017, p. 2714). Alas, the authors do not discuss this point further.

Both Hunter, Ortloff and Winkle-Wagner (2014) and Kalpokaite and Radivojevic (2019) reflect on the loss of student-to-student and student-teacher interaction in the asynchronous, online space. Hunter, Ortloff and Winkle-Wagner (2014) also reflect on how some of their place-based teaching tactics did not work as well in the asynchronous space, such as engaging students in dialogue as a way of them coming to understand reflexivity. However, such a deficit narrative may belie teachers not knowing how to teach in the online space. As Hunter notes, she had to change the way she thought about teaching, ‘letting go’ of the idea that she was ‘central’ to her students’ learning to be qualitative researchers (Hunter, Ortloff and Winkle-Wagner, 2014, p. 20).

Girod and Wojcikiewicz (2009) compare an online and place-based version of the same course (not theirs), identifying pedagogical differences relating to the use of formative assessment in the two versions, with place-based activities found to be less structured than the online activities. The authors spoke with the course teacher, who was adamant that the courses were the same. This paper highlights the value of comparing course documents in addition to speaking with teachers. It also may gesture to the ‘resilient beliefs’ forged in place-based classrooms (Nind and Lewthwaite, 2020, p. 469). This finding is not discussed by the authors.

Learning difference

Several papers evaluate the quality of teaching SRM online using quasi-experimental methods to determine whether students’ learning outcomes were affected by the mode of teaching delivery (Campbell *et al.*, 2008; Girod and Wojcikiewicz, 2009; Ni, 2013; Goode *et al.*, 2018). Results were mixed, reflecting in part the different outcome measures being used, but this may also reflect the different ways in which SRM courses were taught. For example, some papers report no statistically significant differences in student performance by mode (Girod and Wojcikiewicz, 2009; Ni, 2013) whereas Campbell *et al.* (2008) found online students got higher test scores and Goode *et al.* (2018) found hybrid SRM course students performed less well than place-based students on statistics tests, with no significant differences in scores on critical thinking or writing. Goode *et al.* (2018) also found there were big differences between instructors in terms of their students’ test scores due to differences in how assessments were administered.

In summary, there are limited examples of what is different about teaching and learning SRM online. In particular, we know very little about whether and in what ways teachers’ actions – how they transform their content knowledge and instruct their students - may differ between place-based and online spaces.

2.4.5 Digital technologies being used to teach SRM online

Most papers include information on the technologies used to teach SRM online, though not all include the names of specific platforms and software, see Table 2-2. Learning Management Systems (LMS) were ubiquitous, with Blackboard and Moodle being the most commonly mentioned. Tools and functionality within the LMS used were: online discussion forums; multi-media functionality for sharing video (Holtlander *et al.*, 2012; Moore and Janzen, 2012; Diana and Catone, 2016, 2018; Tan and Hew, 2016), photographs (Moore and Janzen, 2012), and podcasts (Secret, Bryant and Cummings, 2017); hyperlinks to content (Hsiung, 2016; Snelson *et al.*, 2017), also online quizzes (Moore and Janzen, 2012; Ni, 2013; Bender and Hill, 2016; Diana and Catone, 2016; Zhou, 2018; Secret, Ward and Newmark, 2019), gamification features (Tan and Hew, 2016) and journalling (Bender and Hill, 2016; Secret, Ward and Newmark, 2019).

Table 2-2 Technologies being used in the teaching of SRM online

Technology	Hybrid	Asynchronous only	Mixed online
LMS	(Ryen, 2009; Dinauer, 2012; Ni, 2013; Hunter, Ortloff and Winkle-Wagner, 2014; Diana and Catone, 2016, 2018; Earley, 2016; Lightner and Lightner-Laws, 2016; Tan and Hew, 2016; Wu and Patel, 2016; Bourque and Bourdon, 2017; Saeed and Al Qunayeer, 2021)	(Campbell <i>et al.</i> , 2008; Ivankova, 2010; Hunter, Ortloff and Winkle-Wagner, 2014; Miskovic and Lyutykh, 2017; Secret, Bryant and Cummings, 2017)	(Schulze, 2009; Bender and Hill, 2016; Roulston, DeMarrais and Paulus, 2017; Snelson <i>et al.</i> , 2017; Ivankova and Plano-Clark, 2018; Roulston <i>et al.</i> , 2018; Secret, Ward and Newmark, 2019; Snelson, 2019; Peimani and Kamalipour, 2021)
Online discussion board	(Ryen, 2009; Dinauer, 2012; Ni, 2013; Diana and Catone, 2016, 2018; Lightner and Lightner-Laws, 2016; Tan and Hew, 2016; Bourque and Bourdon, 2017)	(Campbell <i>et al.</i> , 2008; Moore and Janzen, 2012; Hunter, Ortloff and Winkle-Wagner, 2014; Miskovic and Lyutykh, 2017)	(Schulze, 2009; Rock <i>et al.</i> , 2016; Roulston, DeMarrais and Paulus, 2017; Snelson <i>et al.</i> , 2017; Ivankova and Plano-Clark, 2018; Secret, Ward and Newmark, 2019)
Video conferencing/teleconferencing	(Dinauer, 2012; Hunter, Ortloff and Winkle-Wagner, 2014; Lightner and Lightner-Laws, 2016; Diana and Catone, 2018; Zhou, 2018; Kalpokaite and Radivojevic, 2019)		(Rock <i>et al.</i> , 2016; Roulston, DeMarrais and Paulus, 2017; Secret, Bryant and Cummings, 2017; Snelson <i>et al.</i> , 2017; Ivankova and Plano-Clark, 2018; Roulston <i>et al.</i> , 2018; Secret, Ward and Newmark, 2019; Peimani and Kamalipour, 2021)
Wiki	(Diana and Catone, 2018)	(Holtslander <i>et al.</i> , 2012)	(Rock <i>et al.</i> , 2016; Secret, Ward and Newmark, 2019)
Cloud-based collaboration tools	(Saeed and Al Qunayeer, 2021)		(Secret, Ward and Newmark, 2019)
Assignment submission tools	(Lightner and Lightner-Laws, 2016)		
Virtual Worlds	(Kawulich and D'Alba, 2019)		(Rock <i>et al.</i> , 2016; Snelson <i>et al.</i> , 2017)

In early hybrid courses, teleconferencing software was used (Dinauer, 2012; Lightner and Lightner-Laws, 2016). Later courses included the use of video conferencing platforms, illustrating how technology and its use by SRM teachers has evolved in the past decade. There are few examples of teachers using social media platforms (Snelson, 2019) or messaging Apps such as WhatsApp (Saeed and Al Qunayeer, 2021) in their teaching.

2.4.6 The role of digital technologies in teaching and learning SRM online

Discussion of the roles played by digital technologies in the teaching and learning of SRM in the literature reviewed tends to focus on what teachers and in some cases, students (Holtslander *et al.*, 2012; Lightner and Lightner-Laws, 2016; Rock *et al.*, 2016; Snelson *et al.*, 2017; Roulston *et al.*, 2018; Kawulich and D’Alba, 2019) did with technologies – what it enables teachers and students to do.

Papers refer to the use of digital technologies to enable dialogue and discussion between students and with the teacher. In the asynchronous online teaching and learning environment the online discussion forum affords such discussion and dialogue. Whilst many authors note the use of an online discussion forum, see Table 2-2, few discuss its affordances. Ivankova (2010), teaching mixed methods entirely asynchronously online, notes that the discussion forum supported more frequent interaction and collaboration between students and teacher, and afforded students the opportunity to engage in multiple discussions at once – something Ivankova reflects was not afforded in her place-based classroom discussions. In teaching an introductory research methods course, Secret, Ward and Newmark (2019) report using the functionality of the LMS discussion board to create fora in which their students could establish groups to discuss and develop their research proposals asynchronously. For Bourque and Bourdon (2017, p. 482), teaching qualitative research methods in a hybrid environment, the online discussion forum afforded a place where students could ‘share their problems and solutions as a community of practice’. The online discussion forum also afforded a space in which formative feedback could be given and received (Ni, 2013; Diana and Catone, 2016, 2018; Lightner and Lightner-Laws, 2016; Tan and Hew, 2016; Secret, Bryant and Cummings, 2017; Zhou, 2018; Saeed and Al Qunayeer, 2021).

In addition to the online discussion forum, social media – Facebook (Hunter, Ortloff and Winkle-Wagner, 2014) and instant messaging platform WhatsApp (Saeed and Al Qunayeer, 2021) were used to by teachers and their students to support asynchronous group activities. The latter afforded opportunities for students to express the challenges they were facing as they were undertaking activities online, which the teachers responded to, typically in place-based sessions as part of the hybrid research methods course.

More recent literature discusses the use of video-conferencing software in synchronous online teaching of quantitative (Rock *et al.*, 2016), qualitative (Roulston, DeMarrais and Paulus, 2017; Snelson *et al.*, 2017; Roulston *et al.*, 2018), mixed methods (Ivankova and Plano-Clark, 2018), and research methods courses (Zhou, 2018; Secret, Ward and Newmark, 2019; Peimani and Kamalipour, 2021). Peimani and Kamalipour (2021) are unusual in discussing, in detail, the functionality of the video conference platform they used (MS Teams - <https://www.microsoft.com/en-gb/microsoft-teams/group-chat-software>). They describe setting up different channels that enabled groups of students to individually present their work to each other and receive peer feedback. The chat function enabled students to ask and respond to questions, which the authors argue helped students who were less comfortable with voicing their ideas to actively participate in the synchronous environment. The idea of functionality affording inclusivity is echoed by Roulston, DeMarrais and Paulus (2017), who argue that the video conferencing software platform afforded students choice about how they want to engage in the discussion – through text, voice and video. Moreover, the chat function in video conferencing software can provide an ‘additional layer of interaction’, with students posting questions whilst the teacher is presenting (Roulston, DeMarrais and Paulus, 2017, p. 223). Roulston, DeMarrais and Paulus (2017) also argue that the video camera functionality enables the teacher to be visible to students – humanising the teacher and that this supports the development of a learning community among students. The use of video conferencing platforms to bring teachers and students together temporally also afforded teachers’ opportunities to check students’ understanding of concepts and correct any misunderstandings (Secret, Ward and Newmark, 2019; Peimani and Kamalipour, 2021).

The reviewed literature also includes examples of how teachers were exploiting the affordances of other digital technologies. LMS course-page stylesheet functionality supported the sequencing and chunking of content (Diana and Catone, 2016; Rock *et al.*, 2016; Secret, Ward and Newmark, 2019). Holtzlander and colleagues (2012, p. 347) note how the use of a Wiki enabled students to ‘practice skills for exploring methodology for their own research question’ but did not discuss its use further. Virtual worlds afforded convenient (Kawulich and D’Alba, 2019), ‘naturalistic’ (Snelson *et al.*, 2017, p. 1453) environments in which students could practice and develop their qualitative research skills. Screensharing functionality supported teacher demonstrations of qualitative analysis software to undertake tasks online (Kalpokaite and Radivojevic, 2019). Teachers used Hyperlink functionality to support students in connecting theory with practice (Hsiung, 2016; Secret, Bryant and Cummings, 2017), to manage students’ cognitive load by focusing them on ‘the most salient ideas’ (Secret, Ward and Newmark, 2019, p. 461), and as a way of distributing teaching datasets (Zhou, 2018). Tan and Hew (2016) are

unique in reporting on using gamification functionality in the LMS to motivate and engage their students, with students earning points and badges for completing discussion forum tasks.

Deeper, critical reflection on the role of digital technologies in teaching SRM online is rare, addressing three sets of issues: usability of the LMS ; the role of technology in discussion activities; and the role of technology in providing students with opportunities to engage in virtual qualitative fieldwork. Peimani and Kamalipour (2021, p. 9) note that the LMS was not ‘user friendly’ for synchronous activities, so teachers switched to using MS Teams. Roulston *et al.* (2018) note that the permanence of discussion forum posts impacted on the willingness of students to post when their ideas or understanding was emergent. Roulston, DeMarrais and Paulus (2017) note the institutional LMS lacked functionality that would allow the teacher to signal they had read a student’s post without having to type a response – a function available on another LMS Paulus had used previously.

In summary, much of the literature discussing the role of digital technologies in the teaching of SRM online has been published since 2016. The literature primarily discusses how teachers used the functionality of technology in their teaching to engage students in dialogue and discussion. There is a small literature discussing other uses of technologies and of the role of digital technologies in learning SRM.

2.5 Limitations of current knowledge and my research questions

This was not a thorough systematic review of the literature, and my search terms may have missed papers. However, the literature reviewed is predominantly north American, with much of it published since I started my PhD in 2015. The UK-context appears to be largely missing from the literature, which is problematic given UK policy aspirations for the role of online SRM training provision in capacity building outlined in section 1.3.2.

Snelson (2019) notes the paucity of literature on the pedagogic practices of online qualitative teachers and calls for additional research. My review suggests that this gap extends beyond qualitative research, to all SRM teaching. Notably, I identified few papers discussing the teaching of quantitative research methods online, with discussion of the teaching of quantitative research methods asynchronously online a particular gap.

Much of the literature is based on teacher, and to a lesser extent, student reflections. There appear to be few examples of pedagogic research looking at the teaching and learning of SRM online (Lu and Cavazos Vela, 2015; Kalpokaite and Radivojevic, 2019). Hammersley (2023, p. 21) defines pedagogic research as that looking at ‘others’ practice’. This is a gap. Moreover, there is little discussion in the literature of the ways in which teachers’ address the challenges of

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teaching SRM online, and of the role that digital technologies play in pedagogic decision-making. The experiences of online SRM learners also seem largely missing and as I was planning and collecting my data, I had not come across papers that looked at the teaching of SRM through the theoretical lenses of PCK or TPAK. My research speaks to these gaps. Specifically, my research sought to explore:

1. How SRM is taught online and the similarities and differences with place-based teaching;
2. How teachers respond to the challenges of teaching and learning SRM online; and
3. How the affordances of the digital technologies of the online learning environment are used in support of teachers' pedagogic goals.

Chapter 3 Methodology

3.1 Introduction

In this chapter, I discuss my choice of methodology. This was guided by my positionality (section 3.2), my understanding of pedagogy (section 3.3), ethical considerations (section 3.4) and my research questions.

Q1. How is SRM is taught online? What are the similarities with place-based teaching and what is different?

Q2. How do teachers respond to the challenges of teaching SRM online?

Q3. How are the affordances of digital technologies used in support of teachers' pedagogic goals?

I present my research design and choice of a case study approach (section 3.5), discussing the strengths and limitations of case study and its appropriateness for this study (section 3.6). In the remainder of this chapter I consider the selection of cases and interviewees (section 3.7), data collection methods (section 3.8) and data analysis and interpretation (section 3.9).

3.2 Positionality

In considering the methodological approach I used, I reflected on my assumptions for making claims about knowledge and what they meant for my doctoral research (Creswell, 2007). This was an illuminating and at times challenging process. I came to my doctoral research already invested in a particular research tradition, having worked as a researcher in an applied social policy research setting for over twenty years. In my work as an applied social researcher, I am sometimes asked for my opinion, typically in the form of making suggestions or recommendations. However, my values as a researcher – my axiology – are rarely explicitly stated in my research reports. This is something that I had to explore and be explicit about in my doctoral research.

My professional research work is aligned with a critical realist methodological framework, which attempts to understand the 'real social world' (Fletcher, 2017, p. 182). Through this philosophical lens, social reality is seen to be context-dependent (Stylianou and Scott, 2018), operating in open systems in which internal and external contexts interact (Brown, 2009; Stylianou, 2017). Within these open systems, a social reality is produced and explained through differentiating (ontologically) between three layers of reality: the *empirical*; the *actual* and the *real* (Bhaskar, 1975, p. 13). The *empirical* relates to events that are experienced and observed,

and which are understood through interpretation. In the *actual* layer, events are taking place, irrespective of whether they are being observed or interpreted. Finally, the *real* layer is home to the casual mechanisms - the 'inherent properties in an object or structure that act as causal forces to produce events' (Fletcher, 2017, p. 183). These causal mechanisms are inherently a product of the 'activities they govern and cannot be identified independently of them' (Bhaskar, 1979, p. 48). This means that causal mechanisms can exist at the empirical level and as such they can be researched empirically.

My positionality is also shaped by my experiences of teaching SRM, principally questionnaire design and cognitive interviewing, to students and practitioners. When I was designing my research I had no experience of teaching online, and limited experience of being an online student. I wished to work with SRM teachers and students to understand the teaching and learning of SRM online, with the aim of providing resources for those wanting to teach SRM in online spaces. As such, I wanted to engage with my research participants as an 'alongsider' (Carroll, 2009, p. 246). Feminist perspectives on methodology were helpful to me in thinking about what being an 'alongsider' means in practice for my research, particularly in terms of breaking down distinctions between participant and researcher and being honest with myself and others about my role in the research (Klein, 1983).

3.3 Pedagogic positionality

I adopted a sociocultural perspective on pedagogy, rooted in the work of (Vygotsky, 1978) and his ideas about learning and the role of language, mediation, and the transformation of skills and knowledge from social to cognitive processes. From a socio-cultural perspective, 'learning is a socially mediated process influenced first and foremost by different modes of semiotic tools, the most important of which is the language' (Shabani, 2016, p. 3). Social mediation and dialogic negotiation are the triggers for learning and development and affect pedagogy. Context is also important in understanding pedagogy: 'the situated, social experience of learner and/or teacher' (Nind and Lewthwaite, 2018b, p. 2) together with the values of teachers and learners in terms of 'what people perceive to be meaningful, important and relevant' (Nind, Curtin and Hall, 2016, p. 3).

The focus of my research was on the role of digital technology in the achievement of pedagogic goals and my ambition was to contribute to an emerging social science research methods pedagogic culture (Nind, Kilburn and Luff, 2015). My research was concerned with the 'craft' of pedagogy, that is with the 'action-orientated knowledge used by teachers in their day-to-day classroom teaching' (Nind, Curtin and Hall, 2016, p. 58). Such knowledge can be hard to know because it is often tacit, with teachers struggling to verbalise or have an awareness of what they

are doing (Shulman, 1987; Ruthven and Goodchild, 2008). As such, my research design included dialogic methods to explore the complex inter-relationships between students, teachers, institutions, teaching and learning spaces, technology, and content. It also built on the research of Nind and Lewthwaite (2018b), who have operationalised a sociocultural perspective to engage with teachers and learners of SRM to illuminate pedagogic practices and concepts and to contribute to the development of pedagogic culture. My initial research design was influenced by their choice of a bespoke mix of qualitative methods.

3.4 Ethical Considerations

Busher and James (2015) argue that when research takes place in online and hybrid spaces, the risks of exposing research participants to harm can be minimised by taking a dialogic approach to research ethics. This involves the development of a research design that is informed by ethical considerations, and that can evolve in response to ethical issues as they arise (Esposito, 2012; Henderson, Johnson and Auld, 2013). This interplay between research design and ethics was something that I came to appreciate as my research progressed. As an alonsider doing research online, I wanted to show respect to others (Knobel, 2003) teaching and learning SRM online, by spending time understanding what online SRM courses entailed, and this influenced my choice of methodology.

My initial research design was informed by ethical guidance from UKRI and professional bodies such as the British Educational Research Association, but also by guidance from the Association of Internet Researchers (AoIR) (Markham and Buchanan, 2012) and Networked System Ethics (2017). AoIR is at the forefront of online and digital research, and I found its guidance particularly helpful as I attempted to tailor research ethics principles to the specific contexts in which my research was taking place (Sveningsson-Elm, 2009). In this section I discuss ethical considerations in relations to the benefits and risks of my research, confidentiality and privacy, gaining access and informed consent, and online observation. Ethical approval for my research was granted by the University of Southampton research ethics committee, see Appendix A.

3.4.1 Benefits and risk of my research

My research would involve people – SRM online teachers and students – taking part voluntarily. In inviting them to take part, and in my ongoing interactions with them, I recognised that I would need to explain the aims of my research and the benefits of taking part. As mentioned in section 3.3, my ambition was for my research to contribute to SRM pedagogic culture. I wanted to convey this to would-be participants and make explicit that my research was not concerned

with evaluating teachers and teaching practices, but rather with illuminating the ways in which SRM is taught online and stimulating discussion and reflection at both the individual and collective levels. However, I was aware that there were potential risks that participants could be harmed by taking part in my research. Harm could arise from taking part and from the reporting of research findings (Merriam, 1998; Simons, 2009).

In thinking about harm, I was aware of the wider context within which much SRM teaching was taking place, with HEI teaching quality being more closely scrutinised with the launch of the TEF in England (see section 1.3.1). I was also mindful that it can be more difficult to assess how participants are feeling when research is being undertaken online (Eynon, Fry and Schroeder, 2017). I heeded Lee's (2006) advice on undertaking research in online and hybrid spaces, to clearly communicate with (prospective) participants what taking part would entail, including the nature of planned research outputs. However, this was easier said than done.

As I started to contact potential participants, further ethical concerns surfaced. These included concerns about the burden of participation on teaching staff, who were already hard pressed for time, and the impact of the research on students' participation in the course and on their learning. I realised that it would take time to develop relationships with teachers and course leaders as stakeholders and gatekeepers, to gain their trust and to negotiate access to online courses. These early conversations with teachers and course leaders made me consider more deeply the potential harm participation in my research could pose (Markham and Buchanan, 2012), and how my research could make participants feel uncomfortable and vulnerable. I defined vulnerability as teachers' and students' feeling uncomfortable about the presence of a stranger in what they perceived to be a private teaching and learning space. I wondered if such vulnerability was specific to the online teaching and learning context or may also be a risk in place-based pedagogic research. I considered what I could do to build rapport and trust that would convey my respect for (would-be) participants (Guillemin and Heggen, 2009).

I also decided that I would share interview transcripts with participants, as a strategy to mitigate the risk of harm that could arise during the interview when participants say things that they later regret (Simons, 2009) and where public disclosure can risk damage to the professional reputations of individuals and organisations (Stutchbury and Fox, 2009).

3.4.2 Confidentiality and privacy

Harm can also result from breaches of confidentiality and anonymity (British Educational Research Association (BERA), 2018). I understood my responsibilities under UK legislation and the General Data Protection Regulation (GDPR) to keep personal data safe and secure, and put in place practices to ensure data were collected, transferred, and stored securely. However, I

became aware of the need to move beyond a purely deontological, rule-based approach to these and other ethical concerns and to consider the consequences of my actions on research participants – both immediately and in the longer term (Anderson and Kanuka, 2010). This prompted me to consider what kinds of data I would collect, what it would reveal about those who generated it – how it would represent them (Carusi, 2008), and what expectations of anonymity I would provide to individual participants and organisations.

Bruckman (2002) has likened internet users creating content to amateur artists, raising the ethical question of whether, in using their content, researchers should acknowledge their ownership. This raised questions in my mind about how I could acknowledge the work of the online teachers and learners who would participate in my research, yet protect the anonymity, not only of research participants but those associated with online courses being discussed, including institutions. At the time of my data collection, online SRM courses were uncommon, and as such I was mindful of needing to avoid the identification of individual research participants by ‘insiders’ (Punch, 1994, p. 92) familiar with the online SRM course landscape. However, anonymising the course could risk my ability to produce credible research outputs (Lee, 2006) that contained the pedagogic details that would be of value to the wider SRM teaching and learning community. My approach to anonymisation evolved during my research, as I interacted with participants and started writing about my data.

3.4.3 Gaining access and informed consent

Informed consent is a core principle of research ethics (Anderson, 1998; Simons, 2009) and raised questions for me about whose consent I would need to obtain. I considered who owns the online courses and teaching and learning artefacts that my research was concerned with - institutions and funders, teachers, students? I realised that I might need institutional consent, in addition to the consent of individuals, and I would need to explore this on a case-by-case basis (Markham and Buchanan, 2012).

In inviting people to take part in my research, I would need to provide them with ‘sufficiently full’ information about what study-participation involved, so that they could make an informed decision about whether they wanted to take part (Crow *et al.*, 2006, p. 83). My research would be conducted primarily online, with the invitation to take part (Appendix B.1) and research information sheet (Appendix B.2) being provided in writing. I considered how I would present information about the study to people in a way that would support the principle of informed consent. I adopted design principles such as using non-technical language, concise descriptions, and sub-headings to break up text (Eynon, Fry and Schroeder, 2017), so as to reduce risks that participants would not understand or read the information. However,

understanding cannot be guaranteed (Varnhagen *et al.*, 2005). I would need to reiterate what participation in individual elements of the study involved and reconfirm consent with participants at points during the study, e.g., when setting up interviews and at the start of the interview. My early conversations with online SRM course leaders and teachers brought into focus more clearly the potential harms and concerns of participants (see section 3.4.1), leading me to revise my materials and recruitment approach, see section 3.7.1 for details.

In support of people being able to make informed decisions about whether to participate in research, participants should have the opportunity to ask questions or seek clarifications about it (Anderson, 1998). I considered how I would be able to offer such an opportunity, given that communication with would-be participants would be mediated through email. I decided that I would provide my email address and telephone number as part of initial contact with participants, alongside text that encouraged people to get in touch if they had any questions or concerns. I recognised that such an approach risked individuals identifying themselves and that this may have put some off doing so. However, I felt individuals would be able to decide whether they felt this risk was worth taking, and if they did not think it worthwhile then they would likely not opt-in to the study.

It was a requirement of the University of Southampton's ethics committee that research participants provide written consent. In designing the consent form, I wanted to give participants control over what they consented to. This involved me clearly setting out each element of participation and data collection and seeking consent to each of these elements individually (see Appendix B.3). I sought consent for each individual participant, even where institutional consent had been granted, heeding Simons' (2009) advice.

3.4.4 Online observations

I wanted to spend time in online courses, including their discussion fora, observing pedagogic activity and teaching and learning artefacts. This raised a number of ethical questions. As an alongsider, I considered the extent of my participation in any online courses I observed, including online discussion forums. I questioned whether it was ethical for me to engage in discussion forum activities as a researcher or to visit course discussion forums to read posts, but not contribute. The latter could make me a lurker, with the power to observe others without their knowledge (Brownlow and O'Dell, 2002; Richman, 2007) or a spy (Rose and Hibsman, 2014), covertly garnering knowledge. This felt at odds with my alongsider positionality, and suggested to me that I should inform participants of my intention to observe. However, I was also concerned that by knowing I was lurking in the online forum, students and teachers might feel uncomfortable using it.

I considered whether I needed participants' consent for such observation, and in so doing whether the online spaces I might observe were (considered) public or private (Knobel, 2003). Online SRM courses include both closed, private courses, that can only be accessed by fee-paying students and open courses, such as MOOCs. Both types of course require students to enrol, and it seems likely that students and teachers would view posts to course forums as private to the members of the course. Whilst I might be granted access to the course and have access to online forum posts, I would need participants' informed consent to include their posts as part of my research data.

Earlier pedagogic research with SRM teachers and learners had involved the use of video to stimulate pedagogic reflection (Nind, Kilburn and Wiles, 2015). This involved researchers in filming a place-based short course, making qualitative observations, and conducting a focus group with the teacher and students immediately after the course to discuss pedagogic moments of interest. Nind and her colleagues noted that they sought consent to filming the course initially from the teacher, and then from students. I considered this method for my research. In a place-based setting, students who did not want to be filmed could potentially be kept out of view by careful positioning of cameras. Filming an online course raised ethical issues around whether the course could be recorded if a student objected, given that the student could still be visible or identifiable in the recording, e.g., from their name and or avatar, even if their camera was off. Filming also raises privacy issues: students and teachers may be participating in the course from private spaces, such as their homes, and could feel uncomfortable with and stressed by the idea that the session would be filmed. I would need to work with teachers and students to find an acceptable way of doing this, ideally piloting the approach. I move on now to my research design.

3.5 Research design

I adopted an abductive research design, in which I used the concepts, meanings and choices' of 'social actors' as the basis for my interpretation and theory-building (Blaikie, 2007, p. 91). However, I combined this with a retroductive approach in which, having described how SRM is being taught in different online contexts, I explore 'possible contending mechanisms' that might explain the patterns I have found in my data (Blaikie, 2007, p. 88). These contending mechanisms were existing pedagogic frameworks for thinking about the teaching of SRM and online learning: Nind and Lewthwaite's (2020) conceptual-empirical typology of social science research methods pedagogy, Mishra and Koehler's (2006) technological pedagogical content knowledge and Shulman's (1987) model of pedagogical action and reasoning.

My research design involved semi-structured interviews with teachers of SRM in online courses and case studies of the courses. These two strands were scheduled to run in parallel, and cross-pollinate, for example with some issues arising from early semi-structured interviews being explored in the case study and issues arising from the case study informing later semi-structured interviews with other online SRM teachers.

I chose case study as a core part of my approach because it allowed ‘in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular... [course] ... in a “real life” context ... to generate knowledge ... and professional practice’ (Simons, 2009, p. 21). I adopted a ‘holistic’ multiple case design (Yin, 2014, p. 62) involving two cases (online research methods courses) of intrinsic and instrumental value (Stake, 1995). These would exemplify different pedagogic approaches to teaching and learning in online spaces and allow me to explore my research questions. However, I also wanted to engage with a wider group of SRM teachers, who (had) taught SRM online, to provide breadth given the range of methods and disciplines that SRM encapsulates. Engaging with a wide range of SRM teachers working in online spaces also provided opportunities for dialogue, an important ingredient in pedagogic culture building (Nind and Lewthwaite, 2018b).

At the start my research questions were largely etic issues, which I brought with me. They reflected the focus of the wider NCRM-funded project of which my research forms a part and the strategic goals of the ESRC (refer to section 1.2.1). However, my research questions and my research methodology evolved as my research progressed, following an abductive approach (Blaikie, 2007), in response to practical challenges in gaining access to case sites, emergent issues from early discussions with potential research participants and from early analysis of my data.

3.6 The value of the case study approach

My aim was to collect detailed, in-depth data on two specific online social research methods courses as they took place. Spending time ‘within the world of those being researched’ (Hamilton and Corbett-Whittier, 2013, p. 11) I was able to understand and explore the ‘fuzzy realities’ (Bryne and Callaghan, 2014, p. 155) of those involved in the online SRM course: teachers, students, educational technologists, heads of department and so forth.

Each course was a case - a ‘bounded system’ that allowed me to focus on its particularity and complexity (Stake, 1995, p. 2) - studied in its real-world context (Stake, 1995; Simons, 2009; Yin, 2014). The situated-ness of the case study approach was particularly important in my research, enabling me to explore in detail the pedagogy as craft of a specific online course (see section

3.3) and how the online course was implemented in the context of a particular educational setting. Another feature of the case study approach that supported my pedagogical research was that it involves collecting data in different ways from different people with different perspectives. This feature affords a deeper understanding of the educational context (Hamilton and Corbett-Whittier, 2013) that pays attention to the ‘culture of the institution’ (Simons, 2009, p. 15). My reading of the PCK literature (see section 2.2) had highlighted that the institutional context can play a role in the development of teachers’ pedagogic content knowing (Cochran, DeRuiter and King, 1993) and in how teachers respond to learners’ challenges. Employing a case study approach would enable me to explore this in relation to my second research question: how teachers respond to the challenges of teaching SRM online.

My decision to include more than one case was driven by several factors. Firstly, there was no obvious SRM course that stood out as being *the* case to study, that typifies the genre, or encapsulates the challenges and exemplifies approaches to tackling them – what (Stake, 1995) refers to as being intrinsically interesting. This was because of the diversity of online SRM courses and, at the time of my fieldwork, a paucity of research on online SRM courses that could be used to guide the selection of a typical online SRM course. Secondly, having two cases meant that in the analysis I could compare and contrast courses and case study findings. The ‘theoretical replication’ of findings is seen as a strength of a multi-case approach, even one with only two cases.

My case studies would not only be descriptive, providing ‘thick descriptions’ (Geertz, 1973) of the teaching and learning of SRM online and the role(s) that digital technology plays in SRM pedagogy in online spaces, they would also be theory-seeking or exploratory (Yin, 2014), as discussed further later in this section.

While well-suited to my research, case study also has potential weaknesses, which I considered. These weaknesses can be summarised in terms of epistemological, methodological and practical arguments. Epistemological arguments focus on the role of the researcher in the research process: selecting the case, collecting, analysing and in interpreting the data. Case study (and particularly case study involving qualitative methods) is seen by Hamel, Dufour and Fortin (1993) to rely too heavily on the researcher’s own subjective, ‘biased’ interpretations of the data that stem from a perceived lack of scientific rigour in its collection and analysis of data. However, this criticism is in part a privileging of ‘general, theoretical (context-independent) knowledge’, which is seen as scientific over ‘concrete, practical (context-dependent) knowledge’ (Flyvbjerg, 2004, p. 391). This criticism also speaks to notions of researcher positionality.

By being as explicit and transparent (Yin, 2014) about my role and decision-making throughout the research process as possible, I not only acknowledge my role in the construction of my research findings but also in the process of constructing meaning-making. I adopted certain reflexive strategies to support this transparency, not only engaging in purposeful inquiry into self-awareness (Stacey, 2012) but also engaging in ‘uncomfortable’, ‘critical’ thinking that seeks to ‘know’ but at the same time ‘situates this knowing as tenuous’ (Pillow, 2003, p. 188). I tried to record my decision-making and thinking as notes during fieldwork and analysis, making use of these in my meaning making (Saldaña, 2016). I mined my case studies and interviews for their possibilities for ‘fruitful interruptions’ (Lather, 1995, p. 55) and ‘messy’ examples (Pillow, 2003, p. 193). In so doing I tried to resist my inclination for neat and tidy explanations.

One set of methodological criticism focuses on the validity, reliability and trustworthiness of qualitative methods used within the case study approach, and in how to make sense of the data produced from combining these methods. I adopted a case study triangulation approach, ‘cross-checking the relevance and significance of issues’ and ‘testing out arguments and perspectives from different angles to generate and strengthen evidence in support of key claims’ (Simons, 2009, p. 129).

Another methodological criticism is concerned with the generalisability of findings from one or a small number of cases (Walker, 1986). In my research I employed what Yin, (2014, p. 40) refers to as ‘analytic generalization’, involving the development and testing of analytical propositions based on analysis of the raw data in an attempt ‘to explain... with the explanation being couched in more abstract terms than the terms used to describe it’ (Punch, 1998, p. 16). My goal was to make sense not only of what online SRM teachers were doing, but of the processes at work and how the same processes in a different situation may produce a different outcome. In the context of my research this involved testing out the applicability of the Nind and Lewthwaite (2020) conceptual-empirical typology of social research methods pedagogy to the teaching of SRM in online spaces, and the potential to develop new concepts that arise out of analysis and interpretation of the case. In this sense, my case studies are theory testing (Bassey, 1999).

Criticisms of the practicality of case study include that it takes too long because it produces a lot of data, which can be difficult to manage and interpret (Merriam, 1998). To guard against my being lost in a sea of data, I anchored my analysis to my research questions, using them to provide a ‘conceptual structure’ (Stake, 1995). Even so, analysis was painstaking and took many months.

3.7 The selection of cases and interviewees

Cases and teachers of SRM online were sampled using a criterion-based selection approach (LeCompte, Preissle and Tesch, 1993) with the aim of capturing maximum variation (Patton, 2002). The main selection criteria were:

- The type of course: it needed to be a social research methods course that could be defined as advanced or intermediate;
- The teaching space: it needed to be an entirely online course or have a substantial online element;
- Timing (for case studies): The course needed to run within my window for fieldwork.

Initially my plan was to select cases and teachers from online SRM courses badged as ‘advanced’ or ‘intermediate’ on the NCRM training database, and those courses that used the term advanced to describe the course (e.g., being run as part of a specialist place-based course), or that form part of a postgraduate programme of study. However, in practice I ended up adopting a broader definition that included introductory research methods courses aimed at master’s level students and research methods-focused MOOCs. This was because selecting and involving online SRM courses and teachers as originally conceived was more challenging than I initially envisaged (see section 3.7.1 for more details).

In selecting my cases and participating teachers of SRM online for interview there were other course characteristics that I initially considered to be pertinent in selection: the length of the course; the types of students it attracted (e.g., extent of variation in students’ backgrounds and experience); the institutional context (e.g., HEI-based, run by a professional body or other training provider); course evolution and pedagogical traditions. Courses undergoing change or development and teachers involved in course change were potentially data-rich, providing opportunities to explore why changes/decisions were made. Course changes may also be a marker of a willingness to innovate. The philosophical/pedagogical traditions underpinning the course, such as networked learning, connectivist, constructivist, constructionist, instructionist or cognitive-influenced pedagogies may shape how digital technology is used. However, with the exception of course length, which was a practical concern for case selection, it was not feasible to use the aforementioned course-characteristics when selecting cases and participating teachers of SRM online for interview, as this information was not publicly available. Moreover, the pool of potential cases and teachers was very small. Rather, I sought this information in my conversations with teachers and in my analysis of course documents, working towards saturation in relation to these features.

I identified potential case sites and teachers of SRM online through online searches and use of social networks. Initially, I anticipated focusing exclusively on UK-based courses, reflecting the focus of the wider project. However, as the study progressed, I realised that this geographical constraint would severely limit my pool of courses and teachers, as UK-based online SRM teachers were proving difficult to find. I was also aware of online SRM courses outside of the UK, in north America and Australasia, and it seemed sensible and practicable to include these. This allowed me to begin the process of identifying teachers of SRM online and potential case study sites and negotiate access.

3.7.1 Recruitment

Recruitment was a challenging and time-consuming process, particularly negotiating access to case study sites, with initial recruitment attempts being unsuccessful. Reasons given by course leaders for declining the invitation to participate as a case study site included a mismatch between my research timeframe and that of the course and ethical concerns, discussed in section 3.4.1.

I learnt a great deal from early recruitment setbacks. Online courses take a lot of time to prepare and organise and once fixed they are not very malleable to the introduction of new elements, such as research protocols. Allowing for a longer lead-in time so that my research could be incorporated into the course development and administrative timetable would have been beneficial in some cases.

A particular set of recruitment challenges related to the development of relationships with stakeholders and gatekeepers. Communication tended to be via email, with me sending participant information materials, including my contact details, so that would-be participants could get in touch if they had any questions. The lack of in-person contact meant that there were few opportunities for discussion of the research and the situated ethical concerns it raised, discussed in section 3.4. I could not provide additional reassurance or clarification of what participation entailed unless potential participants contacted me with questions, and I suspect that some gatekeepers found it easier to say no rather than engage in email correspondence to obtain points of clarification and discussion issues of concern.

Ultimately, my research consisted of two cases studies, details of which are summarised in Table 3-1. In addition, I conducted seven semi-structured interviews with online SRM teachers, who varied in terms of the methods and type and length of SRM courses they taught, the length of time the online course had been running and the delivery modalities, see Table 3-2.

Table 3-1 Summary of case studies

Data type	Course summary		Participants
Case study 1	Course type	Short course	Teacher
	Subject	Quantitative analysis method	Online mediator
	Length of course	12 weeks	Educational technologist
	Running since	Autumn 2017	Commissioner (digital learning specialist)
	Run by	Non-HEI	Students (2)
	Geographical location	UK	
	Delivery mode	Asynchronous online	
Case study 2	Course type	Master's module	Module leader
	Subject	Introduction to research methods	Teacher
	Length of course	30 weeks	Programme leader
	Running since	2017	Students (10)
	Run by	HEI	
	Geographical location	UK	
	Delivery mode	Online - asynchronous + synchronous Hybrid – place-based and online (asynchronous + synchronous)	

Table 3-2 Summary of online SRM teachers' interviewed

Teacher [#]	Course type	Subject	Length - weeks	Running since	Run by	Located	Delivery mode
Karen	Short course	Visual methods	2	2015	HEI	UK	Online - asynchronous + synchronous
Iona	Short course	Mixed methods	8	Autumn 2014	HEI	UK	Online - asynchronous + synchronous
Max	MOOC	Quantitative data collection method	4	Summer 2014	HEI	North America	Online - asynchronous
Katarina	MOOC	Interpreting quantitative data	3	February 2015	HEI	UK	Online - asynchronous
Meg	MOOC hybrid	Introduction to research methods	8	Autumn 2017*	HEI	UK	Online - asynchronous
Rachel	Short course	Mixed methods	9	2016	HEI	North America	Online - asynchronous
Dana	Master's module	Applied research methods	11	2018*	HEI	Australasia	Online - asynchronous + synchronous

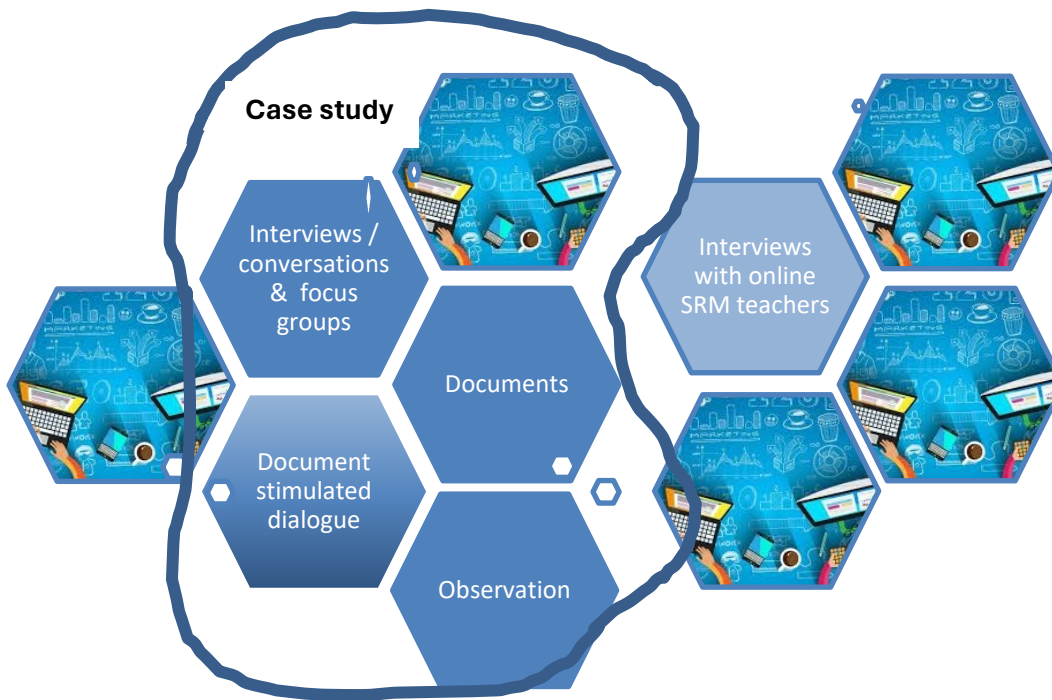
[#]Teachers names are pseudonyms

*Date refers to when course started running using stated delivery mode(s)

3.8 Data collection

Data collection comprised semi-structured interviews with teachers, the collection of online course documents (e.g., syllabi, text for webpages, screen shots) and, for case study sites, semi-structured interviews with students and observation of asynchronous communications through online forums and synchronous sessions (case study 2). Case study interviews with teachers, students, educational technologists and others also involved document stimulated dialogue. Figure 3-1 summarises the data collection methods used in relation to my research design.

Figure 3-1 Data collection methods used



The rationale for the choice of these methods, and a more detailed description of what each entailed, is discussed in the rest of this section. Table 3-3 summarises the range of participants and the methods used, and the extent of data generated in the final dataset. I was able to speak with teachers and students in case study 2 on multiple occasions (instances) during fieldwork. This was not possible in case study 1. Online course documents and resources were stored and distributed using a [LMS](#), which I was given access to.

Table 3-3 Case study participants, methods and extent of data source in final dataset

Data collection method	Who/what	No. (instances)	
		Case study 1	Case Study 2
Interviews/ research conversations	Teachers	2 (1)	2 (
	Students	2	3
	Educational technologists	1	0
	Funder/ Head of Department	1	1
Document stimulated dialogue	As part of interviews	2 (2)	2 (3)
Focus group	Teacher (1) & students (6)		1
Documents	Learning Management System (LMS) course pages/ documents	37	43
Observations	Forum posts/messages	15	88
	LMS	3	5
	Synchronous sessions	0	6

I combined methods to generate data that would allow me to answer my research questions, as Table 3-4 illustrates.

Table 3-4 Relationship between my research questions and choice of method

Research questions	Explored via: Method(s) and sources
1. How SRM is taught online – similarities and differences with place-based teaching	LMS course pages/documents Forum posts & messages
	Semi-structured interviews and conversations with SRM teachers
	Conversations with students
	Observations
2. How teachers respond to the challenges of teaching and learning SRM online	Semi-structured interviews with SRM teachers
	Conversations with students
	Document stimulated dialogue
	Observations Forum posts
3. How the affordances of the digital technologies of the online learning environment are used in support of teachers' pedagogic goals	LMS course pages
	Semi-structured interviews with SRM teachers & educational technologists Document stimulated dialogue
	Observations

3.8.1 Documents

Course web pages provide a 'ready-made source of data' (Merriam, 1998, p. 112). These pages or documents are useful in a 'literal' sense (Mason, 1996, p. 77) as they provide evidence on what is being taught online, addressing my first research question. However, they also provide 'clues to understanding' (Simons, 2009, p. 63) the pedagogy of online SRM 'as specified' (Nind, Curtin and Hall, 2016, p. 10), representing the formalisation of what the course designer (teachers and others involved in the process) considered to be important, meaningful and relevant. Moreover, they reflect ways in which pedagogy was 'enacted' (Nind, Curtin and Hall, 2016, p. 12) - how the teacher brings to life or enacts the course pedagogy. This enactment in the asynchronous space of the online course cannot be observed directly, rather as Stake (1995) and Merriam (1998) suggest, documents – in this case the course webpages - generate data on enactment, and on the course design and construction activity that had already taken place.

I decided to focus on course web pages and documents (e.g., presentations) contained in the course LMS and not on web pages and documents that were referenced by the course but

existed outside of it. I did this as a way of bounding my research and my case study sites and focusing on pedagogical content that was 'relevant' to my research (Kozinets, 2015, p. 168). The exception to this was any web pages that advertised the course, as these provided contextual information, such as course prerequisites and learner requirements. Web page text and images were captured as PDF files, which could be imported into NVivo 11-12 for analysis. These documents contained the text, images and some of the formatting features of the web pages. They also indicated the presence of embedded videos, however the videos themselves could not be imported as I did not have permission to do so.

A limitation of the collection of online course documents is their temporal specificity, which is exacerbated by the dynamic nature of the internet (Williams, 2007). The documents represented the course at a particular moment in time when, in reality, courses are dynamic. To address this issue, I asked teachers about how the course had evolved and any plans for updating it during the interview (see section 3.8.3), as well as considering this issue as part of my analysis.

As well as being a useful source of data in their own right, I used course documents as an elicitation tool in interviews with teachers and learners as part of my case studies, to encourage and support reflection and dialogue on course features and content (Dempsey, 2010), which I discuss in more detail in section 3.8.4.

In interviews with SRM teachers I was able to explore whether it would be possible to gain access to web course pages. This proved difficult, although in one instance the teacher was willing to share documents that contained the text and instructions that she provided to the person who created the actual web pages. These documents clarified the structure of the course but were not included as data for analysis of interviews with SRM teachers.

3.8.2 Observation

As well as downloading course content for case study sites as documents for subsequent analysis, I recorded my impressions and ideas as I worked my way through the course. I was not a fee-paying student concerned with learning the method and applying it to my own research. As such, my motivations for taking the course and expectations of it were different to many of the course students. I was motivated by wanting to experience how the course was structured and how it took the learner through the learning journey. I recorded my impressions of the course to provide a record of what happened and how it felt, capturing my 'provisional thoughts about what these observations mean', what to look out for next, and my 'concerns about aspects that puzzle or frustrate' (Hine, 2015, p. 74). This process encouraged me to reflect on the online

course web pages as data, and of what they mean in the moment: ‘to traverse space to reach objects *unobservable* otherwise’ (Bratich, 2018, p. 527).

In the reflective space that flowed from observation I engaged in ‘self-reflexivity’ (Lather, 1995, p. 55) to question my assumptions about, and interpretations of, the course documents, noting these and feeding these thoughts into the questions I asked participants when I interviewed them. In my second case site I observed students on the hybrid course in place-based lessons and events, to ‘see things that may routinely escape awareness among the people in the setting’ (Patton, 2002, p. 262) and to generate further perspectives on the case (Stake, 1995). In collecting observations, I was seeking first order perspectives that allowed me to understand what the online courses consisted of and what they entailed. Yet I was also able to integrate second order perspectives (Marton, 1981) through documenting my reflections, which helped me to explore variations in teachers’ and students’ perspectives on teaching and learning SRM online. I include extracts of my observations from case studies 1 and 2 in Appendix C.

3.8.3 Interviews

I used in-depth, semi-structured interviews to engage in ‘conversations with a purpose’ (Burgess, 1984, p. 102) with teachers and learners that were loosely guided by themes that I identified as being important to my research (see Appendix D for copies of interview guides). The ‘contextual’ and ‘situational’ talk generated (Mason, 1996, p. 40) provided rich data through which I explored the pedagogy of online SRM, the perspectives of different actors present in my case studies and those engaged in teaching SRM in the wider world, the challenges they face and their responses to these challenges. The dialogic nature of these interviews was important in generating and co-producing meanings (Kvale, 1996) and in providing opportunities for learning: for participants to ‘discover, uncover or generate the rules by which they are playing this particular game’ of teaching and learning of SRM online (Holland and Ramazanoglu, 1994, p. 135).

My goal in these interviews was to ‘complexify’ the conversation (Stacey, 2012, p. 14) by questioning and opening up opportunities for exploration of what we as methods teachers and learners were doing. This involved my use of probing questions to open up dialogue in which points could be expanded upon, clarified and examined from different perspectives (Yeo et al., 2014). The use of *we* is deliberate, reflecting my positionality as an *alongsider* (see section 3.2) attempted to find common ground on which to build trust and rapport so as to lubricate the flow of talk and disclosure in the interview (Ross, 2001). The goal was that the dialogue would be useful to participants as well as for me. Yet as the interviewer I was also seeking to occupy ‘a space of paradox, ambiguity and ambivalence’ in which I was ‘open, authentic, honest [and]

deeply interested in the experience' of my research participants (Corbin and Buckle, 2009, p. 59).

Participants were offered a choice of interview mode: in-person in a physical setting of their choosing; online (Skype or other video-conferencing platform of their choosing); or telephone. In practice, participants opted for telephone (in one case) and online mediated rather than in place-based settings. There were contextual reasons for this (Oltmann, 2016): the geographical dispersal of participants and its implications for time and costs of fieldwork; ease of scheduling and re-scheduling if needed; and participants' familiarity and comfort with these modes. I was concerned that the loss of visual cues (Hay-Gibson, 2009), potential technical problems such as time lags due to internet connectivity (Saumure and Given, no date) and online mediated interview mode might stifle the development of rapport between myself and the participant (Deakin and Wakefield, 2014). However, I did not get this sense when conducting interviews. Participants appeared at ease and an initial comparison of data obtained from telephone/ audio Skype interviews with video Skype interviews in terms of length of the interactions and depth and coverage of information collected, did not suggest that there were mode differences. This may have been because I had started to lay the foundations for building rapport with participants in email exchanges, ahead of interviews taking place (Deakin and Wakefield, 2014; Seitz, 2016). As such one mode did not appear to be inherently better than the other as Irvine, Drew and Sainsbury (2012) argue. Rather, the important factor in the development of rapport that supported deeper conversations online was the quality of the Skype connection (Weller, 2017). Generally, the Skype connection was good but there were occasions where the connection dropped out for a few seconds, which broke the flow of the interaction.

3.8.4 Document Stimulated Dialogue

One of the challenges of researching the pedagogy of SRM is that the 'craft knowledge' of the teacher is tacit, practical, and situated; and 'is often not visible through observing teaching, nor easily drawn to mind through interviewing teachers about their teaching in the abstract.' (Nind, Kilburn and Wiles, 2015, p. 563). To address this challenge, I used course documents and artefacts, such as online forum posts, as prompts to stimulate reflection and dialogue on aspects of the course (Calderhead, 1981). The 'opportunity to reflect together, in pedagogical terms' (Nind and Lewthwaite, 2018b, p. 8) as teachers and researchers can generate knowledge that can inform practice (Powell, 2005), and fits with my research goal of building SRM pedagogic culture.

Document stimulated dialogue was used with teachers during semi-structured interviews, as part of the case study approach. The aim was to stimulate talk about pedagogic practices so as

to ‘generate new understandings from dialogue about the reflections, thereby coming to know pedagogy more deeply’ (Nind, Curtin and Hall, 2016, pp. 176–77). The selection of the material was in some cases driven by the participant: they may have started to talk about a particular module or activity, for example, and I might then have brought up the page on my screen and they did on theirs. This respondent-driven selection enhanced the reflective power of the image (Lyle, 2003). In other cases, I asked questions about aspects of the course, using the document to focus attention on it. I used careful questioning and probing to encourage reflection within the interview context, as a way of addressing the lack of prior reflection time participants had with the selected stimulus material (Moyles, Adams and Musgrove, 2002).

When interviewing those teaching SRM online I did not have access to the online course being discussed at the time, so I could not make use of visual stimulus material during the interview.

3.9 Data analysis

My approach to analysis was pragmatic. My role as the analyst was to give meaning to the dataset I generated through detailed, in-depth scrutiny, questioning, assembling and reassembling it: the data do not speak for themselves (Mason, 1996). My research questions were concerned with how SRM was taught online, how teachers respond to the challenges of teaching and learning SRM online, and how the affordances of the digital technologies of the online learning environment were used in support of teachers’ pedagogic goals. Table 3-5 sets out my analytical approach.

Table 3-5 Analytic approach to answering my research questions

Data sources (D) relevant to research Q	Analytical approach	Key analytical categories
<p>Context: What is being taught?</p> <p>D. Online course documents and materials – text, images from course web pages</p>	<p>Content mapping</p> <p>Descriptive coding of course content – topic coverage, key features</p>	<p>Conceptual – what, why</p> <p>Practical - how to</p> <p>Critical – so what</p>
<p>Q. How is SRM taught online?</p> <p>D. Online course documents & forum posts, interview transcripts, observational data</p>	<p>Thematic analysis</p> <p>Used Nind and Lewthwaite’s conceptual-empirical typology of social science methods pedagogy, modifying codes/description through reference to my own coding</p>	<p>Approaches, Strategies, Tactics, Tasks</p> <p>Challenges</p> <p>Transformation (Shulman)</p>

Data sources (D) relevant to research Q	Analytical approach	Key analytical categories
<p>Q. How do teachers respond to the challenges of teaching and learning SRM online?</p> <p>D. Interview transcripts, including document stimulated dialogue, observations, forum posts</p>	<p>Thematic analysis</p> <p>What challenges?</p> <p>Whose challenge: teacher's, learner's?</p> <p>Compared my challenge codes to Shulman's model of pedagogic action -</p>	<p>Comprehension</p> <p>Transformation</p> <p>Instruction</p> <p>Evaluation</p> <p>Environment</p>
<p>Q. How are the affordances of the digital technologies of the online learning environment used in support of teachers' pedagogic goals?</p> <p>D. Online course documents & materials, interview transcripts, including document stimulated dialogue, observations</p>	<p>Thematic analysis</p> <p>What technologies are being used?</p> <p>For what purposes?</p> <p>Compared my technology codes to Mishra & Koehler's TPACK model</p>	<p>Contextual factors</p> <p>Knowledge of technologies: teachers, students, educational technologists</p> <p>Affordances and pedagogic goals</p> <p>What was enabled, supported & constrained</p>

The process of analysis was one of moving from text to meaning and ways of knowing. Spencer et al. (2014) refer to this as the analytic journey, and my journey started with transcription.

3.9.1 Transcription

I wanted to work with verbatim transcripts as these provided a record of the interview that could be interrogated, re-interpreted, and shared with research participants easily. The transformation of audio recordings into text (Duranti, 2006) - in my case of semi-structured interviews with SRM teachers and learners into transcripts - involved me making decisions about what aspects of the spoken interaction to reproduce in text (Ochs, 1979). It also involved thinking about the 'descriptive validity' of the transcripts (Maxwell, 2012, p. 134), to ensure that the data captured what happened, what was said or done – what Kaplan (1964, p. 358) refers to as observable 'acts'. These decisions were informed by my research questions, which guided my selection of those parts of the interaction to transcribe.

I transcribed verbatim my first three interviews by hand. This was valuable as it enabled me to become attuned to the details and nuances of pedagogical practices and decision-making. It also made me consider what I would transcribe. I adopted a 'denaturalized' approach to transcription, in which my goal was to accurately capture 'the substance of the interview, that is, the meanings and perceptions created and shared during a conversation' (Oliver, Serovich and Mason, 2005, p. 4). This meant transcribing whole words spoken verbatim and selecting

paralinguistic information – the non-verbal and non-vocal information such as laughter. I transcribed these first interviews as soon after the interviews had taken place as possible, whilst the details of the interaction were still fresh in my mind. I adapted strategies suggested by Easton, McComish and Greenberg (2000) and MacLean, Meyer and Estable (2004) for minimising error. I noted any particular issues, such as technical terms that could be tricky to record accurately and used these notes as the basis for instructions to be used by a professional transcription agency for subsequent interviews.

To enhance validity, I also sent a copy of the transcript to the participant, as a record of the interview but also as a means of validating the accuracy of the transcript and opening up a new dialogic space (Cho and Trent, 2006; Thomas, 2017). In the email that accompanied the transcript I encouraged participants to reflect on what they had said and to add to or amend the transcript as they wished. My aim was to involve the participant in the research process and give them ‘control of their words’ (Grundy, Pollon and McGinn, 2003, p. 29). I am not convinced that I achieved this aim as only a couple of my participants came back to me with comments on the transcript, and these related to errors in the text rather than additional comments or reflections. This may be because I was asking participants to add to or amend a document rather than create it themselves, as Grundy, Pollon and McGinn, (2003) advocate in their ‘participant-as-transcriptionist’ approach. Given the difficulties with recruitment in my research, requiring participants to transcribe their own interviews felt like a step too far.

Verbatim transcripts are ‘artificial constructs that are adequate to neither the lived oral conversation nor the formal style of written texts’ (Kvale, 1996, p. 166), and participants should be warned that the transcript can make peculiar the conversation that took place (Grundy, Pollon and McGinn, 2003). In my early interviews I realised that I did not prepare my respondents for this, as the comments I received from one participant illustrate. “It’s quite amazing how a lot of context is lost going from the spoken conversation to the written context”. This comment made me reflect on how I could better communicate to participants what the transcript represented and how to ensure that context is not lost in my analysis.

3.9.2 Data familiarisation

The process of data familiarisation started with transcription, but this became a more focused activity as I reread early transcripts, looking for ‘key moments’ and dialogic ‘sound bites’ (Sullivan, 2012) and identifying ‘stanza’ (Gee, Micheals and O’Connor, 1992, p. 240) – changes in the topic or subtopic of the conversation or document text that could become codes (Saldaña, 2016). I highlighted words and phrases that stood out as being relevant to my research question – what Layder (1998) calls precoding, and Seale (1999) and Spencer et al. (2014) call

indexing and sorting. I used features of Microsoft Word to annotate and highlight transcripts and documents, flagging those bits that were interesting (Bernard and Ryan, 2010), see Appendix E for examples. The creation of these visual heuristics allowed me to begin to make some sense of my data: to map where in the transcript different issues were being discussed and to start to look for patterns, commonalities and oddities. This also allowed me to explore the data without fixing meaning.

As I started this process of familiarisation and beginning to organise my data, I started writing notes or ‘analytic memos’ (Saldaña, 2016, p. 44), such as initial thoughts for codes, questions to explore in later stages of analysis and my reflections on the data collection, my initial codes and understanding (see Appendix E). It was important to me to create a space in which to practise reflexivity – my:

thinking critically about what [I] am doing and why, confronting and often challenging [my] own assumptions, and recognizing the extent to which [my] thoughts, actions and decisions shape how [I] research and what [I] see. (Mason, 1996, p. 5 my adaptation)

I say ‘practise’ because in my professional life building in time for reflexivity in analysis is rare. In my doctoral research however, I wanted to develop a reflexive habit early in my research that would help me engage with and work through the ‘problematics of representation’ of meaning and consider practices that ‘build and push at the foundations of our assumptions and understanding’ (Lather, 1995, p. 56) – what Lather (1995) refers to as ironic validity.

3.9.3 Coding

Coding was more than a mechanistic process: it was a high-stakes activity involving considerable thought about how to ensure that the coding decisions I made supported the validity of my research findings in terms of its ‘credibility’ (Guba and Lincoln, 1985, p. 213). It also supported reliability in terms of careful definition of themes and concepts and consideration of their theoretical origins (LeCompte and Goetz, 1982).

I reviewed my pre-codes and started to group them together. I considered these groupings in relation to my research questions and reflected on what codes were missing. I compared my initial coding ideas with the themes that had emerged from my literature review. I identified gaps and went back to my data, [reviewing it](#) from a different perspective prompted by the literature.

I then took one transcript and went through it line by line, coding each segment abductively (Blaikie, 2007), building up analytic concepts and categories from the raw data (Maxwell, 2013). My use of NVivo 11-12 for data analysis supported this by making visible and providing an audit

trail of the route from the raw data to my analytical concepts and categories. I compared the codes generated from this approach with my earlier high-level approach and saw gaps in my initial code frame.

The next step involved bringing in the literature again and reviewing my codes against existing research, considering where to unpack my data further. This stage was important in connecting with theory and was retroductive (Blaikie, 2007). Here I was thinking about where my research might contribute to knowledge by identifying those areas where there is little prior knowledge or where the research evidence is limited or unclear, as well as areas where prior research or theory suggests that one might expect to see particular pedagogic patterns.

I started refining my codes and categories by reading across transcripts for different cases with contrasting features to flush out new insights, ‘teasing out and creating more analytic concepts and themes, interrogating them for patterns of meaning’ (Spencer *et al.*, 2014, p. 249). My final codebook is reproduced in Appendix E.

3.9.4 Analysis and interpretation

I adopted a thematic analysis approach, in which I sorted and collated all potentially relevant coded data extracts into themes or categories, ‘noting regularities, patterns, explanations, possible configurations’ (Miles and Huberman, 1994, p. 11). These themes were related to my research questions (refer to Table 3-5) and represented concepts that linked portions of my data together (DeSantis and Ugarriza, 2000). To support answering my research questions, I mapped the content of online courses and the technologies being used, see Table 3-5, which provided context specificity that underpinned my analysis.

Theme generation initially took place on paper, allowing me to play around with ‘candidate themes’, to review and refine them so as to be happy that they adequately encapsulated the features of the coded data (Braun and Clarke, 2006). In generating and reviewing my initial themes I considered: the meaningful coherence of the data within the theme – its ‘internal heterogeneity’; and the distinctiveness of each theme – its ‘external homogeneity’ (Patton, 2002, p. 465). Moving to NVivo 11-12, I further reviewed and refined themes through deeper exploration of the data, making use of software tools to look for ‘interconnected networks’ and to consider the different perspectives and vantage points on the data, in what (Lather, 1995, p. 55) refers to as ‘rhizomatic validity’.

In analysing my case study data, I sought to look at and interpret my data from different angles, being open to alternative interpretations that supported the development of my understanding

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of the meaning of individual components and their connections to the whole (Richardson, 1997), and to work out 'What this is a case of?' (Schwandt and Gates, 2018, p. 342).

My analysis was concerned with making sense of my data and creating accounts that had 'interpretive validity', in which they were grounded in the language, perspective, 'intentions, beliefs, concepts and values' of participants (Maxwell, 2012, p. 139), to identify what Argyris and Schoen (1974) call 'theory-in-use'. In interpreting and making sense of my data, and in particular my case studies, I strived to derive the 'general from the unique' (Buroway, 1998, p. 5). This involved seeking to corroborate, modify, reject or advance existing theoretical concepts, such as Nind and Lewthwaite's (2020) conceptual-empirical typology of social science research methods pedagogy and Mishra and Keohler's (2006) TPCK. It also involved developing new concepts that arose out of analysis and interpretation of the case studies and the wider interviews with SRM teachers, developing 'fuzzy generalisations' (Bassey, 1999, pp. 51–52) that highlight, for example, strategies and tasks a teacher used to address a particular set of challenges in a particular context that might be useful to others. This was an ongoing process, continuing as I wrote about my data: the writing provoking analytical questions that took me back to my data.

In the next three chapters I introduce my case studies (chapters 4 and 5) and interviews with online SRM teachers (chapter 6). Data are organised around three themes: what is being taught online; how it is being taught; and the roles of digital technologies being used in the teaching of the course.

Chapter 4 Case study 1 – the online quantitative short course

4.1 Introduction

In this chapter I describe my first case: a new, entirely online short course that focuses on quantitative methods and analytic tools used in the analysis of a particular kind of data, using an open-source analysis package. I use pseudonyms when referring to organisations and individuals here and in subsequent chapters. I write in the present tense to provide the reader with ‘opportunity for vicarious experience’ (Stake, 1995, p. 86). I start by describing the case and introducing the research participants. I go on to describe features of the case as they relate to the research questions, looking at what is being taught, how it is being taught and the role digital technologies plays in the teaching and learning of SRM online. Details of the course are summarised in Table 4-1.

Table 4-1 Summary of case 1

Type of course	Quantitative short course
Date course first started	September 2017
Course length	12 weeks (first 4 weeks supported)
Course format	Asynchronous
No. students who started the course	26
Assessment	Formative. Students receive certificate on completion of all modules
Fieldwork	September 2017 – December 2018

4.1.1 The course

The course is commissioned by a private sector, international company – eKoobz. Its move into online learning is part of an initiative to provide social scientists with the tools and skills with which to work with new forms of quantitative data. This course is eKoobz’ third online course and its’ first methods-focused one. I am granted access to the course’s first iteration, which sits behind a paywall, in the autumn of 2017 for my research. The course continues to run, on-demand two to three times a year and is one of many courses run by eKoobz at the time of writing.

The online course is born out of a two-week (35 hour) place-based UK course, which eKoobz sponsors. The place-based course covers the same method in more depth, attracting post-

graduate students from around the world who are using or planning to use the method in their research. The place-based course involves lectures, active learning sessions involving running through code and understanding the maths behind it, and lab sessions where students can work on their own data or use data supplied by the lecturer. The online course condenses the first week of the place-based course into a six to ten-hour online course, comprising videos, text, online quizzes, and specified activities involving the use of R and a specific add-on analysis package. It is conceived and positioned as a taster for the place-based course.

The online course is developed over an intense, eight-week period (it was meant to be twelve weeks, but development starts late) during the summer of 2017 by a team put together by eKoobz digital learning specialist, Shirli, who has recently joined the company. The team comprises a subject matter expert - university professor and course director – Tom, and experts in producing online courses - Cowslip Learning, led by educational technologist Will. Cowslip Learning has designed eKoobz first two courses. Will leads on the instructional design and physical build of the course, drawing on his almost twenty years of experience designing online corporate training and university courses. Tom and Will produce the learning objectives, syllabus and plan of how the course will be built. Shirli and her team work with Will on the eLearning backend and review the course. To help her review it, Shirli approaches “tech ... platform ... [and] online pedagogy experts” to join “advisory boards” that review the prototype course and make suggestions for improvements before it goes live. These experts include people Shirli knows, as well as others outside her network and they play an important role in giving eKoobz confidence they are getting the best “quality” course they can from Tom, Will and Cowslip Learning.

Will works closely with Tom: it is Tom’s first online course, and he freely admits “I would never have been able to do this by myself and ... would have had no interest in doing it”: he has no “background in pedagogy”. Tom is tempted to dabble in online teaching in part because of the “significant benefits” he perceives for his place-based [course](#) but also by the money offered by eKoobz. Developing an online course, particularly on his own would involve “a tremendous amount of time and effort up front”, time he is not convinced “you’re going to recoup”. The money makes it a more attractive proposition.

One of Tom’s colleagues at the university, Hannah, an assistant professor who has taken over teaching the place-based course from him, acts as the online mediator and “course instructor”. She introduces herself on the course Welcome page in a friendly, informal way to students, opening with “Hi everyone” before going on to explain her role and that she is available to answer questions during the first four weeks of the course. She is considering whether she will develop her own online course for eKoobz. I interview Tom, Will and Hannah individually, via

Skype, during the first six weeks of the course. During this time, I also undertake the first two modules of the course, noting my observations and capturing screenshots of the online course pages.

In later weeks of the course, I interview two learners, Sophie and Nailufar via Skype. Sophie is an associate professor in the same discipline as Tom (course leader), at a university in the USA. She is “excited” to see an email from eKoobz about “a course specifically aimed at social scientists” in an analysis method that she is considering using in her research. She signs up when enrolment opens at the end of September, paying the course fee from a small budget she has for online learning. An experienced R user, she completes the course quickly, within two weeks and is the first student to complete it. Nailufar is a student at a university in Turkey. She is planning to use the analysis method in her doctoral studies. Her tutor recommends the course and her university pay her registration fee. She enrolls on the course in November and completes it within two weeks. She has used R before, in her engineering degree and Master’s. Her doctorate is in a social science discipline. Later, I interview Shirli (eKoobz digital learning specialist), via online conferencing, in December 2018 to explore her reflections on the learning from the first iteration of the course.

[Having introduced the participants, I now move on to describe the quantitative short course: its learning goals, structure, and content.](#)

4.2 What is being taught online?

The learning goals for the course (Figure 4-1) suggest a course covering both theory and practice aimed at social scientists. These goals are attractive to learner, Sophie, who wants to know about “different ways” to approach her analysis and interpret the output, and the different analysis techniques available. The focus on social science is particularly important as she has seen other online courses covering the methods, but these are aimed at data scientists. Nailufar wants to know “what to use and why” for her own research.

Figure 4-1 Course learning goals from eKoobz website

- Understand the theoretical basis for [redacted for anonymity] Analysis
- Survey methods for systematically extracting quantitative information from [data sources] for social scientific purposes
- Identify [data sources] and units for analysis
- Convert [data sources] into matrices for quantitative analysis
- Analyze these matrices in order to generate inferences using quantitative or statistical methods

The course consists of four modules, which Sophie and Nailufar work through in sequence, as do I, although I do not complete all the activities. Each module contains a sequence of topics put together by Tom (see Table 4-2). In sequencing the modules Tom takes us through the “research design decisions [we] have to make” when working with this type of data. Module one sets the scene, introducing fundamental ideas and concepts and a three-step model for working with data of this kind, which is used throughout the rest of the course. Through these early topics Tom introduces us to the software, and we set ourselves up to use it – downloading the packages and tools we need for the rest of the course. This takes me a while as I have not used R before and I can see why the course description on the eKoobz website says students should have some familiarity with it. Tom ends the module by showing us how the method can be used, giving a flavour of the kinds of research questions the method is suitable for.

Table 4-2 Module and topic structure of online course

Module	Topic: [x]	Topic coverage (from course material)
1	1. What is [x] Analysis	The challenges of traditional analysis The need for [x] analysis method
	2. Conceptual Foundations	The basic conceptual foundations of [x]
	3. The Process of [x] Analysis	The basic steps in the process
	4. Logistics and Software	Technical requirements for participating in the course
	5. Example of [x] Analysis	A simple [x] analysis example Performing some analysis and presenting the results
2	1. Obtaining Data	Sources for obtaining data Suitability of data
	2. Working with [x] Data Files	Accessing data sources Getting the data into R
	3. Reading Data Into R and Creating Metadata	Reading plain [x] data into R Reading a csv file into R Creating metadata

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Module	Topic: [x]	Topic coverage (from course material)
	4. Units of Analysis	Considerations for determining units of analysis
	5. [2 Common Measures]	Suitable measures Calculating in R
	6. [Context and Interpretation]	The importance of context when looking at [x] data Using [specific] command to locate [data items] of interest in [data sources]
3	1. [A] Data summarisation method	Using [A] to find [common measure] and equivalents
	2. [B] Data summarisation method	What is [B] Using a command to find [B]
	3. [C] Data summarisation method	The use of [C] to speed up analyses Performing simple [C] in R
	4. [x] Data editing method]	Considering removing [certain type of data item] to improve analyses Dealing with [type of data] in R
	5. Creating a [type of] Matrix	What [type of] matrix is Creating [name of] matrix in R
	6. [Named] Weighting	The benefit of [named] weighting [Useful frequency counts] [Named] weighting in R
4	1. Measures of distance and similarity	What is [named measure] of distance and similarity Calculating distance or similarity [Named measures] of distance and similarity in R
	2. General Principles of [named tool]	Identifying latent concepts and how [named tool] can help Considerations when using [named tool]
	3. External [named tool]	Considerations when using external [named tool] Applying an external [named tool] in R
	4. Creating Your Own [named tool]	Important considerations when creating your own [named tool] Creating and applying a [named tool] in R
	5. About [type of score]	The concept of [type of score] Calculating [type of score] and scaling data sources
	6. Implementing in R	The steps in applying [type of score] to a dataset

In module two, Tom introduces us to the conceptual building blocks of the method – data sources, units of analysis, context and measurement - and to basic commands that allow us to import data in different formats and start to explore and summarise it. In introducing this material Tom walks through the first two steps in the model he introduced in module one and we get to apply the model and concepts to five different data sets.

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Module three introduces more sophistication, considering different methods for summarising and presenting data. Tom introduces each method, describing how it works in broad terms, how to calculate the measure or carry out the action in the software. He highlights any issues that can arise with using the method and the steps we can take to identify and deal with them. We are guided through how to interpret the output and how to make use of it in the third step of Tom's model. Throughout the module there are opportunities for us to practice, culminating in the chance to put all three steps together.

In the final module Tom starts by introducing us to a set of measures that involve more complex mathematical ideas. Tom does not spend time explaining the maths but rather describes in words what the maths does. We cannot just apply these new measures; however, we have to transform our data first using methods discussed earlier in the course. Tom walks us through how to do this in the software before we get to practice. In the next topic Tom introduces the idea of latent concepts, providing examples to help us understand what they are. He goes on to describe how we can look for items associated with these concepts by using tools. In the rest of the module, we look at these tools in turn, consider the validity of their outputs and learn how to modify and create our own tools before we practice using them.

Tom's place-based course is pitched at quantitative doctoral students. The eKoobz course is pitched at a different type of student and Will is clear it is not "a post-graduate module". The course he and Tom design is a "subset of that" which takes students to the point where they

... feel comfortable going to the next stage, which might be attending the [place-based course] or going further into finding [type of] analysis resources, papers etc., and doing more practice and developing their skills in that way.

However, Sophie tells me she is frustrated that there is not "more theoretical scaffolding around" what she is doing, such as providing references to academic papers, more discussion on the selection of data sources and the interpretation of findings. As an academic she expects the course to be weighted towards methods rather than technical aspects.

In contrast, Nailufar comes to the course without having "any preliminary R knowledge about [this type of analysis]". However, by the end of the course she tells me "I felt that I'd learned about it." She wants more background information on the data sources used in the course, particularly in the activities:

Maybe there should be some kind of conceptual clarifications or instructions or definitions ... I'm not a [particular type of social] scientist and I don't know anything [about the topic] ... this is a social science and everything starts with the meaning, the

description, the definition. If you don't have clear definitions, the figures are just figures. It doesn't mean anything.

Sophie and Nailufar's disciplinary backgrounds and expectations for the course differ. Attracting a broad, international audience presents challenges that Will and Tom attempt to anticipate and respond to when designing the course, and these are described in the next section.

4.3 How is the course taught?

The course structure follows a design approach Will has used before, whereby learners are guided step by step from an assumed place of limited knowledge to a place where they feel more confident and able to tackle more complex and challenging ideas and tasks.

Each topic page has a standard structure and layout that aims to consolidate learning through repetition and doing (see Figure 4-2) and includes video, text, questions and, in some cases, activities. This page structure and layout is influenced by the authoring software used (see section 4.4).

Figure 4-2 Course topic page structure and layout

[Back to menu](#)

Course title

Key coverage

In this topic we will cover:

- [x]
- [y]

Overview

[Video]

[Click to view the code used in the video](#)

Quick Question

[Statement]

Is this statement true or false?

True
False

Submit
Show Feedback

[Heading]

[Text summary of video content, including R code where appropriate]

Knowledge Check

[Question, includes instructions on what you need to do e.g. select one answer]

Submit
Show Feedback

Match, Guided or Structured Activity

[Contains instructions on what students need to do and how to submit answers]

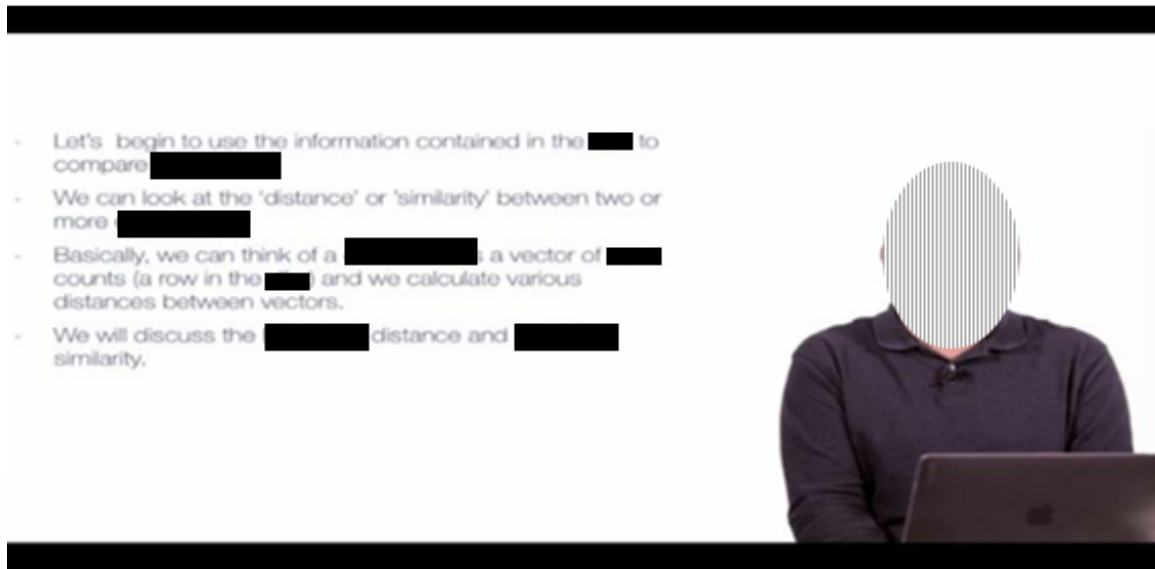
eKoobz logo, [place-based course] logo
© eKoobz and [place-based course]

Video

The video shows Tom poised ready to start talking on a mouse click, about the topic. We can pause and rewind the video at will. The videos are didactic, with Tom talking to camera, using a script he has prepared. In the early videos Tom appears a little awkward, as he gets used to talking to camera rather than a room full of students but his awkwardness with an imagined

audience and the online context melts away as the course progresses. He occupies the right-hand third of the screen, as we look at him. In the white space to his left is the text, almost word for word, of what he is saying (see Figure 4-3). Sophie does not find this repetition helpful: “I didn't feel like I got extra interpretation from watching the videos”.

Figure 4-3 Example of course video presentation



As the course progresses Tom interacts with the software: the syntax Tom is typing is shown in the video as he talks through what he is doing, line by line, like a chef demonstrating how to make a recipe. An instruction underneath the video tells us: “Click to view the code used in the video” and displays a static version of the code Tom is using.

Will designs the course pages with the intention that students will watch the video before reading the text, and the placement of the video before the text aims to encourage this behaviour. However, Nailufar tells me she watches the video after reading the text, mimicking what she does in lectures, where she reads “the class material beforehand”.

Text

To reinforce and reiterate the video content, a text summary of the key points from the video is provided. This text also reproduces the syntax, where appropriate, providing another

opportunity for students to practice the R commands. Sophie, Nailufar and I refer to the syntax when undertaking the activities.

Questions

The course pages include questions that check students' understanding of the topic and provide immediate feedback on whether they get it right. (Table 4-3 shows the sequence and types of questions).

Table 4-3 Type and format of automated questions

Question type	Position on topic page	Number of questions	Format(s)
Quick Question	Immediately after the video	1	<ul style="list-style-type: none"> Students presented with a statement and asked if it is true or false
Knowledge Check	Immediately after text summarising key points from the video	1-4	<ul style="list-style-type: none"> Students presented with a question and either multiple choice or yes-no answer options Students presented with a statement and asked if it is true or false

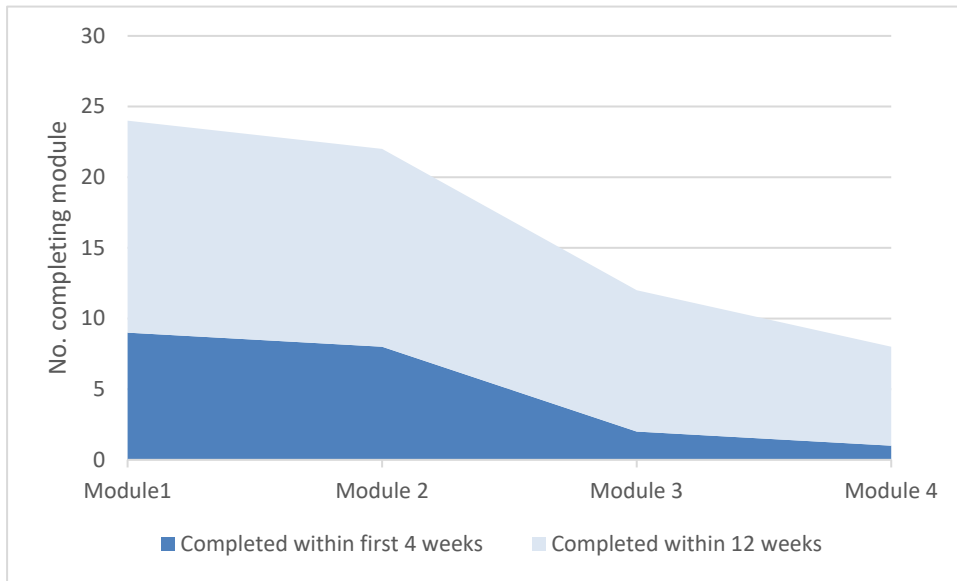
Activities

Fourteen of the 23 course topics include an activity for students to complete. These involve students putting into practice the methods, techniques and syntax Tom demonstrates. As the course progresses the activities become more complex and challenging (see section 4.3.5 for further discussion). [Before describing these activities, I describe students' progression and completion of the course and the pedagogic work of Tom, Will and Hannah.](#)

4.3.1 Students' progression and completion of the course

Of the 26 students who start the course, 24 complete the first module and a quarter (eight students) complete all four modules. Nailufar is one of the seven students who complete the course within twelve weeks; Sophie completes the course within four weeks (see Figure 4-4).

Figure 4-4 Numbers of students completing each module over 4 and 12 weeks



For Will this pattern of completion reflects “one of the biggest issues with online learning” – getting students to engage: “unless you’ve got a real focus and priority to do it it’s much easier not to do it”. However, Shirli cautions against using course completion rates as a metric of student engagement.

So, I would sit there and say ‘oh, we’ve only had two people complete’ or ‘we’ve only had three’ but what we found after following up people who hadn’t completed their course was that they had got everything that they had already wanted from [it]. Just because they didn’t do every single bit of it didn’t feel like for them, it was a problem.

Shirli paid more attention to the student feedback eKoobz sought, [as her role involved her in thinking about how to build on the learning from this first iteration for subsequent ones.](#) Next, I describe the pedagogic work of teacher (Tom), educational technologist (Will) and online course instructor (Hannah).

4.3.2 How teachers go about their pedagogic work: their approach

Tom, Will and Hannah believe it is important to equip students with the knowledge and skills to be able to use the methods and software tools so that they can undertake their own research. For Tom “the goal’s to learn the technique”. In his discipline, and in his department, “methods means statistics ... and data analysis.”

I think especially statistics and maths in general is something that is very hard to learn on your own from reading a book or a website ... it’s just something that you have to practice.

Tom combines an active, hands-on approach to learning with a problem-based learning approach. The latter, he explains provides students with opportunities to appreciate the “research design decisions that [they] have to make depending on what it is [they’re] doing and when” in his teaching.

Hannah (online course mediator) shares Tom’s values of active and problem-based learning. For her it is particularly important to give students authentic learning experiences in which they can learn to solve problems for themselves. She explains that working with open-source software, such as R, where commands and syntax can change overnight, students need to be able to “problem-solve”, “debug” their code and be “independent enough so that they can figure out how to do A without you.” Hannah’s goal is to develop students’ independence and she values the cognitive benefits of problem-based learning in this regard.

Will shares Tom and Hannah’s values of active and problem-based learning and designs a course that gets students “doing stuff and then questioning it, and tinkering and scrutinising [the output]”. However, his experience tells him that students face barriers to learning, particularly in an online environment, and that it is important he and Tom address these barriers when designing the online course.

... if you can remove the barriers ... you’ve got a number of layers which sit between the learner and the learning ... and it’s how do you align those two things? How do you align the learner and the learning and get rid of as many of those layers? Because when they’re this far apart [hands far apart] it’s a big jump, but when they’re this far apart [hands close together] it’s a very small jump.

For Will, these barriers relate to the physical and temporal separation of teacher from students, the complexity and difficulty of the subject matter and the language used, and (with Tom) the variability in learners’ disciplinary backgrounds. Will’s approach to these barriers coalesces around what he calls “learner first” design. [Section 4.3.3 describes how Will, Tom and Hannah’s values shape their planning to teach.](#)

4.3.3 Goal-directed planning for implementing an approach: teacher and educational technologist strategies

Will works with Tom to transform the first week of Tom’s place-based course for an online, asynchronous environment. This transformation is necessary, according to Will because “the online learning environment is quite different to a face-to-face experience ... because the subject expert isn’t there and the learner isn’t familiar with having an online learning experience ...”. In transforming Tom’s place-based course, the strategies Will and Tom adopt

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are guided by their values and favoured approaches: active learning, problem-based learning and learner-centred design. (I describe their strategies in more detail below.)

In his strategies for active learning Tom includes lots of opportunities for practical, hands-on experience of using the method and software with authentic data. The lab sessions of the place-based course are replaced in the online course with activities that involve the use of teaching datasets rather than students bringing their own data. As a strategy that promotes problem-based learning Tom provides the online students with problems to solve that involve them in devising a plan that they go on to implement. Tom agrees the sequencing of these activities with Will, who also helps Tom to transform the “open-ended”, “self-directed” activities from his place-based course into “simpler”, more structured and directed ones.

Tom and Hannah decide that students will use R and method-specific plug-in packages to undertake activities. Students load the software onto our own computers and are deliberately left to manage any changes to software syntax that occur between when the course material is produced and when we take the course, to build our problem-solving skills.

For their ‘learner-first’ design, Will works with Tom to edit his place-based course material to make it suitable for an online, “worldwide” audience whose disciplinary background is unknown. Will identifies the implicit and explicit assumptions Tom makes about the level of prior knowledge his place-based students have, before agreeing with Tom the principles that will guide the selection of content for the online course.

Will draws on strategies he has used in other online courses to restructure and sequence Tom’s material. One goal is to manage learners’ cognitive load within the asynchronous online learning environment, where students will not be able to “put their hand up” and ask a question if something is unclear. Another goal for Will is to build learners’ confidence “in their ability” and engender a sense in them that they are making progress in their learning in the asynchronous online learning environment. Will also reviews Tom’s place-based course material to identify where additional scaffolding will be beneficial to further support learning - what they both refer to as “hand-holding” - and at what point to start to taper this support. They agree a set of principles, including for activities that “allow for a certain amount of independence ... but [are] sufficiently manageable”.

Tom works with Will to refine the rhetorical ways in which he links theory to practice, reflecting the value Tom places on his researcher identity: “I’m a social scientist, I’m a researcher.” This rhetoric is reflected in Tom’s choice of terminology and its representation as text on the topic course pages. [The aforementioned strategies are translated in-situ, as described in the next section.](#)

4.3.4 Translating strategies in-situ: design implementation and teaching tactics

Will, with Tom, translates their strategies for active learning, problem-based learning and ‘learner-first design’ into specific design actions (described below) as they build the online course. Will advises Tom to keep “the theory as light as possible” so that they can focus on moving students on to “completing [-] analysis tasks”. One tactic Tom uses to get us primed for “doing” is to demonstrate the method using the software. Will reproduces the code as part of the course topic webpage, so that we can see what Tom is doing and follow along. Another tactic involves Will and Tom selecting teaching datasets for us to use when practising the methods using R. Will and Tom produce written instructions on how to load these datasets so that we can work with the data on our own computers in an authentic way. The teaching data sets, with one exception, are publicly available and come with the analysis software add on.

In implementing their problem-solving learning strategy, Will explains that he organises Tom’s material in a way that will guide students “step by step” from an assumed place of limited knowledge to a place where we will feel “more confident” and able to tackle more complex and challenging problem-solving tasks. This “step by step” tactic involves Will carefully sequencing Tom’s material, starting with key ideas and concepts, which Tom introduces one at a time. Gradually the complexity and sophistication of ideas and concepts increases, as do the practical exercises that are designed to reinforce our learning. By the end of the course, we are putting together a series of concepts and actions, in sequence, to achieve specific analysis goals and solve problems with limited written instructions. Tom and Will design questions to test our understanding of theory and practice, requiring us to apply our recently acquired knowledge to specific problem-solving activities. They also design student feedback, using the tactics of model answers and, where appropriate, suggestions for additional/alternative actions we can take.

Online course mediator, Hannah, provides support for active and problem-based learning activities to students during the first four weeks of the course. Her role is pre-planned (refer to section 4.4.1) but the tactics she uses to support students’ learning are not. Her in-situ tactics involve responding to students’ questions with questions to get them to reflect and think about things more deeply or from a different perspective, modelling ways of approaching a problem through her answers to their questions and providing feedback on their answers to the problem-solving activities in modules 4.4 and 4.6 (see Table 4.2).

Implementing the ‘learner-first’ design involves Will including step-by-step instructions to the Welcome page and course topic pages to guide students through the course, making explicit what we need to do in an attempt to manage our expectations. This is one of a set of tactics Will and Tom adopt to make Tom’s place-based course suitable for an online audience. Another

involves Tom cutting out “extra examples, tangents ... more theoretical mathematical foundations”, to keep his explanations focused on what we need to know to be able to use the method. We are forewarned early in the course (on the module 1.2 course page) that the course contains terms we may be “unfamiliar with”. Tom and Will provide reassurance: “Fret not! These will definitely be covered in the course”. Their tactic is to translate technical (statistical terms) into plain language when scripting the videos and writing text for the course module pages.

Will advises Tom on how to chop up his place-based course lecture notes into smaller chunks, which become the module topics. Will adopts this chunking tactic to manage students’ cognitive load and help us locate information. Tom’s place-based course lectures are around an hour; his online videos are between two and fifteen minutes. Tom also uses a heuristic to simplify the analytic process, reducing it to a three-step model of working that we can apply to any dataset (see Figure 4-5).

Figure 4-5 Understanding the methods as a three-step process

The 3 Steps

We can consider [redacted] as having three basic steps. Firstly we need to define a [redacted] from the [redacted] we want to examine. Secondly we need to determine what our unit of analysis will be. Finally we need to put a [redacted] matrix together. You can find out more about the steps from the slides below.

Source: Module 1,1 course page

Sophie, Nailufar and I get to repeat these three steps many times throughout the course. This repetition tactic is designed by Will to reinforce learning and build our confidence. However, Tom also uses the model as a device that allows him to link theory to practice, guided by the value Tom places on students “thinking about where you’re getting [the data from], what’s the context, what’s the data that you’re going to process” and connecting these decisions to interpretation.

To motivate and maintain learners’ commitment Will includes quiz-style questions within each topic. These questions are designed to be easy to answer, with the aim of giving students a feeling that we are making progress in our learning. Will also includes a progress tracker on the course module loading page, so that we can see our progression through the course. However, the implementation of the tracker is rushed - it does not work as well as it should, and students get in touch with eKoobz via the IT email address to raise problems. This prompts Shirli to email all students registered on the course in early October to acknowledge the problems and reminds us how to “save your course progress” to rectify the immediate problem, whilst the

team work on improving the tracker for future course iterations. She tells us to get in touch if we have any further questions.

Shirli's eKoobz colleague Emily sends reminders and motivational messages to students during the course. These are emailed or posted on the course discussion forum. She emails us in mid-October to check that everything is "going okay" and to remind us that there is one more week of "learning support" from Hannah. She reassures us: "Don't worry if you're a bit behind" as the course is open until [date] December. She emails those of us who have not yet completed the course, including me, in early November to encourage us to keep going: "Now is a great time to get back on track, enjoy that satisfying feeling of having another module under your belt, and be one step closer to being able to use your new skills." [Completing the course modules involves Sophie, Nailufar and I completing a series of activities, which are discussed in the next section.](#)

4.3.5 What learners and teachers do: tasks

Sophie, Nailufar and I work through the course modules and topics, engaging with the videos and text, and answering the Quick and Knowledge Check questions. Will and Tom include fourteen activities for us to complete. These activities are spread across the course in a particular sequence (see Figure 4-6) and are designed to get us applying methods, tools and principles covered in the topic to data using R. Each activity comes at the end of the topic and includes questions that we have to answer in return for feedback. As the course progresses the activities became more involved and challenging (as discussed in section 4.3.4).

Figure 4-6 Progression of course activities

Topic No.	Activity	
2.1	Review data sources	>>> Increasing complexity, decreasing detailed instructions>>>>
2.2	Review data sources	
2.3	Practice loading and displaying data	
2.5	Practice calculating [x]	
2.6	Practice searching & storing output	
3.1	Practice searching (alternative method)	
3.2	Practice sequence of commands, manipulate parameters	
3.5	Practice sequence of commands & display data	
3.6	Practice sequence of commands, manipulate parameters	
4.1	Practice writing syntax sequence to calculate [x]	
4.3	Practice using tool to extract data, weight & review data	
4.4	Create tool, review, revise & reflect	
4.6	Create sequence of actions to achieve goal & reflect	

Early activities involve a few, clearly defined steps. We have to answer multiple choice questions that check we have applied the steps correctly to obtain the information required. As the course progresses, instructions contain fewer details on the individual steps: instead of saying ‘do this by doing x and y’, they now just say ‘do this’. The number of questions to answer also increases. The final two activities are quite different to the others. The instructions are at a very high level e.g., apply [x]. We have to produce an output (e.g., results, reflections on them) and post these to a designated place on the course VLE. We can only see the posts of other students once they have posted their results during the first four weeks of the course, whilst Hannah is available. She provides feedback on posts, encouraging further thinking. (Figure 4-7 provides examples of the different activities).

Figure 4-7 Examples of course activities

Purpose of activity	Instructions
<p>Review data sources</p>	<p>Topic 2.1</p> <p>Assume you wish to summarise [x] about [y].</p> <p>Which of the following would you exclude from your dataset? Use the links below to review each of the sources and decide which ones would be most suitable.</p> <p>[hyperlinks to sources]</p> <p style="text-align: center;">Submit Show Feedback</p>
<p>Practice commands to achieve specified goal</p>	<p>Topic 2.3</p> <p>Use [named package] to read [named data file] from resources folder for this topic into an R object.</p> <p>Create a [x] using the object that contains the data and display a summary of [x].</p> <p><u>Part 1</u></p> <p>Put the code for doing this into the correct order.</p> <p>Place each item of code in the correct order.</p> <p style="text-align: center;">[3 numbered lines of code are shown]</p> <p style="text-align: center;">Submit Show Feedback</p>
<p>Undertake analysis to answer open question</p>	<p>Topic 4.6</p> <p>In this structured activity, you will apply [function] to [named data set].</p> <p><u>Part A</u></p> <p>Which [items] should you use as [references] and why? Using those references, scale the remaining items and share your output. Present it as a plot.</p>
<p>Reflect on outputs, e.g. strengths and limitations</p>	<p>Topic 4.6</p> <p><u>Part B</u></p> <p>Change the reference items. How does it change your results and what might be the reason for this? Remember to share your updated output and your reasoning.</p>

To deal with a change in how the software applies a method, Will adds a note to module 3.2 course page to let us know that the way Tom specifies the value of [] in the video has changed. The note says: “As of August 2017 [...] method has currently been limited to [...] due to some issues with counting.”

Hannah responds to questions from students, including Sophie, who have problems replicating the code Tom uses in some of the module videos. She provides alternative code and asks them what happens when they run it. She also provides screenshots showing how she navigates the problem.

Tom gets students working with pre-existing datasets that come with the R plugin that we are using. These are real-world data that relate to different countries. Sophie and Nailufar find working with these datasets tricky because they feel that they do not have an understanding of the cultural values and structures that the data represented. This lack of cultural understanding of the data limits their understanding of the method to some extent, as they struggle to interpret the outputs generated from running the analysis syntax and answer parts A and B of activity in Topic 4.6 (see Figure 4-7). Sophie tells me she had to “look [...] up” information about the construct to make sense of the output. She also needed Hannah’s input to understand the purpose of these activities: to get students to appreciate how their choice of data items foregrounds the interpretation outputs. Sophie reflects that these activities “would have been more useful” if there had “been more theoretical scaffolding around what I was doing”.

[Having discussed the role of the teachers and educational technologists in how the course is taught, I now turn to the roles that digital technologies play in their course.](#)

4.4 What roles are digital technologies playing in the online course?

The course module pages are produced by Cowslip Learning using Adapt (www.adaptlearning.org), an open source, eLearning authoring tool and are launched from within the Moodle VLE (www.moodle.org). Moodle is the VLE that eKoobz use to manage all their online courses. Will works with Shirli and a freelancer to develop the Moodle pages with Will scripting the Welcome page content.

Adapt’s interface design and functionality shapes how Tom’s course material is presented to learners on-screen by Will. The course topic page design (shown in Figure 4-2) reflects the Adapt hierarchical page layout structure and templates available to Will. Adapt contains presentational components for media (video), narrative (presenting text and video side-by-side), and text that Will and his colleagues use to construct the course topic pages. Adapt also has

templates for different question formats, such as multiple-choice questions, which are used with most of the course activities (discussed in section 4.3.5).

Will uses a Moodle extension – Course completion status block – to make visible to us our progress during the course. By running a course completion report, Moodle affords teachers the ability to view student progress whenever they want to. eKoobz use Moodle’s course reports to track students’ progress during the course and to target communications at those of us who have yet to complete it (see section 4.3.4). [In the rest of this section I describe the role digital technologies play in providing Sophie, Nailufar and I with feedback on our learning and in supporting dialogue through the online forum.](#)

4.4.1 Role in providing online SRM students with feedback

Will makes use of Adapt’s functionality to provide automated, immediate feedback to us on our answers to topic Quick and Knowledge Questions, and to questions relating to the practical tasks set by Tom. This feedback is in the form of a short statement that tells us if we have got the answer correct or incorrect⁶. Adapt includes a partially correct feedback function, but this is not used by Will for any of the questions included in the course. Will, with Tom, decides how many attempts we can have to answer a question, specifying the condition (final or not final) as part of the question set up.

In providing feedback, Will and Tom devise unambiguous questions and answer options, where there is a clear right answer. Sophie is not convinced that they are always successful in this regard:

There were a couple where I thought, you know, there's some ambiguity here in the question, and there was no way to argue with it. It's put your answer in and you either got it right or wrong.

I also experience this issue when answering the Quick Question in module 2.2. The question asks whether the statement ‘The best [...] format to put into R is [...] with [...] encoding’ is true or false. I get the questions wrong and realise that by *best* Will and Tom mean *easiest*.

Some of the questions to students relate to R software commands and syntax. Sophie tells me that in one or two cases the feedback is incorrect because it does not reflect recent changes to the open-source analysis software and that this is confusing. She lets Hannah know about these issues in a post to the course forum. Nailufar does not mention this issue.

⁶ Details can be found at: <https://github.com/adaptlearning/adapt-contrib-mcq/wiki>

Feedback on Structured Activities

The last two activities in the course (at the end of modules 4.4. and 4.6) involve us responding to questions by posting open text answers and R output in the Structured Activity 1 and Structured Activity 2 forum pages on Moodle. During the first four weeks of the course Hannah is paid to review and post written feedback on our answers.

Will tells me that initially it was unclear who would provide the online tutor support – eKoobz, Cowslip Learning or Hannah, and how much support per student to provide. They agree that Hannah will provide a limited amount of support – “something like ten minutes per student” Will recalls, which fits within the online tutor support budget agreed with eKoobz. To keep within budget Will agrees with eKoobz “not to have too much open-ended discussion” and he recalls

... that really meant that we focused on a scenario where [students] could post, in exchange for posting they'd see everybody else's, and they could then comment if they wanted to.

Getting to the Structured Activity forum pages is not straightforward. An instruction on the module page directs us to the main course page, which contains links to the Structured Activity forum pages. Sophie has difficulty finding the link to the first Structured Activity page and with posting her response, as there is no Reply button on the page. She contacts the course IT support email about the missing Reply button problem on Sunday, as well as getting in touch with Hannah through the course forum (discussed in section 4.4.2) for help. The next day Shirli replies, through the forum, to let her know the problem has been fixed.

Sophie tells me that she really values the feedback she gets from Hannah on her answers to the Structured Activities. The format of the feedback – open ended, tailored specifically to her answers, coming directly from Hannah – is particularly valuable to Sophie, and she engages with Hannah in dialogue through the forum to discuss it.

The TA [Hannah] said a couple of really interesting things in response to what I had said ... She had said something about ways of building [...] or how, I think she said in her work she used [...] models first and then did the [...] scores in a smaller subset of [...]. And so getting that information from her about how she used this stuff was really helpful. And being able to ask her, 'Do you have suggestions for citations I can look up, you know, that do these sorts of things?' That to me was the most useful, in part because that was what I was hoping for most out of [the course]...

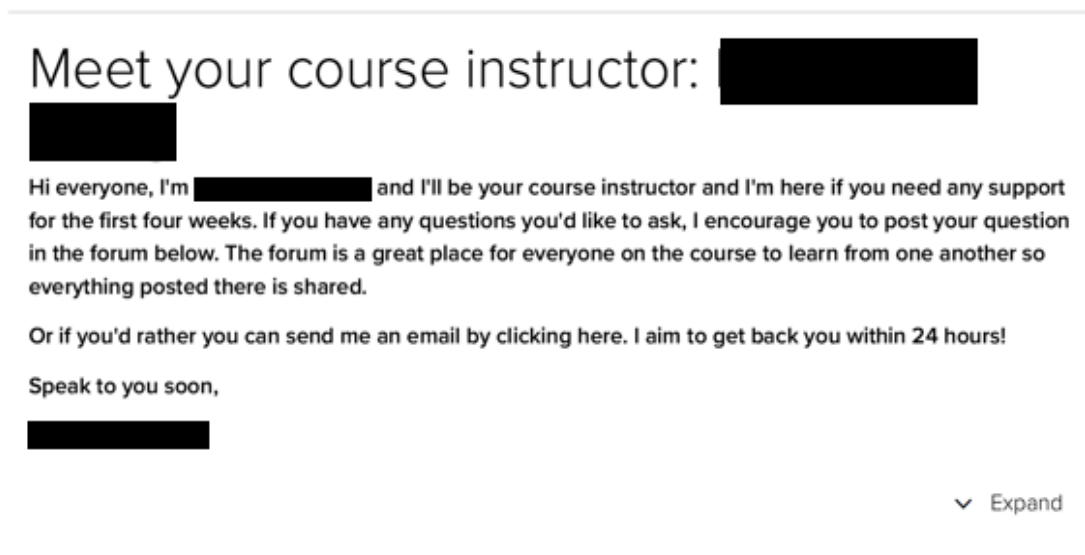
Sophie is the only person to complete the course within four weeks, and as such is the only person to receive feedback. She tells me, it would be useful to see other students' answers and

Hannah's responses to them, but none are posted: "it'd be nice to get a little bit more breadth in terms of how this [activity] could be approached." Unlike Sophie, Nailufar completes the course in November, when Hannah is no longer paid to provide feedback. She completes the activities but receives no feedback. She would have liked "online support", so if she had a question, she could ask someone. She is currently doing a MOOC that offers online support throughout the course.

4.4.2 Online forum

The course includes an online forum that we can use to post any questions we have about the course, which can be answered by other students or by Hannah (during the first four weeks), Will and Shirli. The inclusion of this forum comes as "a surprise" to Will: "we never knew that there was going to be a course forum until the course launched." Reference to the course forum is made on the course Welcome page, as part of the Meet Your Course Instructor information (see screenshot shown in Figure 4-8). Hannah asks eKoobz to use her full name rather than just her first name, as they planned. She tells me, as a female academic "I need to be a little bit defined" rather than just being seen as Hannah, the woman servicing the online forum.

Figure 4-8 Information on course forum included in Welcome page



It takes me a while to find the course forum, as the link to it is not immediately visible. I find it when I expand the contents of Meet Your Course Instructor. Hannah has posted an initial introduction, saying "Hello" and reminding us that we can get in touch if we have any questions about the course material.

Despite Hannah's encouragement, students' use of the course forum is limited: Sophie and one other student post questions. Sophie, undertaking the course during late September/early October, posts to highlight a problem with a guided activity (see section 4.3.4) and to ask:

- Why when she runs the code shown in module 1.5 the output does not look like that shown in the video
- How to post her response to structured activity 1 (module 4.4). This turns out to be a bug in the course page
- When she will receive feedback on her response to the first structured activity and whether it is OK to start the second one before she gets that feedback

Sophie receives answers to her questions within twenty-four hours. For Sophie, having "somebody physically there who can answer my questions ... makes a big difference".

Nailufar, undertaking the course in November when the forum is no longer being supported by Hannah, wants "a chat option" where she can ask questions. Knowing that the forum is no longer being supported, she Googles solutions to her problems. However, the solutions do not explain why the problem occurred: the code appears to work for Tom in the video but not for her, which is frustrating.

Although Hannah is due to provide support over a four-week period, forum activity is sporadic and limited to two students. The lack of forum activity is a little unsettling for Hannah: she can see how many students are enrolled up but has no idea which of us are active, at what stage we are in the course and so has no sense of what likely forum activity to expect.

Hannah feels the "pressure" of having to regularly login to the course to check if we have posted and to respond within 24 hours. She worries about missing a post. In this role she does not feel in control: she is at the "service" of the students, who "dictate the schedule" and can post at any time of the day or night and expect a quick response. This is a world away from the classroom teaching on campus she is used to.

4.5 Summary

Case study one is an example of an online, quantitative SRM short course that is delivered entirely asynchronously. The course is funded by a private company that decided to invest in educational technology support staff to work with content matter experts to develop "high-quality" online SRM courses. The case illustrates the design partnership between teacher, Tom, and educational technologist, Will and the strategies and tactics that they developed to address the challenges they anticipated online SRM students would face. It also illustrates the

Chapter 4

challenges of designing such a course for students with diverse disciplinary and cultural backgrounds, and the kinds of financial and technological constraints that can impinge on online SRM course design. In the next chapter, I describe case study two, an online and hybrid research module of a substantive master's course.

Chapter 5 Case study 2 – the online and hybrid research module of a substantive master’s course

5.1 Introduction

In this chapter I describe my second case, an introductory research methods (IRM) module that forms part of a UK university’s professional master’s course in an applied social science discipline. This chapter has a similar structure to the last. I start by describing the case and introducing the research participants before going on to describe features of the case as they relate to the research questions. I use pseudonyms when referring to organisations and people. Details of the course are summarised in Table 5-1.

Table 5-1 Summary of case study 2

Type of course	Introductory research methods master’s module
Date course first started	September 2017
Course length	30 weeks spread over two semesters
Course format	Asynchronous and synchronous sessions
No. students who started the IRM module	5 (top up course) 11 (2-year course)
Assessment	Summative and formative assessment
Fieldwork	September 2018 – June 2019

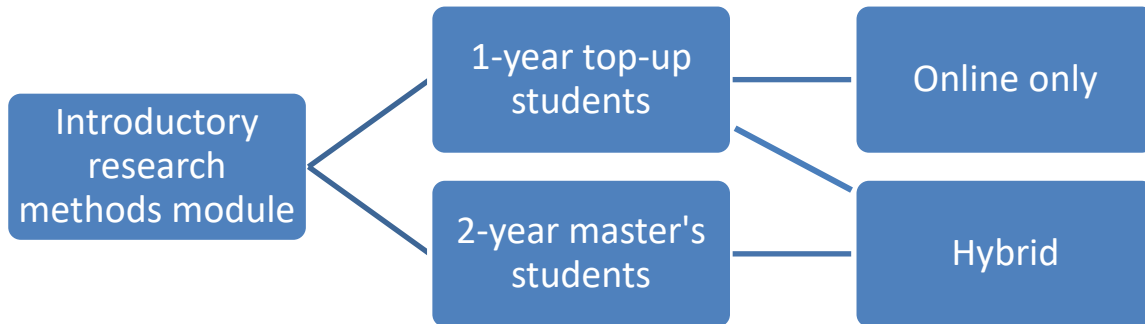
5.1.1 The course

The research methods module forms part of a longstanding master’s course offered by the [discipline] School, Castle Mount University. Castle Mount is a post-1992 institution. Students enrol on a two-year, part-time course in an applied social science discipline, and take the IRM module during their second year.

In 2017 the course delivery model changed from place-based, day-release (one weekday per week during term time) to a hybrid delivery model, involving place-based and online synchronous and asynchronous sessions. The hybrid course was designed so that place-based sessions took place primarily on a Saturday with one mid-week session. The previous year (2016) the School decided to develop a one-year top up master’s course for students holding an existing professional diploma (worth 120 level 7 credits), which consisted of the IRM module and a student dissertation. This one-year version was launched in 2017 and was offered initially

as an online-only course. However, from 2018 it became possible to take it as a hybrid option, with students joining the second-year master's students for place-based IRM sessions (see Figure 5-1). I was granted access to both the hybrid and online versions of the IRM module in September 2018.

Figure 5-1 Delivery modes for the 1 and 2-year master's courses



Julian is responsible for co-ordinating the School's postgraduate programme and is the dissertation module lead. I interview him via Skype in early June 2019. He tells me that the move to hybrid delivery is driven in part by falling place-based student numbers over the past decade, which he suspects is due to a growing reluctance among employers to release staff to attend lectures during the working week. However, lack of student parking at School's new site is also a factor. Julian and his colleagues "consult quite heavily with local employers" and with current and past students in developing the hybrid delivery model for the course. Julian feels that the delivery model "is working and it's had resonance in the market", with the numbers of students enrolling increasing from "13 to 14" in 2017 to "at least 21-22" for the 2019 intake.

Julian tells me that the launch of the online top-up course is driven in part by a change in the "market for qualified [discipline] professionals" over the past ten years. This change sees the master's degree become the predominant qualification for professionals and the School perceives that there might be a demand for a course for those with a diploma to top up to a master's. Buoyed by the earlier successful launch of the School's flagship master's course as an online offering, Julian and his colleagues decide to launch the top-up as an online course. However, Julian tells me that "it's never taken off in the way that we anticipated it might", with only four to six students enrolling each year.

I first meet Julian at the annual postgraduate student conference, which takes place on-campus. I arrive on a crisp Saturday morning in November, to be greeted by a modern campus set back from the main road on the edge of the city centre. The architecture is striking in its design and use of materials. I walk across the granite paving to the conference venue - a smaller

but equally modern building of glass and wood. I find Thea there, getting set up to register students. She is the module leader, and we recognise each other, having already had a brief conversation via Skype. As students start to arrive, some with their families, staff greet them, some by name. Adorned with hot and cold drinks and pastries, the conference refreshment table is the focal point for students, whose chatter and laughter fill the foyer. Thea tells me that some of those attending are students in their first or second year, whilst others have just finished. Many of those who have just finished are members of the last cohort to complete the two-year master's in its place-based format. Thea introduces me to some of the students, including Vanessa, one of the first top-up students, who took the online course last year and Andy, a 'top-up' student who has just started, and is the first student taking the hybrid version.

I speak with Vanessa a few weeks later over the telephone. She is a working mother, managing a full-time job in a senior role that takes her away from home a lot with her studies. Vanessa did her diploma over ten years ago, studying part-time as a "distance" learner. She tells me she always wanted to top-up to the master's and that since completing the master's course she has enrolled on another online course, this time an undergraduate course in a substantive discipline. Her employer has paid for both courses. Vanessa tells me she studies for "pleasure" rather than to progress her career. She tells me that she did not "form any relationships" with other students on the course and when she attended the student conference she was struck by the "camaraderie" among the place-based students. They had a "support system" around them, which she reflected, she did not have. "You need to be highly motivated" to study online, she says.

I also speak with Andy at several points over the coming months, via Skype, email, and in-person when we meet at some of the place-based hybrid sessions that I observe. Andy did his diploma ten years ago. He wants to progress within his organisation and "they expect you to have a research qualification". He tells me he chose Castle Mount's top up course because he had studied for his Diploma there and "they were happy to give me more credit in terms of my prior learning than anyone else." He signs up for the online course because it gives him "more flexibility" as his job is "quite demanding" and he often has to travel. However, he lives near to Castle Mount and wants to sit in on some of the lectures with the second-year master's students, which he is allowed to do.

Paul is enrolled on the top up course and is not able to make the conference due to work commitments. Thea tells me that whilst the top up students were invited to the conference they were not required to attend. Paul works full time for a multinational company, travelling between offices frequently, spending much of his time at airports, "in hotel rooms and on the road". We speak via Skype early in the second semester and he tells me that a place-based

course would not have been practical. Like Vanessa and Andy, he has a diploma. Paul wants the master's so he can progress in his career and because he believes it will make it easier for him to get a job abroad. Castle Mount is not Paul's first choice. He tells me he had a place at another university, but it fell through due to low student numbers. Castle Mount are willing to accept him onto the course, and he joins a few weeks after the course starts.

I also meet a couple of the current second year master's students at the conference who are expected to attend. I meet them again with their peers at a couple of the place-based IRM sessions during the coming months. After one of these sessions Thea and seven of the students (including Andy) discuss and reflect on the research methods module and the session.

Thea and I speak via Skype, email, and in-person in place-based settings over the coming months, whilst the IRM module is ongoing. She leads the planning of the two variants of the module. As well as being the IRM module leader, Thea teaches the qualitative research methods sessions online and place-based. She is also a part time qualitative doctoral researcher at Castle Mount. Thea explains she worked with Julian during 2016-17 to develop and "validate" the top-up course, to ensure it met Castle Mount's requirements for a master's programme. During this time Thea worked with Sandi, the module leader, developing the qualitative research methods sessions. When Sandi left mid-way through the academic year Thea was asked to take over as module leader. She tells me that at this time she "was an inexperienced teacher", who did not have a teaching qualification but who had been involved in "qualitative research around pedagogy methods". She also tells me that she finds it "really challenging" to teach social research methods in "an online environment". When I first meet Thea (in October) she is employed by Castle Mount as an associate lecturer on a temporary contract that specifies the number of hours she will be paid for teaching. However, by February she tells me she has been given a permanent lectureship and will be teaching research methods to undergraduates (place-based) and to master's students on another online course run by the School.

Peter has worked closely with Thea since 2017 on the online course and, for the first time this year (2018-19), on the hybrid IRM module. I speak with Peter via Skype and email during the second semester. He tells me he is a senior lecturer and one of the very few quantitative researchers in the Department. As such he tends to do most of the quantitative research methods teaching, including on the IRM module.

Thea and Peter take responsibility for different elements of the modules. Thea tells me they split the material between them "so you can each deliver according to your own strengths" and because teaching research methods is such an "extensive" topic: "it's too much for one person to deliver". They each are responsible for producing their own course materials, with Thea quality assuring Peter's material to ensure all required elements are covered. [The next section](#)

describes in more detail the structure and content of the online and hybrid versions of the IRM module.

5.2 What is being taught online?

The module is spread over two semesters and consists of a series of taught sessions that introduce students to the theory and practice of social research methods. The module involves ten or twelve sessions depending on whether students are taking the two-year master's or the one-year top up course (see Table 5-2).

Table 5-2 Module content and organisation for the online and hybrid versions

Two-year hybrid master's IRM programme		Session	One-year online top up IRM programme	
Date	Topic		Topic	Date
29/9 10-4pm	Introduction to module Historical & theoretical perspectives How to conduct a literature review Philosophy of qualitative research	1	Introduction to module Historical & theoretical perspectives	24/9-8/10
13/10 10-4pm	Nature of [discipline] research Formulating/clarifying your research topic Philosophy of quantitative research	2	Literature research skills Philosophy of qualitative research	8/10-22/10
13/10 -7/11	What is a good proposal? Research ethics	3	The nature of [discipline] research Formulating / clarifying your research topic	22/10-5/11
7/11 5-8pm	Research design and theory: quantitative methods Research design and theory: qualitative methods	4	Philosophy of quantitative research Developing the dissertation proposal	5/11-19/11
12/11 -3/12	Individual tutorials based on draft proposals	5	Research design & theory: quantitative methods	19/11-3/12
		-/6	Research design & theory: qualitative methods (including ethics)	3/12-17/12
		-/7	Pilot Research Project (Part I)	7/1-28/1/2019
2/2 10-4pm	Pilot project	6/8	Pilot Research Project (II)	28/1-18/2
		-/9	Feedback & individual enquiries	18/2-11/3

Two-year hybrid master's IRM programme		Session	One-year online top up IRM programme	
Date	Topic		Topic	Date
4/3 – 25/3	Quantitative data analysis workshop using IBM SPSS ⁷	8/10	Quantitative data analysis workshop using IBM SPSS [®]	21/3 – 11/4
13/4 10-4	Principles of qualitative data analysis NVivo ⁸ Dissertation writing	9/11	Qualitative data analysis (using Nvivo) Principles of qualitative analysis	11/4 – 2/5
14/4 – 6/5	IBM SPSS [®] clinic ⁹	10/E	IBM SPSS [®] clinic	14/4 – 6/5
		-/12	Writing a dissertation	2/5 – 23/5
- Indicates session not included in either hybrid (-/) or online (/-) course E indicates extra session added to the programme				

In the first session, Thea and Peter introduce themselves and outline the aim, objectives, and structure of the IRM module, highlighting deadlines for assessments. They also highlight resources and how to locate these, including additional reading, videos, extra course material, the library service and the Study Advice Service, which provides advice on study skills and numeracy.

The first semester introduces students to theoretical perspectives, philosophical ideas and concepts that relate to research methods, such as ontology, epistemology, reflexivity, and types of argument. Students are introduced to the research process and to the theoretical and practical issues involved, such as measurement, causality, validity, recruitment, and ethics, and to different research methods, such as surveys, case study and ethnography. These sessions lay the foundations for students' first assignment: to draft their dissertation research proposal. Thea sets out the requirements of the research proposal to both sets of students.

The second semester commences in January, with students expected to start their dissertations in February. Over the coming weeks students are introduced to different data collection methods, such as survey questionnaires, qualitative interviews and observation, including their features and the types of research question that can be answered using these methods. Students undertake a pilot project, which forms the basis of students' second assignment. Once complete, students go on to look at different methods of quantitative and qualitative data analysis. Thea runs a final session on dissertation writing, going through the assessment

⁷ IBM SPSS[®] Statistics (<https://www.ibm.com/uk-en/products/spss-statistics>)

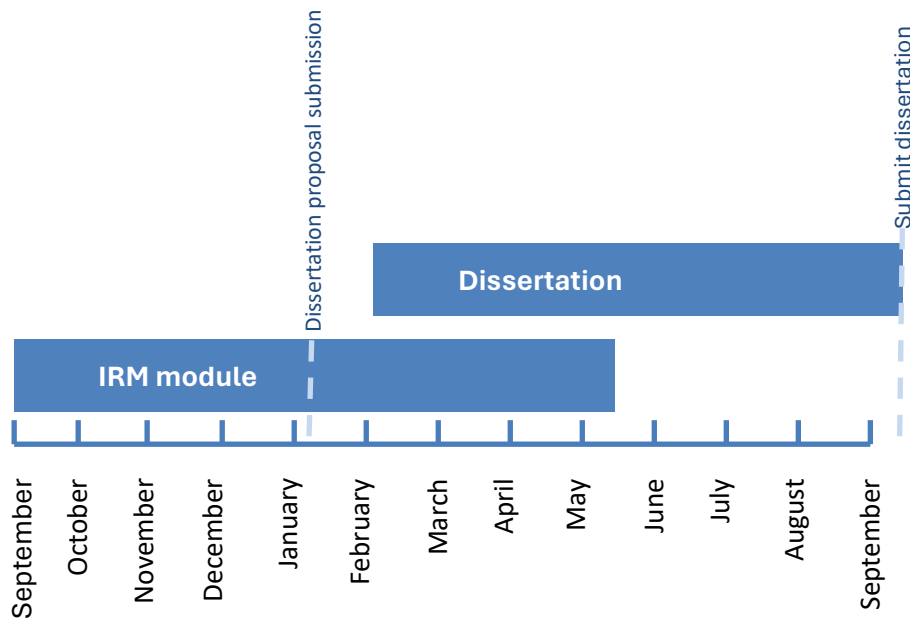
⁸ QSR International NVIVO (<https://www.qsrinternational.com/nvivo/home>)

⁹ The IBM SPSS[®] clinic is for students who are undertaking a quantitative dissertation and would like additional support.

criteria, the sections it should include and providing guidance on how to write a good dissertation.

The order in which topics are covered is deliberate Thea tells me, reflecting the research study lifecycle. The scheduling of sessions is also deliberate Thea explains, “so that by the time students are meant to be starting their analysis they’ll have a seminar on data analysis”, as illustrated in Figure 5-2.

Figure 5-2 Relationship between the IRM module and student’s dissertation



The content of the IRM module has been preapproved by the university. Thea explains that this means the content is “fixed” and the topics covered are the same in both variants of the IRM module. However, there are differences in the scheduling of topics in the first semester (see Table 5-2). These differences reflect variations in the pace at which topics are introduced in the first two sessions. The second-year master’s students cover three or four topics in each of the first two sessions, whereas the top up students cover only two. To bring both sets of students to the same point in the curriculum by the end of the first semester, the top up students have three more taught sessions scheduled than the two-year students.

During the course some changes are made to the IRM programme for timing (scheduling) reasons. Initially the qualitative analysis session is scheduled to take place prior to the quantitative analysis session but the order is reversed ahead of the start of the second semester. Also, in the original module plan NVivo and qualitative analysis are split across two sessions for the two-year master’s students, however these sessions are later combined into one session, mirroring what happens for the top-up students. At the end of the module students are asked to provide feedback via an evaluation form.

Vanessa and Andy find the first few weeks of the IRM course for top-up students difficult. Vanessa finds returning to education after twelve years away tougher than she thought it would be and she initially feels overwhelmed and anxious:

[I was concerned] ... would I be good enough? Would I, you know, produce the right quality of work? And 'could I do it?' and all that.

She gets “really stuck with paradigms” and with how the paradigms relate to research methods. She tells me she “would like to have chatted that through with someone because I had to pick my own way through it really.” Had she contacted Thea or Peter for help she thinks that they would not have hesitated in providing it but “I didn't ask, and it wasn't offered”.

Andy also finds the first few weeks difficult, telling me he “struggled to get up to speed” with the reading. He found the “academic language ... tricky at the beginning” as he “hadn't been reading anything hugely academic” before starting the course. He also suffers from “information overload” during the first semester as he and the other students are exposed to numerous theories, concepts and methods. For Andy, who took the hybrid version of the top up IRM module, “being [physically] in the classroom” with Thea, Peter and other students meant that he “joined the conversation” and then “it started to make sense”.

I felt the human contact in class helped me feel like I was back in an education institution. It helped me feel like I was studying with a group of people, because that felt important to me at the time [in [those](#) first weeks of the course]. I wasn't getting that, and I'm still not really getting that from being online.

Paul (also a top up online-only IRM student) comes from an “academic background”. When I speak to him in February, he is finding the course “really interesting” and not that difficult. He tells me he is “reasonably self-confident” and a “self-starter”. What he feels the course is missing is “that conversation and the debate around the topics” covered and the reading they are asked to do. He reflects on how the learning experience so far has been quite “isolated”:

It's very much me and Thea, or me and Julian, or me and Peter, as opposed to me as part of a collective cohort.

Paul is quite sanguine about this: he tells me it “is a pity, but it's also what I signed up knowing”. [This variation in students' backgrounds and expectations of the course is something that online SRM teachers Thea and Peter attempt to anticipate in designing and delivering it and is discussed in the next section.](#)

5.3 How is the IRM course taught?

Thea and Peter deliver the IRM course using a mix of asynchronous and synchronous sessions. The sessions are split between online and place-based delivery for the two-year master's students, whereas for the one-year top up students' delivery is entirely online (see Table 5-3). Students access course content through Castle Mount's LMS (see section 5.4).

Table 5-3 Mode of delivery of individual IRM sessions for the two and one-year students

Two-year hybrid master's IRM programme		Session	One-year online top up IRM programme	
Mode	Topic		Topic	Format
Place-based	Introduction to module Historical & theoretical perspectives How to conduct a literature review Philosophy of qualitative research	1	Introduction to module Historical & theoretical perspectives	Online Classroom activity Slides with voice over Recorded lecture
Place-based	Nature of [discipline] research Formulating/clarifying your research topic Philosophy of quantitative research	2	Literature research skills Philosophy of qualitative research	Slides with audio Discussion forum
Online	What is a good proposal? Research ethics	3	The nature of [discipline] research Formulating / clarifying your research topic	Slides with audio Discussion forum
Place-based	Research design and theory: quantitative methods Research design and theory: qualitative methods	4	Philosophy of quantitative research Developing the dissertation proposal	Slides with audio Discussion forum
Online	Individual tutorials based on draft proposals	5	Research design & theory: quantitative methods	Slides with audio Discussion forum
		-/6	Research design & theory: qualitative methods (including ethics)	Slides with audio Individual feedback on draft proposal via Skype
		-/7	Pilot Research Project (Part I)	Slides with audio Preparation

Two-year hybrid master's IRM programme		Session	One-year online top up IRM programme	
Mode	Topic		Topic	Format
Place-based	Pilot project	6/8	Pilot Research Project (II)	Practical
		-/9	Feedback & individual enquiries	Individual feedback on pilot research project via Skype
Online synchronous 'classroom'	Computerised quantitative data analysis [IBM SPSS®]	8/10	Quantitative Data Analysis Workshop using IBM SPSS®	Online synchronous session
Place-based	Principles of qualitative data analysis NVivo Dissertation writing	9/11	Qualitative data analysis (using NVivo) Principles of qualitative analysis	Slides with audio NVivo exercise and sample data Discussion forum
Online	IBM SPSS® clinic ¹⁰	10/E	IBM SPSS® clinic	Online (synchronous event)
		-/12	Writing a dissertation	Slides with audio Discussion forum
- Indicates session not included in either hybrid (-/) or online (/-) course E indicates extra session added to the programme				

Thea tells me that “some topics ... lend themselves better” to the online teaching and learning space, such as the “ethics” session and the “SPSS workshop” because they are “so practical”. These topics are taught online to the two-year master's students. However, she tells me that other topics “really need that discussion and debate” to develop an understanding “and that only really happens over time, through repeated conversations”. These topics are taught in a place-based setting to the two-year master's students.

The mode of delivery of the qualitative analysis and NVivo session is changed part way through the course. The NVivo session is initially scheduled to take place as a synchronous online session for both the second-year master's and the top-up students. However, this is changed for the second-year master's students and the session is run in a place-based setting by Thea. For the top up students, the session is delivered online, asynchronously by Thea using PowerPoint slides with voice over. (The reasons for this change in mode of delivery are discussed in section 5.4.5.)

Each IRM session has its own page on the Castle Mount LMS. Session pages contain a short description of what the session covers, recommended reading, and links to course materials

¹⁰ The IBM SPSS® clinic is for students who are undertaking a quantitative dissertation and would like additional support.

and resources, such as teachers' slides, extracts from research reports, how-to guides, and links to YouTube videos. [In the rest of this section, I describe Thea and Peter's teaching values \(section 5.3.1\) and how these shape their plans to teach the IRM module \(section 5.3.2\), their teaching in-situ \(section 5.3.3\) and what they and students do \(section 5.3.3\).](#)

5.3.1 How teachers go about their pedagogy: their approach

As a relatively inexperienced teacher, Thea explains that her "go to" place for ideas on how to teach research methods is "NCRM" [National Centre for Research Methods].

I remember one particular article that I've really taken to heart and which I try to implement in my teaching ... They used an expert panel as their methodology, and they talked to a number of very experienced teachers about their experiences of teaching research methods, and I then tried to draw out some principles.

She tells me that one of these principles, which she has tried to adopt in her teaching, is to take students "behind the scenes of research" to help them "realise that it's never a straightforward process". She also values getting students doing things and learning through reflecting on the experience, for example designing interview guides and interviewing each other. These learning through doing and experiential learning approaches are implicit, Thea does not use these terms. Rather I observe them in the course materials and in the sessions I observe Thea teach.

Thea's pedagogy is also infused with pragmatism. She is mindful of the aims and objectives of the IRM module, and her approach aims to support students' learning so that they can undertake their own research. She values getting to know her students and helping them to discover their research interests. This student-centred approach is complimented by her identity and values as a qualitative researcher. She values sharing authentic research experiences and draws heavily on her own experience as a qualitative researcher to engage students in qualitative research through dialogue and reflection to ignite their "qualitative imagination". However, she struggles to articulate her values in terms of a holistic approach to her teaching: her pedagogy is emergent.

Peter also struggles to articulate his approach to teaching quantitative research methods. He tells me that he inherited the "general direction" for the quantitative elements of the IRM module from Sandi and that he has "tweaked and twisted" the material to make it more suited to the needs of the students and "their dissertations". He is mindful that his students are busy professionals, and he thinks "very carefully" about whether they need to know x or y "given the amount of time they have". Implicitly, Peter's approach is pragmatic. He (and Thea) talk of the challenges of teaching students, often with limited academic backgrounds, social research

methods in a short amount of time: “how can we expect students to do any meaningful quantitative analysis if we give them four and a half hours on the subject?” Peter tells me his guiding principle is “... like driving a car, you don’t really need to know how the engine works, but you need to know how to steer and how to indicate.”

His goal is to equip students with the knowledge and skills they need in quantitative methods to be able to undertake their own research. In support of this goal Peter also implicitly values an active learning approach, in which students get to “apply” their learning and get “hands on” with data. However, for Peter, the “real learning” happens when students “do it in their own project [dissertation]”, as “that’s when they then get the confidence”. In this regard, like Thea, Peter values experiential learning but for Peter, this happens in the dissertation rather than the IRM module. Peter also believes it is important that students have a good understanding of the concepts and principles underpinning quantitative methods, as this is the way he was trained. I now turn to how Peter and Thea planned to teach the IRM course.

5.3.2 Goal directed planning for implementing an approach: teacher strategies

In developing the IRM module Thea and Peter employ strategies that reflect their values, identities and experiences as researchers, which inform their implicit approaches: pragmatic; active; experiential; and [student-centred learning](#) (these are discussed in more detail below). However, their planning is also informed by the aim, as Peter tells me, of making the IRM module “as similar as humanly possible” for both sets of students, irrespective of the mode of delivery (place-based or online). Indeed, when I first meet Thea, she believes that “as much as possible I’ve got to replicate the [physical] classroom experience”.

Thea and Peter’s strategies for pragmatic learning involve scaffolding the learning of new ideas and concepts extensively throughout the IRM module. Thea tells me “it’s a hand-holding module” that supports students, some of whom “have not been near a university in 20 years or ever”, as they undertake their own research. This scaffolding includes providing students with summaries of the key features of a perspective, theory, or method; providing definitions; modelling thinking and decision-making; and providing step-by-step instructions. Peter simplifies course content, removing quantitative material included by Sandi that is “very theoretical” or “where I know [students] don’t really need it for their dissertation” to manage students’ cognitive load. Both Thea and Peter use repetition to reinforce learning, going over key ideas and concepts during taught sessions. They plan activities and assignments that afford opportunities to provide students with formative feedback to support their learning and develop their research skills, particularly during the first semester. The course is structured so that

foundational ideas, such as ontology, epistemology, and measurement, come early in the course. These ideas are returned to later, when discussing the interpretation of data.

In their strategies for active learning Thea and Peter include opportunities for practical, hands-on experience of applying theory to practice, using methods and software with authentic data in workshop sessions. Alongside these datasets, Peter provides students with “an electronic workbook” that contains step by step instructions and exercises that he encourages students to work through in their own time. He tells me this workbook and the datasets were created by a former member of the School. As a strategy that promotes experiential learning, Thea and Peter include a pilot research project, which involves students reflecting on what they have learned and how they will apply this learning to their own research. To encourage students to engage in reflection and new ways of thinking, Thea (with Julian) makes this part of a formally assessed assignment.

Thea’s strategies for student-centred learning involve engaging students in one-to-one dialogue and group discussions to learn more about them [early in the module](#) - their interests and how they are getting on in their learning. She uses students’ interests and experiences as pedagogical hooks with which to show students how research methods can be useful to them in their work, ~~early in the module~~.

So, I’m trying to get them to think about the actual issues, the real things that are going on ... that they have a good grip on because they are knowledgeable practitioners ... and have unusual insight into what goes on because they live and breathe it ...

I observe her using these dialogic strategies to motivate and encourage students.

In planning their sessions both Thea and Peter draw on their pedagogical roots, introducing students to key concepts and foundational ideas before linking these to practice. They also decide to use [one of Thea’s projects](#) as a case study ~~project based on a study Thea’s worked on~~ and numerous examples from their own research, ~~as a way~~ to bring theory to life and help students visualise how these ideas and methods may be applicable to their own research.

Thea and Peter attempt to keep the slides and activities they use for each session as similar as possible, irrespective of the mode of delivery. I observe few differences in the substantive content of the slides Peter and Thea use to cover the same topic [in different delivery modes](#). Where there are differences, these reflect implicit attempts by Thea to make the slides as “clear” and concise as possible for online asynchronous delivery. However, I observe some differences in the planning of activities, with greater use of group discussion activities by Thea and Peter in their place-based sessions and greater use of self-reflection activities in online sessions (refer to section 5.3.4).

Thea explicitly attempts to deal with the absence of the teacher in the online learning space by ~~attempting to break~~ing down material into “manageable chunks”, to reduce the cognitive load of the top up students in the early stages of the module. However, Thea tells me “I still think it’s quite dense.” She writes session plans so that the top up students “have an overall sense of [the] purpose of that particular session” and instructions setting out what students should do, in what order, for each session. [What Thea and Peter do in-situ – their tactics – are discussed in section 5.3.3.](#)

5.3.3 Translating strategies in-situ: teacher tactics

I observe Peter and Thea deploy a range of tactics that are situated within their overall goal of preparing students to undertake their own research projects, which implicitly support the strategies they use to achieve this goal. Their tactics are often cross-cutting, supporting more than one strategy. Thea and Peter use a range of tactics that support their pragmatic approach to supporting students’ learning that are catalysed by student-teacher interaction. I observe them providing impromptu explanations, modelling thinking and reiterating links between theory and practice in response to students’ questions and in their feedback on students’ responses to activities and assignments. They help students develop their initial research ideas or understanding of a topic by asking students further questions and offering their thoughts and suggestions for further consideration and discussion. Peter uses the whiteboard, drawing diagrams to accompany his verbal explanations of foundational concepts in quantitative research methods. I observe he does this in both his classroom sessions and the synchronous online session he runs.

In support of their active learning approaches, Thea and Peter check students’ understanding of foundational concepts when demonstrating how to use a method or software by asking questions. I observe Peter checking in with students regularly during his synchronous online SPSS session: “You still with me? ... Does this make sense?” he asks. He waits for students’ responses before deciding whether to move on. In her place-based NVivo session I observe Thea reading the room – “You’re looking puzzled. Are you OK?” she asks the students. Like Peter, I observe Thea seeking feedback from students to guide the pace at which she walks them through how to use the software in her place-based session. These are tactics of the synchronous teaching space: I do not observe their use in asynchronous online sessions.

Thea uses dialogic tactics, reflecting her student-centred approach and strategies. “Feel free to ask whatever and don’t assume you are the only person who doesn’t know :)", she writes in an announcement to the one-year top up students early in the semester. I observe her encouraging

students to ask questions, in the classroom and, with less success, through the online discussion forum and sharing “good” questions with other students.

Thea also uses dialogic tactics in support of her experiential learning strategies, to prompt (further) reflection. In her written feedback to Paul on his outline research proposal she asks him “What useful data do you imagine these interviews to be generating?” and “What would interviewing these people give you?” With Andy, in a qualitative interviewing synchronous online role play session, she starts by asking him to reflect on how the interview felt from his perspective, prompting “Why was that?” to elicit further reflection. She tells me that she wants the top up students to support each other, but Paul reflects that there is “not much peer support because we don’t know each other enough to offer that.”

Teaching in the asynchronous online space poses some issues for Peter and Thea and their tactics. Peter tells me he “tries to play it by ear a bit” in his place-based sessions “depending on what students want to know”, but that this is “less possible” online and depends on whether students raise questions in the forum. Thea tells me that “getting students to engage online” without it “taking up so much of my time” is a challenge. She sets up weekly synchronous online ~~place-based~~ tutorials with the top up students to try to address these challenges, employing her dialogic tactics to get to know the top up students better, and to provide more personalised learning support, which she “really like[s]”. Andy tells me he finds these “conversations” with Thea “really useful” as they have “given me a little nudge in the right direction” and “signposted me to reading that has helped me narrow down what I’m thinking about.” For Paul, they help him to “stay on task” and provide him with an impetus to engage with the course material, as he knows Thea will ask him to talk about it. I observe that the use of emoticons is largely absent from students’ and teachers’ forum posts: only two posts use :), one by Thea and one by a hybrid student.

[In preparing their students to undertake their own research, Thea and Peter get their students to undertake activities, which are discussed in the next section.](#)

5.3.4 What learners and teachers do: tasks

Thea and Peter include activities for the one-year top up and two-year master’s students to complete, in addition to the required course reading. These activities are spread across the IRM module (see [Table 5-4](#)). They are designed to support students’ learning of both theory and practical application to their dissertations. Early tasks get students to engage with important ideas, concepts, and ways of thinking and to apply them in increasingly more complex and abstract ways. These early tasks also get students (particularly the one-year top up students) reading and writing about academic literate.

Table 5-4 Student activities by mode of delivery

	Tasks	
	<input type="checkbox"/> Individual activity	<input type="checkbox"/> Group activity
Topic	One-year top up students	Two-year master's students
Introduction	- Introduce self to teachers & other students	- Introduce self, share interests, reflect on course so far
Perspectives on [discipline theory]	- Practise thinking about a specified research problem from different philosophical perspectives	- Practise developing and applying a definition to a social construct
	- Practise writing by posting thoughts to the online forum	- Practise applying different philosophical perspectives and concepts to a social construct
Nature and philosophy of qualitative Research	- Discuss the differences between perspectives and their potential consequences for research, coming up with examples	
	- Practise writing about academic literature	- Practise thinking about a research problem in different ways
	- Practise thinking about a research problem in different ways	
How to conduct a literature review	- Practise writing by posting thoughts to the online forum	
	- Practise literature searching and identifying main themes/theories and methods in each article and scope/aims of journal	- Practise literature searching and identifying main themes/theories and methods in each article and scope/aims of journal
Nature of [discipline] research and formulating and clarifying a research topic	- Reflexive activity: mapping factors shaping own research project	- Reflexive activity: mapping factors shaping own research project
Philosophy of quantitative research	- Whilst going through slides - practise thinking related to forum activity	- Create your own hypotheses
	- Discuss differences between quantitative and qualitative research methods	- Discuss differences between quantitative and qualitative research methods
	- Practise writing by posting to the online forum	- Practise writing by posting to the online forum
Developing a research proposal	- Read exemplars	- Read exemplars
	- Listen to talk by experienced researcher	- Listen to talk by experienced researcher
	- Produce research outline of dissertation project	- Produce research outline of dissertation project
Ethics	- Discuss one of the ethical dilemmas provided	- Discuss one of the ethical dilemmas provided
	- Practise writing	- Practise writing
Research design and qualitative data collection		- Discuss kinds of data to collect when using different qualitative methodologies

	Tasks	
<input type="checkbox"/> Individual activity	<input type="checkbox"/> Group activity	<input checked="" type="checkbox"/> Mix (individual and group activity)
Topic	One-year top up students	Two-year master's students
Research design and theory writing: quantitative methods	- Discuss advantages and disadvantages of specified survey sampling methods	- Discuss advantages and disadvantages of specified survey sampling methods
Assignment 1: research proposal		
Thea's pilot project slides	- Reflect on issues related to assignment (situating project, design and content of qualitative interview), using prompts provided by teacher	- Preparation ahead of place-based session: reading, come up with some research questions
	- Practise drafting qualitative interview guide	- Discuss issues related to assignment (situating project, design and content of qualitative interview), using prompts provided by teacher - Practise drafting interview guide - Practise interviewing each other and reflect on experience/ learning
Peter's pilot slides	- Reflect on specified research question using prompts provided by teacher	- Discuss issues to consider when designing a quantitative study on specified research question, survey topics and analysis variables to include
	- Practise writing survey questions	- Draft online questionnaire using web software
	- Practise using web questionnaire software	- Interview each other, share questionnaire with the class and reflect on experience and learning
Pilot project	- Collect data using own interview guide (interview Thea) and web questionnaire (send to five people)	
	- Reflect on learning and application to own research project	
Assignment 2: Research methods portfolio		
[Quantitative data analysis software session]	- Load software and datasets	- Load software and datasets
	- Practise using software commands	- Practise using software commands
	- Further opportunities to practise using software by working through exercises on own	- Further opportunities to practise using software by working through exercises on own
Qualitative data analysis	- Practise looking at data from different perspectives	- Practise looking at data from different perspectives

	Tasks	
	<input type="checkbox"/> Individual activity	<input type="checkbox"/> Group activity
Topic	One-year top up students	Two-year master's students
	- Practise developing codes	- Practice developing codes
[Qualitative data analysis session]	- Load software and datasets	- Load software and datasets
	- Practise using software, working through exercises	- Practise using software, working through exercises
Dissertation writing	- Read exemplars, dissertation guidelines	- Read exemplars
		- Discuss students' reflections

Activities in the first half of the module are designed to support students with the two formally assessed assignments: a dissertation proposal and a research methods portfolio. The portfolio must include the web questionnaire and qualitative interview framework students designed as part of the pilot project. In addition, students write - what the module guide calls a 'reflective essay' - about what they learned from undertaking the project.

In the latter stages of the module, activities are designed to support acquisition of specific research skills, such as questionnaire design or the coding of interview transcripts using NVivo and involve students practising these skills. The activities are based around the case study project (used throughout the module) and students work with authentic research questions and data. Sam, Sara, Sol, and Valerie (two-year master's students) tell Thea and I how the activities they engage in bring to life the different qualitative analysis methods Thea talks about in the Qualitative Analysis and NVivo sessions that day. Sam reflects that "once [he] saw the result" [of the practical exercise] he could see "oh, that's what it's for!".

Peter and Thea use some of the same activities with both the one-year top up students and the two-year master's students, reflecting their goal to keep the module as similar as possible for both sets of students. However, the way Peter and Thea get students to engage with these activities differs depending on the mode of delivery (see [Table 5-5](#)).

Table 5-5 Implementation of the same task online and place-based

Topic	Online task	Place-based task
Nature and Philosophy of qualitative research	Contribute to the forum. Imagine how you might go about research in ways that does not involve numbers. Some questions to guide your thinking: [Questions listed] Upload your contribution.	In groups of three, ponder this question! Imagine how you might go about researching [context] in ways that do not involve numbers. Some questions to guide your thinking: [Questions listed – these are the same as those used online] Talk your thinking through with your neighbours (groups of three)

Topic	Online task	Place-based task
Formulating and clarifying a research question	<p>On your own, make your own situational, positional and/or social world map.</p> <p>Consider moving the elements in your maps around and ask yourself what the relationships are between them.</p> <p>The maps are just for you.</p>	<p>On your own, make your own situational, positional and/or social world map and discuss as a group.</p>
Pilot	<p>Create an online questionnaire to address the specified research question. Distribute to/recruit 5 people to complete it.</p> <p>Collate the data and discuss it with Peter, considering how the data link to the specified research objectives, and what you have learned about the process.</p>	<p>Create an online questionnaire to address the specified research question in groups.</p> <p>Share online questionnaire with the class (put up on the displayed on screen by Peter).</p> <p>Students talk through the questionnaire, question by question, explaining their rationale for each question, the type of data it would provide and how that would allow them to answer the research question.</p>
Pilot	<p>Create a qualitative interview framework to address the specified research question.</p> <p>Use it to interview Thea, and</p> <p>Discuss with Thea how you felt it went, and what you would do differently next time [one to one].</p>	<p>Create a qualitative interview framework to address the specified research question.</p> <p>Using your guide, in triads, take it in turns to interview each other, with one person acting as an observer.</p> <p>Discuss how it felt to be the interviewer and to be interviewed</p>
Qualitative data analysis	<p>For each analysis method, on own: read the interview extract and answer a series of questions on own. [Answers are not shared]</p> <p>Example: Grounded Theory</p> <ul style="list-style-type: none"> • Read the interview extract • What participant action/interaction do you see? • Use the gerund to code line by line • Take the codes that stand out, that seem to speak to your data, write memos about them 	<p>For each analysis method: read the interview extract. Discuss and answer a series of questions in small groups and share with whole group.</p> <p>[Questions same as those used in online session]</p>

For example, Thea asks students to make different kinds of maps as part of an early session on the Nature of [discipline] Research in an Interpretivist Framework. In the place-based session students sit together making their own maps and then discuss them as a group. Two-year master's student Valerie reflects that these "exchanges with others really helps complexify [her] learning". In the online session students undertake the activity on their own. They are not

required to share them – the slide says: ‘The maps are just for you – to help you get into your research inquiry more’.

Thea reminds students to post their responses to the asynchronous online activities to the learning forum, where she and Peter provide feedback. [The posting of responses and provision of feedback to students involve Thea and Peter making use of the functionality of digital technologies. The roles these technologies play is discussed in the rest of this chapter.](#)

5.4 What roles are digital technologies playing in the online course?

[In this section the roles of the digital technologies Thea and Peter use in the IRM course are described, specifically its role in course design, dialogue, student feedback, assessment and in synchronous interactions.](#) The two-year master’s and the one-year top courses have their own course pages on the Castle Mount LMS, which is Moodle. Students log into Moodle from their own internet-enabled devices. Students select the IRM course from the landing page. (I am given access to both courses on Moodle.)

5.4.1 Role in course design

Thea and Peter create their course materials outside of Moodle. Thea tells me she creates her slides with voice over using PowerPoint rather than Moodle because colleagues advised her this is easier. These are colleagues who teach on the School’s flagship master’s course. Using PowerPoint’s record audio function Thea reads a script she has written to accompany each slide: “I’m not very fluent at talking off the top of my head” she tells me. This process takes “days”.

Peter uses PowerPoint slides but does not use a script when recording his voice over. He tells me he is not “entirely happy” with using voiced-over slides and is moving to uploading recordings of his synchronous sessions. He does this for the top up students in their first session on Historical and Theoretical Perspectives, uploading lecture recordings as Mpeg files.

Thea sets up the Moodle course pages with little technical support. She has not used Moodle before. She tells me there is a “digital media adviser” for the School, but the adviser “can only be in one place at one time”.

The layout of the IRM module pages reflects Moodle’s interface design options and functionality and the design standards developed by the School. Thea is not the Moodle administrator. She adds content to the Moodle welcome page and session pages, using Moodle menu options to layout the session pages in a weekly format. This interface design ~~means~~ [presents](#) students ~~see~~

with a list of sessions. By ~~and can clicking~~ on the session title ~~they can and~~ see the session description and resources uploaded by Thea. In some cases, she uploads articles from the reading list as PDF (Portable Document Format) files. ~~where~~ These ~~articles~~ are written by (former) members of the School (see Figure 5-3).

Figure 5-3 Example of one-year top up IRM module Moodle page

2 8/10-22/10 Philosophy of qualitative research & Literature research skills










In session 2, we will talk about the nature and philosophy of qualitative research and how to conduct a literature review.

By the end of the session and having completed the recommended reading, you will have an understanding of:

- The nature and philosophy of qualitative research
- How to look at your [REDACTED] within an interpretivist paradigm
- How to conduct a literature review

Recommended key literature:

- [REDACTED] (2016) [REDACTED]
 [REDACTED] [attached below]
- [REDACTED] (2016) - Chapter 3 Critically reviewing the literature, Chapter 4 Understanding research philosophy and theory development
- [REDACTED] (2013) - Chapter 1 Why study [REDACTED] theory

-  [Session plan](#)
-  [Talking slides - Philosophy of qualitative research](#)
-  [Talking slides on how to conduct a literature review](#)
-  [REDACTED] (2016)
-  [Questions about the reading for this session? Post them here!](#)
-  [What is Quality in Qualitative Research?](#)
-  [Discussion forum - Complete by 22 October - Which practices could you look at that do not involve numbers?](#)
-  [How to conduct a literature review](#)
-  [For interest: Thinking Allowed podcast on postmodernism](#)

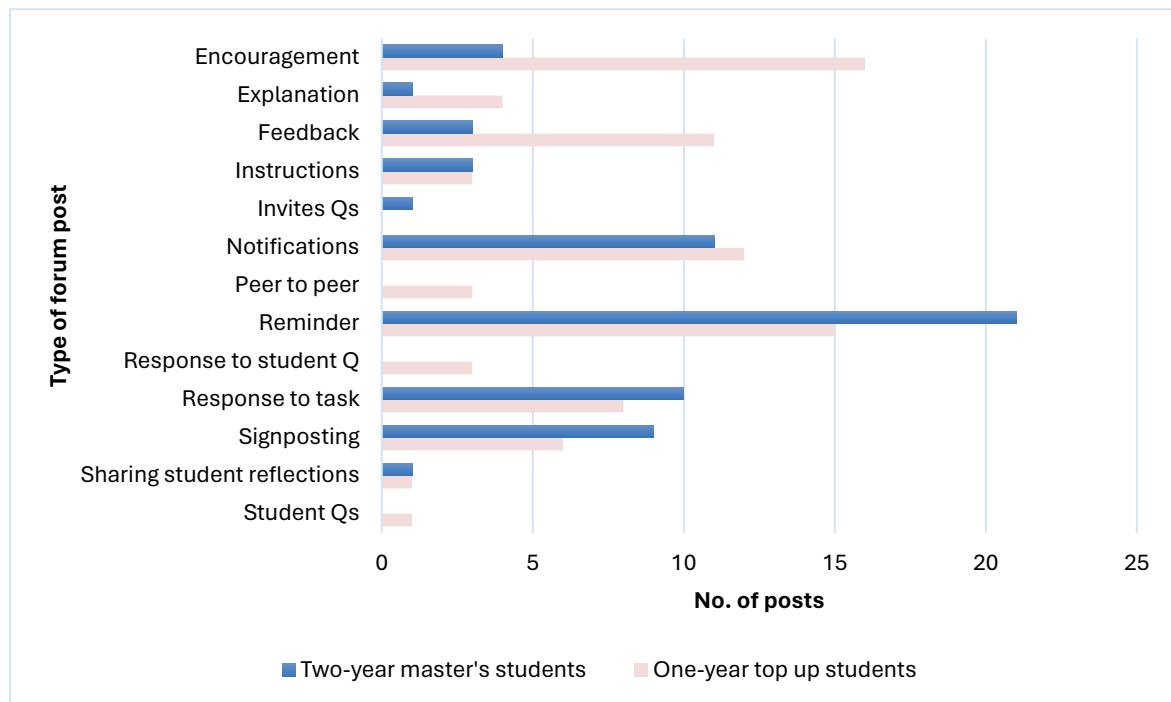
Thea also uses Moodle's forum functionality, setting up three types of discussion fora: an announcement forum, which she and Peter use to broadcast information to students; a generic discussion forum where students can post general questions or issues about the course; and a session specific forum (discussed in section 5.4.2). The announcement forum is set up so that only Thea, Peter, and Julian can ~~use~~ [post to it](#).

5.4.2 Role in encouraging dialogue

As course leader, Thea uses the Moodle forums to communicate with students, as do Peter and Julian though to a lesser extent. They use it primarily to send notifications and reminders to students, signpost students to resources and, particularly for the one-year top up students, provide students with feedback and encouragement (see Figure 5-4).

Students appreciate the reminders and notifications. For the two-year master's students these messages help them prepare for upcoming sessions. However, Valerie and Sol tell me that these announcements come to them as emails (a function of the Moodle forum set up) and this is particularly useful because, according to Sol, most students “will have email on their phones” which they check regularly, whereas few will have downloaded the Moodle App. He tells me he tried but could not get it to work.

Figure 5-4 Types of forum activity by course¹¹



Students use the topic forum primarily to post their responses to the tasks set by Thea and Peter and receive feedback (see section 5.4.3). The top up students have more forum tasks to complete than the two-year master's students and there are no topic discussion tasks set beyond week 12. Paul tells me that he and one or two of the other top up students were “more vocal” on the forum in the “early days” with a “little bit of back and forth” between each other: it

¹¹ Figures are based on my observations of Moodle discussion board activity and are illustrative.

had “a little bit of momentum” but “it didn’t continue”. Students make little use of the generic discussion forum to ask questions.

Thea uses Skype’s functionality to conduct one-to-one tutorials from week six. She emails students a link to a Google calendar, which they can use to book “15-minute slots” during a set time each week. Paul tells me he finds these sessions “really valuable” in building “rapport” with Thea.

The two-year master’s students have a WhatsApp group they use to keep in touch with each other, which Andy is invited to join. This group is created by the students and Thea and Peter are not invited to join it. Andy describes it as a “back channel” where students have short, “honest” communications about “assignments, deadlines, timelines, whether or not the brief’s they’ve been given are clear”. [All students and teachers use Moodle to give and receive feedback, and this is discussed next.](#)

5.4.3 Role in providing online SRM students with feedback

The Moodle forum functionality [also](#) affords Thea and Peter with the facility to provide feedback to students on the forum tasks and to keep students on-task by not allowing them to start their own discussion topics in the topic forum. Moodle’s forum functionality affords students the means to post their responses to the topic, view and leave comments on other posts. However, I observe few occasions where the top-up students comment on other posts. The two-year master’s students do not do this at all. Paul tells me that the interaction between students has “depleted” as the course has progressed. He thinks this is partly because there have been fewer forum tasks to complete since Christmas but also because online “there is a lack of opportunity and lack of ease” of commenting on each other’s ideas. Andy ~~tells me~~ [says](#) he has felt “reluctant” to post comments, partly because he has been out of education for a while and partly because “it wasn’t that friendly”. He reflects on the difference between being physically in the class with the two-year master’s students and Thea asking them to discuss a question, and Thea putting that question in the online chat for the top-up students to discuss. There is “nowhere to hide” on Moodle, Andy says. “You have to sit there and type something out”, whereas in class it was “easier to ... be a bit of a passenger.”

Despite reminders from Thea, I observe that not all students post their responses to each activity. This frustrates Thea, who ~~tells me she~~ finds it “astonishing” that some students think that the discussion forum tasks are “optional”, [but such activities are not part of the formative assessment. The role of digital technologies in the formative assessment of students is discussed next.](#)

5.4.4 Role in formative assessment

Like many universities in the UK, Castle Mount uses the web-based plagiarism prevention tool, Turnitin (<https://www.turnitin.com/>). IRM students submit two assignments that are formally assessed by Thea and Peter (refer to section 5.3.4). Submission involves students uploading the assignment to a Turnitin drop box folder before the deadline. Thea tells students it can be accessed via the IRM Moodle page. Vanessa had a few problems with the Turnitin drop box folder the previous year: “I found it quite difficult to work out what a drop box was [and] where it was”.

Ahead of the first assignment submission date, Thea lets students know that Turnitin will be unavailable for a time close to the submission deadline. Andy tells me this is inconvenient, but he manages to submit his proposal in time.

Thea and Peter use the announcement Moodle forum to let students know when marked assignments are to be released and what to do if they have not passed. Students log back into Turnitin once marks are released, to view their individual feedback. Thea and Peter provide a summary of generic feedback to all the students via the Announcement forum, highlighting common omissions and areas of weakness that students will need to ensure are included in their dissertations.

5.4.5 Synchronous online sessions

Thea and Peter use the video conferencing platform Skype (<https://www.skype.com/en/>) for synchronous online tutorials and the IBM SPSS® Statistics workshop. The previous year they planned to use video conferencing software Adobe Connect (<https://www.adobe.com/products/adobeconnect.html>) to run online synchronous seminar sessions with students but Thea tells me “We just couldn’t make it work”. Vanessa says there were several sessions where she “dialled in to an online classroom” but the sessions were plagued with technical problems:

So much time was spent trying to sort out access, ‘Can I be heard?’ etc. ... it lost some of the flavour.

Thea tells me that she and Peter abandoned using Adobe Connect the previous year and with it the idea of running synchronous online sessions. Instead, they “took to speaking individually with students on Skype” and they have continued with Skype this year because the School has yet to find an alternative web conferencing product. For Thea this is “disappointing” as having “good technology” is “an absolute prerequisite” for delivering an online course. She decides not

to run her planned NVivo session as a synchronous online seminar. “I think I chickened out because of the technology issue” she tells me.

Peter, however, decides to run his SPSS seminar using Skype. “I think it’s impossible to do it online if you don’t have [the students] on the video conference”, he tells me. Skype affords Peter to be in same temporal space as his students so that...

If [students] are running into problems or they’re doing a slight thing wrong I think I can quickly rectify that.

Before the session he tells me that he plans to run it in the same way as an online tutorial he did with a student, in which they shared their screens with each other using a Skype function. He sends students instructions on how to load the software and the datasets they will use in advance of the session. He tells me “I’ll give it a go” and is “confident” [the synchronous online seminar will work](#).

Six students join Peter for the session (which I observe asynchronously). Early in the session I observe that students encounter some technical problems with the sound quality and being able to see Peter’s screen. Peter suggests things that students can do, and these problems appear to be resolved within a few minutes. Peter continues and gets to the point where he first plans to get students to share their screens. At this point some of the students tell him they are not able to do this. Lottie (a two-year master’s student) is one of them and tells Peter she cannot share her screen because she is running Skype on her tablet and using IBM® SPSS Statistics on her laptop. Only one student is able to share their screen and Peter does not ask students to do this again during the session.

Student Andy tells me afterward that he did not like the synchronous session. In advance of the session, he worked through the SPSS workbook “at my own pace” but this was not possible in the synchronous session. He explains that this is because he could not see what Peter was doing and follow along in SPSS on his computer at the same time because he only had “one screen”.

The lack of opportunities to come together synchronously with other students for “online seminars” is something that Paul feels was a missed opportunity.

If everyone is on Skype and everyone’s got their image up ... at least you can start getting some sense of who you’re working with, how they’re finding it [the course], and how they are fitting it in with their real lives.

For Paul, these affordances of Skype could have been used to generate a “collective” rather than individual learning experience.

5.5 Summary

Case study two illustrates the challenges faced by SRM teachers who are new to teaching online and their students, who are professionals who have either never been in higher education or have been out of it for a long time. Teachers Thea and Peter's online pedagogy is emergent, and they start from a place of attempting to ensure that both the hybrid and online-only SRM courses are taught in the same way. With little educational technology support, they develop their own strategies and tactics to deal with the challenges of teaching and learning SRM online. In the next chapter, I present findings from interviews with online SRM teachers, some of whom had been teaching SRM online for several years.

Chapter 6 Interviews with those teaching SRM online

6.1 Introduction

In this chapter I describe data generated from semi-structured interviews with seven teachers of social research methods who teach or have taught the subject online, within the UK and elsewhere. This chapter follows a similar structure to chapters 4 and 5. I start by introducing the research participants before going on to describe features of the online course(s) they taught that relate to the research questions. I use pseudonyms when referring to organisations and people. Table 6-1 summarises the courses that participants teach online, which are discussed in this chapter. Descriptions of courses and technologies refer to the time of interview/ when the course was being developed and taught. Interviews took place between June 2017 and April 2019.

Table 6-1 Summary of participants

Teacher	Course type	Subject	Length	Running since	Located
Karen	Short course	Visual methods	2 weeks	2015	UK
Iona	Short course	Mixed methods	8 weeks	2015	UK
Max	MOOC	Quantitative data collection method	4 weeks	2014	North America
Katarina	MOOC	Interpreting quantitative data	3 weeks	2015	UK
Meg	MOOC hybrid	Introduction to research methods	8 weeks	2017*	UK
Rachel	Short course	Mixed methods	8 weeks	2016	North America
Dana	Master’s module	Applied research methods	11 weeks	2018*	Australasia

* Date course first started running in its current form

6.1.1 The participants

I spoke with seven research methods teachers who had or were at the time of interview, teaching research methods online. Karen was an experienced researcher, based at a UK university that delivered most of its courses online. She explained that she did not “have a huge amount of teaching experience”. She and two of her university colleagues decided to seek funding from a UK research council to develop and deliver three online short courses on a particular set of digital research methods. Karen and her colleagues hoped this would help the university secure Doctoral Training Partnership funding. The courses ran over a three-year

period from 2015 and were described in promotional material and by Karen as an advanced course. When I spoke with Karen, she had just finished teaching the final iteration of her course. Students applied to the course and were selected based on their past experience in using the methods, career stage, and current research activity. The latter indicated to Karen which students were likely “to make a good contribution” to course discussions.

Iona started teaching research methods as a doctoral student at a UK university. (At the time of interview, she was working there as a researcher.) She taught quantitative and mixed methods, teaching the latter online as a short course. When she started teaching the mixed methods course Iona told me she had “quite a lot of experience doing mixed methods but not so much teaching it formally”. The course was designed by a colleague, who was not involved in teaching it, to fill a gap for students who were undertaking mixed methods research but where there was no training being offered by their department. The first iteration of the course was delivered both place-based and online but thereafter the course has run entirely online. When I spoke with Iona it had been running for around two years, two to three times per year, depending on demand. It attracted both international and home students, many of whom were in the early stages of their doctoral studies. It also attracted some “industry people”. Before moving into academia, Iona taught “high school students maths”.

Max was a leader in his field - an applied area of quantitative research methods. As well as being an active researcher he had been teaching graduate students about this area for “quite a few years” at a North American university. He told me his teaching had been “place-based”, but his university had an arrangement with an online learning platform that offered massive open online courses (MOOCs). He was persuaded by a colleague at a partner university to develop a couple of MOOCs, as they both agreed MOOCs were “here to stay” and that if they did not “do this [course] somebody else [would]”. Max co-developed and delivered his first MOOC (and online course) with this colleague in 2014, which was concerned with a quantitative method of data collection. He explained that he went on to develop and teach his own MOOC, looking at [a set of] quantitative data collections methods, focusing on what he considered to be “cutting edge” methods involving the use of digital technologies and data. These two MOOCs formed part of a suite of courses on [applied] quantitative methodology that (continued to) run on-demand. The students taking the courses, Max told me, were “really global”.

Like Max, Katarina’s first experience of teaching online was developing a MOOC. She was a quantitative social research methods lecturer at a UK university, working in a specialist centre, which she was involved in setting up. She described herself as a “mixed method researcher” but in comparison to other people she worked with she “was always viewed as a more quantitative person” because she “had an understanding of how to analyse numbers”. She

taught undergraduates quantitative social science. She and two colleagues developed a data literacy MOOC, each of them developing one of the three weeks of the course. She told me that the course launched in 2015 and was open for over a year. She and her colleagues hoped the course would attract young people and would help them to build a pipeline of future students for their undergraduate quantitative research methods course: “I think we tried to promote it quite heavily in schools in the [city]”. However, data on who signed up for the course showed that it was “people with more developed careers” and university graduates. When I spoke with Katarina, she was waiting for the course to open again.

Meg also developed a MOOC, which could be taken as a stand-alone course but also formed part of the compulsory research methods module of an online master’s programme. Like the other teachers I spoke to Meg was an active researcher, working within a UK university. Meg’s research interests included online learning and there was a symbiotic relationship between her research and teaching. Meg had considerable experience of teaching online: she told me she had been doing so since “around 2006” and was very involved in “developing the approach for this new course and developing content”. She was not involved in its delivery, however. When I spoke with Meg, the first students were just over half-way through the eight-week MOOC.

Like Iona, Rachel taught a mixed methods short course online with a colleague, Tina. Rachel taught the quantitative elements, Tina the qualitative, as Tina “had a bit more experience with qualitative” Rachel explained. Rachel worked as a researcher in a multi-disciplinary team within a North American university, which undertook applied research and professional development training for non-social scientists. She told me that she had taught online before, though only for a semester, as part of a master’s programme. She and Tina developed the mixed methods course, having been “trained in-person to try to bring more mixed methods to [name] University”. When I spoke with Rachel the course had been running for two years and was about “to launch for the fourth time”. It attracted a mix of practitioners and master’s level students, having expanded from being for people who were part of the University “community” to “anybody” who was willing to pay for it.

Dana used quantitative and qualitative digital research methods in her work, to research substantive issues. Like Iona and Katarina, Dana taught at the university she studied at; an online-first, Australasian university. She taught a compulsory research methods unit that was part of an applied social science discipline master’s course. The course was run over eleven weeks, running three times a year. Students could take it online or “on campus”. She was involved in a “major course review” a few years ago, redesigning the course materials to be suitable for “online first” in response to a change in the university’s “strategic vision”. Dana explained that unlike the on-campus students, those learning online were “mostly domestic

students” who were working professionals, and this shaped how Dana planned and taught the course (see section 6.3).

Having introduced the online SRM teachers I spoke with; in the next section I describe the SRM courses they were teaching online.

6.2 What is being taught online?

Karen’s two-week digital methods course aimed to develop students’ knowledge and understanding of particular digital methods. As an advanced course, she told me she was keen to engage students in thinking about how these methods may develop. ~~Students also learned skills,~~ According to the course introduction from the most recent iteration of the course, students also learned skills in “online, synchronous and asynchronous, collaborative learning”. Week one introduced students to [specific] digital methods and technologies and to current thinking on the applications of these methods. Students went on to consider a particular form of [digital] method and the ways in which data are generated. In week two students considered large-scale [object] analysis as a [digital] method, how and what data are generated using this method and what other data could be used to generate insights.

Iona’s mixed methods course ran over eight weeks. It started with students introducing themselves and being introduced to the technologies they would be using as they participated in the course. Iona explained that this first week was concerned with getting “the bits [learners] need in place before the content gets delivered”. In week two students were introduced to different kinds of mixed methods research. As the course progressed students considered how to “assess” a research question, looking “a bit at epistemology and ontology” and how these “considerations play into” the formulation of the question. Students were introduced to different perspectives, the literature, mixed methods and when “you would want to use it”. In week four students started looking at mixed methods design in more detail, “thinking more about justifying choices”. In following weeks Iona told me the course becomes “more and more detail[ed]”, focusing in on the “particulars of mixed methods design”. There were units on analysis and dissemination and “thinking” about the issues involved. Week seven was a study week, in which students developed their own mixed methods research proposals, which were discussed in a synchronous tutorial in week eight.

Rachel’s mixed methods course also ran for eight weeks. She told me it was a “basic introduction” providing “quantitative people” with an understanding of “what qualitative is” and vice versa and introducing students to “three basic mixed methods’ designs”. According to the course web page, students learned “how qualitative and quantitative data can be integrated ...

to answer complex research questions.” Rachel explained that she and Tina introduced students to quantitative and qualitative research methods. Students learned about differences in how quantitative and qualitative research “approach theory in a completely different way” and [about](#) inductive and deductive reasoning. As the course progressed students learned how to formulate research questions, collect, and analyse different types of data, and to choose “the appropriate mixed methods design”.

At the time of interview both MOOCs Max delivered contained four sessions that students could work through at their own pace. The [quantitative method of data collection] MOOC started by introducing students to the course structure and topics to be covered. The course web pages provided details on what each session covered, which I reviewed. Session one introduced students to different types of survey questions, measurement error, different forms of the quantitative data collection method and to the principles used in developing measurable concepts. Session two introduced students to a model of the process by which data are generated in this form of quantitative data collection and the stages involved in the model. Session three looked at the sources of error that can occur at different stages in the model and the design strategies that can be used to try to deal with these potential errors. Session four considered a particular type of measurement, how in practice the quantitative data collection method was used to generate these measurements, problems that could arise and strategies for dealing with these.

In his quantitative data collections methods MOOC Max first introduced students to the main concepts and definitions of key terms before moving on to look at different modes of data collection and types of mixed mode design. Students also considered the design ‘trade-offs’ involved in choosing between different modes and designs. In session two students were introduced to self-administered modes of data collection, being introduced to different types, the sources of error associated with each, and the design strategies that they could use to attempt to address these potential error sources. Session three introduced students to interviewer-administered modes of data collection, paying attention to the role of the interviewer, interviewer tasks, different approaches to interviewing and their impact on data quality. In the final session Max discussed new modes of data collection and sources of data, taking students through several examples, and discussing the methodological challenges and opportunities each afforded.

Katarina’s MOOC module was sandwiched between a first week that provided a “generic understanding” of how to interpret data: “how big is big, how small is small?” and a third week on analysing data. She told me her module included a welcome video in which she explained what the week would cover. Section one was concerned with sources of data about the whole

population, in which Katarina introduced students to the idea of a census and talked about how it differed to a survey. Students were given articles to read and an activity to do. Section two introduced sampling and data collection methods. It included a video of “a person from a research company explaining ... in simple words, what a survey is”. There were several articles for students to read. The final section focused in more detail on survey sampling, looking at “how to draw a sample and make it representative”. The section also looked at how data are collected and “how different ways of data collection might impact on the results”. Students were again given articles to read, a quiz and activities to complete.

Meg tells me the introduction to research methods MOOC was “at the centre” of the methods course for the master’s students. It was “where the sources, the questions, the ideas” were contained. The MOOC focused on looking at “different ideas about research” rather than providing students with “instruction on how to do things” and material was organised into weeks. Students were introduced to “different kinds of approaches to researching methods” and could choose “two or three different approaches to explore in some depth”. The course then moved on to look at analysis approaches. Meg explained that the master’s students did “more of the skills stuff” because they had to “go on and write a dissertation” and undertake assignments that were formally assessed.

According to the course website, Dana’s research methods module aimed ‘to support students with being able to undertake their own research project’, which they worked on later in the programme. Dana told me that she was not attempting to teach students how to analyse data, rather she introduced them to different methods used to undertake research and “ethical thinking around each method.” Initially students were introduced to “research methods thinking and logic”. Dana then moved students on to “some of the most commonly used methods” that students were “most likely to have exposure to” such as interviews, focus groups and surveys. These methods provided a “starting point” for thinking about research ethics and students engaged with various activities to develop their understanding.

Karen, Max, and Rachel’s courses included asking students to complete course evaluation forms. Katarina’s students were [invited to leave feedback on activities. Teachers discussed this feedback with me, as we discussed how they designed and taught their online SRM courses and this is the subject of the next section.](#)

6.3 How are online SRM courses being taught?

Teachers talked with me about how they designed their online courses and the digital learning technologies they used (the latter is discussed in section 6.4). Although courses covered

different content, all had a similar high-level structure: a course welcome/ introduction to orientate students; a series of sessions that were deliberately sequenced with increasing complexity; and activities for students to engage with.

All courses were accessed by students through an institutional VLE or MOOC platform that was used by the participants' university. Max, Katarina, Meg, and Rachel's courses were taught asynchronously whereas Karen, Iona and Dana's courses included additional synchronous seminars. Teachers produced written material, which included what Karen referred to as the "written voice" of the teacher. This set out what students needed to do, as well as containing substantive research methods content.

In the rest of this section, I describe teachers' values and approaches to teaching, their planning, what they did in situ and what they got their students to do.

6.3.1 How teachers go about their pedagogy: their values and approaches

The interviewed teachers were not always able to articulate their pedagogic approach. For Dana, Rachel, Katarina, and Max their values were conveyed in the ways in which they talked about their course planning and the tasks students undertook. Katarina, Max, and Rachel valued providing students with opportunities to put theory into practice. Rachel explained:

all the things that I teach, whether it's online or in-person ... [I'm] really trying to teach them very concrete concepts and having somebody do an activity to apply it.

Dana valued getting to know her students "personally", to understand their requirements and contexts so that she could be "a custodian" of their learning journeys. Iona also spent time getting to know her students and their research interests and, like Dana, her student-centred values aimed to support students' learning. All the teachers valued providing authentic learning experiences, drawing on their own and others' experiences.

These active learning and student-centred values were also ones I encountered in both case studies. However, Karen and Meg both valued the collaborative element of student-centred learning, something I did not encounter in the case studies. For Karen collaboration was about learning "from each other": for Meg it was "the possibility of what can a whole bunch of people do together" rather than as individuals. Meg's pedagogy also reflected her ontology and epistemology. Meg saw her methods teaching as about:

how to prepare people who can just be very insightful and critical thinkers ... [who] open up those questions about how do we decide whether something is useful? How do we decide whether something is robust?

In her course the aim was to develop students' critical thinking and "awareness" of issues with different research methods and paradigms. [How teachers' values influenced their plans for teaching – their strategies – is considered next.](#)

6.3.2 Goal directed planning for implementing their approaches: teacher strategies

In their strategies for active learning, the interviewed teachers provided students with activities to undertake, which involved students putting theory into practice. Max told me that in the [quantitative method of data collection] MOOC students were given access to an online data collection platform that they used to design a data collection instrument and collect data. The master's students who took Meg's research methods course did "work with analysis software". In Karen's short course, students worked with real projects and their data, which were available online.

Iona and Dana spent time getting to know their students as part of their student-centred learning approaches. Iona told me she encouraged students to learn from each other through discussion and asking questions of each other. She planned to provide individual support to students, developing a library of resources, such as standard email text and a record of students' questions and her responses, [which](#) aided her ability to respond quickly and time-efficiently. She planned a set time each day when she would be on the online forum, which she told me were her "office hours" during which she engaged with students. Dana also planned to provide individual support by "being responsive on the discussion forum". However, unlike Iona, Dana told me she did not use the forum to "provoke discussion" because she believed that created "extra work" for the students. She felt that students would be "really active" on the discussion board if that was "strategically what they need to do".

In their strategies for collaborative learning Karen and Meg talked about getting students to introduce themselves to each other and to ~~them~~ (or the tutors at the start of the course. Meg explained, "I think this induction stuff is actually really important in an online course and we always do it". They designed their courses to include opportunities for students to work together, providing them with collaborative tools (see section 6.4.1) and activities.

In talking about their planning, teachers spoke about the challenges of teaching research methods online when the teacher was not present and the things they did in response to these challenges. Their strategies echoed those discussed by the teachers in the case studies. Iona and Meg thought carefully about the structure of their courses, ensuring, as Meg told me, it was "tightly structure[d]". Iona structured her course around the research project lifecycle, telling me she thought that helped to "level the playing field" for learners who come from diverse disciplinary backgrounds. Teachers used signposting to guide students through the course. Max

explained that the way he did the signposting for his MOOC courses was suggested by the online learning specialists he worked with at his university. They suggested he use the format: “we just talked about the previous topic, we’re now going to shift to a new topic, and here’s the connection.”

Material was chunked into “shorter, simpler steps”, Katarina explained. Max reflected that chunking was suggested by the educational technologist he worked with, to help differentiate new concepts and content. He planned to use this strategy for his place-based teaching in future. However, chunking was not only used to manage students’ cognitive load, it also reflected teachers’ beliefs about how learners would engage with the material. Rachel thought her learners probably had “crazy, hectic lives” and would likely only participate in the course during short windows of time that fitted around their other commitments.

Katarina and Dana told me they decided to use non-technical language in their courses. Katarina did this because, ~~she explained~~, she wanted the material to be suitable for the general public, and she spent time writing materials using “non-scientific” language. Dana introduced “terminology” to her master’s students as the course progressed, scaffolding its use by “showing [students] how to move through it”. Repetition was also used to support learning. Iona told me she included multiple “entry points” in planning the online course to support students who would likely put it down and then come back to it. Katarina’s MOOC included an animation video that explained the principles of survey sampling, which she felt provided an “exciting” way to engage students in the topic. She planned to include this and other animation videos of SRM concepts in her place-based teaching.

All the teachers talked of their use of examples in their teaching to engage students. Katarina drew on contemporary issues – “something interesting in the media” – to catch students’ interest. Iona and Rachel included interviews with researchers talking about their mixed methods projects. For Rachel, “getting really interesting and different types of examples that wove throughout the class was important” in engaging students with the content. Dana took a different tack, talking to her master’s students about the “the value of it [research methods] ... in their professional practice” and about how learning about research methods could “earn them a higher income”. She told me she used these strategies because “it’s a compulsory module” and many of the students “don’t actually want to learn about research methods.” In talking to her students about the profession value of research methods literacy Dana helped students learn how they were “going to use this [research methods] knowledge in their professional practice”. [In summary, teachers’ planning involved them in considering challenges to learning SRM online that students might experience and thinking about how to address them. I now consider what teachers did in-situ.](#)

6.3.3 Translating strategies in-situ: teacher tactics

In the interviews, teachers' tactics were not as visible as in the case studies, as I was not able to observe what the teachers did in-situ. Teachers talked of asking students questions as a means of gauging where they were with the course and their learning, responding to students' questions and requests, providing (further) explanation and resources, and encouraging students to expand on a post to the forum through prompting or probing. Meg talked of spending:

a lot of time just engaging in conversations with students about what they're reading and what they're thinking ... to be there and to be able to ask the right question at the right time.

This was "really, really important" because it allowed her to "catch" students' misunderstandings of key concepts, such as "bias". These conversations happened "mostly" asynchronously.

Iona's tactics were particularly evident in her conversation with me. Like Meg, Iona used dialogic tactics to engage with students during the course, asking them questions, prompting, and probing both in the forum and the synchronous seminars. In the latter her prompting aimed to "get students to talk to each other". In the forum, she would try not to be "too responsive" but rather "leave the space" - "the wait time" - to "encourage student to student conversations".

Drawing on her experience as a high school teacher, Iona told me she would be "nudging" students at the start of each week to engage with the course forum by email. She also used email to message students to check if they were "okay" if they had "disappeared" or if they were behaving inappropriately in the discussion forum. These were tactics she told me she learned when she went on a course for people who were going to be teaching online, run by her university. She also learned different tactics for starting a discussion and "keeping people involved" in it, which was "really useful" in making her realise that you cannot "engage students in the same way that you would face to face." [In section 6.3.4, I discuss what Meg, Iona and the other online SRM teachers and learners did - the activities they engaged in that teachers' tactics coalesced around.](#)

6.3.4 What learners and teachers do: tasks

All the courses involved students undertaking activities that were designed to support their learning. Students were required to produce outputs such as forum posts, research designs or data collection instruments – survey questionnaires, interview guides, which involved them applying their learning. Meg and Dana's master's students had assignments to complete that

were formally assessed in addition to doing things and practising. Short-course and MOOC students undertook a range of activities and received feedback on these, including multiple choice quizzes. (Course activities are summarised in Table 6-2.) I had access to the course materials for Karen’s visual methods course and viewed publicly available information about the other courses.

Notably, the only course that involved students in collecting data was Max’s. His students had to design an online questionnaire and send out a link, inviting people to complete it. Students used the data collected for later analysis tasks. Meg, in contrast, had concerns about online students collecting their own data. These centred around concerns that students could end up in “ethically dubious” fieldwork situations because of teachers not being able to provide adequate supervision to students.

Table 6-2 Student activities by course

Course (teacher)	Student activities
Visual methods short course (Karen)	<p>Introduce self</p> <p>Read articles provided and consider questions set by tutor, making notes for use with activity 3</p> <p>Listen to podcast. Reflect on similarities and differences between student’s notes on activity 2 and points made in podcast. Make notes on reflections</p> <p>View web resources and identify different “forms” of the method being used. Write about these forms, using questions provided as “prompts” to thinking. Post review to forum. Read each other’s posts ahead of synchronous seminar</p> <p>Synchronous discussion on activity 4</p> <p>Write a post to the forum on use of the method in a particular context, making use of resources provided and using questions provided as guide to thinking</p> <p>In the forum, discuss activity 6 posts</p> <p>Synchronous discussion – reflection on “main points” arising from the course and use of the method</p>
Mixed methods short course (Iona)	<p>Answer questions set by tutor in the online forum</p> <p>Develop a research proposal and present proposal to the group</p>
Quantitative data collection method MOOC (Max)	<p>Answer multiple choice quiz questions</p> <p>Design a [quantitative] data collection instrument, “collect some data” using it and describe that data</p>
Interpreting quantitative data MOOC (Katarina)	<p>Answer multiple choice quiz questions</p> <p>Students can “comment and discuss” topics on the discussion forum or answer a question set by the tutor</p> <p>Find out if “their country” has a census, how to access the data, how it measures particular concepts such as “race or education” and discuss what they find in the discussion forum</p>

Course (teacher)	Student activities
	<p>Discuss a “hypothetical survey situation that you would like to” undertake using online data collection methods, thinking about who might be “excluded”</p> <p>Develop a “research question and revise it” based on what students find out about the datasets available, the ways in which topics of interest are measured and the limitations of the methods used to collect the data</p>
<p>Introduction to research methods MOOC/master’s module (Meg)</p>	<p>Introduce self, their interests and why they are taking the course</p> <p>Look at a specified dataset and set of images and consider questions posed by teacher. Students discuss their answers/thoughts on the dataset / images on the forum or in a blog post</p> <p>Answer multiple choice quiz questions</p> <p>Main MOOC assignment – peer review each other’s writing on critically evaluating a case study, paying particular attention to the methods of analysis used, whether they were applied appropriately, “what the other options” might have been, how the data were analysed, what problems there might be with the analysis, and what the main findings and conclusions were</p> <p>Master’s students – undertake analysis of a dataset to answer a research question and write about it</p>
<p>Mixed methods short course (Rachel)</p>	<p>Answer multiple choice quiz questions</p> <p>Design a “mixed methods model ... a figure” that “visually represents” their research design</p>
<p>Applied research methods master’s module (Dana)</p>	<p>Assignment 1 – “evaluate original [research] studies”, answer multiple choice quiz questions</p> <p>Assignment 2 – design a research proposal on a specified topic</p> <p>Assignment 3 – “reflect on the practical tasks they have been doing for each method”. What have they learned? How might these methods be applied in their work?</p>

Karen designed activities that built on each other. In some cases, activities came at the end of the session, in others the activity formed the basis of the session. Activities were complex, involving students in critical thinking, reflection, discussion, and collaboration. Karen told me that in the first iteration of her visual methods short course, students also worked in groups to create a short presentation outlining their thoughts on the method they considered in session six. The presentations were shared with all students ahead of session eight’s synchronous session, providing a “starting point for discussion”. However, this activity was dropped from the final iteration of the course [because of a change in the video-conferencing platform used \(see](#)

section 6.4.3 for further discussion). The roles that digital technologies played in the teaching and learning of SRM online are considered in the next section.

6.4 What roles are digital technologies playing in online SRM courses?

A variety of VLEs were used by teachers to create their courses and among the MOOC teachers none used the same MOOC platform. Use of a particular VLE or MOOC platform by teachers reflected institutional preferences and policies. Katarina expressed this explicitly when she told me “We were never given any choice” over which MOOC platform to use. In this section I describe the roles that digital technologies played in online SRM teachers’ courses, focusing on four areas: course design; online discussion forums; synchronous online sessions; and learning analytics.

6.4.1 Role in course design

A variety of VLEs were used by teachers to create their courses and among the MOOC teachers none used the same MOOC platform. Use of a particular VLE or MOOC platform by teachers reflected institutional preferences and policies. Katarina expressed this explicitly when she told me “We were never given any choice” over which MOOC platform to use.

Teachers typically created course materials and pages within the VLE or MOOC platform using its functionality. However, Karen tells me she drafted the text for her course pages using a word processing package and a “specialist” at her university edited it and “put it up online”. Max, Katarina, and Karen all received some degree of help with drafting their material, particularly in how to chunk up their material, from online learning specialists based within their institutions.

As well as creating course pages and text, teachers, with support in some cases from online learning specialists, also made use of other functionality within the VLE or MOOC platform to embed videos, links to podcasts and or screencasts, hyperlinks, and PDFs of reading material and to create multiple choice quizzes. All courses included discussion boards, making use of the functionality of the VLE or MOOC platform (see section 6.4.2). Karen, Iona and Dana used web conferencing platforms for synchronous seminars in their courses (discussed further in 6.4.3), as this functionality was not provided by the VLEs they were using (see Figure 6-1).

Meg’s was the only course to include Wikis. She made use of the MOOC platform’s functionality to set up Wiki spaces for her students. One was used as a “glossary” into which students could add terminology they encountered during the course that they were “not really sure about and define it for each other”. In another, students were “invited to transcribe parts of an interview”

to gain experience and have “conversations about the art of transcription and what it means to interpret speech”.

Figure 6-1 Features and functionality used by teachers in their online courses

Course (teacher)	Embedded video	Link to podcast/ screencast	Quizzes	Discussion board	Embedded hyperlinks	Wiki	Synchronous seminars
Visual methods (Karen)							
Mixed methods (Iona)							
Quantitative data collection method (Max)							
Interpreting quantitative data (Katarina)							
Introduction to research methods (Meg)							
Mixed methods (Rachel)							
Applied research methods (Dana)	*						

Included in course
 * Only for the Welcome video

Several of the teachers' courses included video, Katarina's MOOC course amongst them.

However, Katarina told me she was “not a fan” of teacher talking-head videos. As a learner she preferred to read things at her own pace. As a teacher, she did not feel “comfortable” talking to camera because “when you record [the video], they give you a script” and that makes it “very artificial”. Meg and Dana used video strategically in their courses: Meg for instructions and Dana for welcoming students to the module. Dana also used screencasts “sometimes” to “narrate” students through “a particular process”.

However, some teachers chose not use video at all in their courses, Iona amongst them. She used the VLE's functionality to create text with hyperlinks that “take [students] to the different bits they need”. This, she felt, afforded students the ability to learn at their own pace. She tells me students could “make sense of it. Ask questions about it. Go back to [the written material]” in a way she was sceptical they could do with a video. She associated videos with a “lecture format”, which she told me she was “inclined to avoid” because

... I'm not sure that would be the best way for students to take information in for the first time on that topic.

The hyperlink functionality of the VLE and MOOC platforms afforded teachers and students with ways of creating pathways through the course material, as illustrated by Iona's comments

above. Meg used hyperlinks to give her students “access to a lot of different people’s research” and datasets “to explore”. Karen also used hyperlinks in this way, providing students with links to projects that were working with digital data so that students could explore what kinds of data and methods were being used.

Teachers used the multiple-choice quiz functionality of the VLE or MOOC platform they were using to write questions that tested students understanding of key concepts and ideas, providing students with feedback on their learning. This also afforded teachers with a time-efficient way of providing feedback, at scale, which was particularly important for those teaching MOOCs. Max also used the open question function in the MOOC platform to set “assignments” for students. These were “peer assessed” he told me, because “the scale precludes the instructors ... from doing it”. Max acknowledged there were some problems with peer assessment. There can be “a bottleneck if there isn’t a peer available to grade” and students’ answers may be “evaluated by someone who knows even less” than they do. Meg also used peer assessment, with MOOC students reviewing each other’s evaluations of a case study.

Katarina and Max recounted how the MOOC platform impacted on their courses. Katarina explained that the first time her course ran, students “had to do a quiz to receive a certificate at the end” of the course. However, now students ~~have to~~ pay if they want to receive a certificate. This was also the case with Max’s courses (which involved a different MOOC platform). Max told me the MOOC platform he used “wants everything on-demand” and this changed the way he designed his two courses. In the first of his courses, he was in control of setting the learning pace, as material was organised by week. He used functionality within the MOOC platform to release material a week at a time: “students couldn’t go any faster than that”. However, this functionality was removed when the platform moved to an on-demand model and now students can travel through it at their own pace, accessing material in any order they choose. His second course does not organise material by weeks, it is organised by topic.

The MOOC platform also influenced the design of some of Max’s course activities, he explained. When Max first designed his course, the idea was that his course, and those of his colleagues (which formed a suite) would have one shared project that students would undertake, that cut “across all six courses”. However, Max told me that the MOOC platform was “planning to move to a model” whereby there would be a separate project for each course, “so we ended up designing the course with an eye to that.”

[The VLE and MOOC platforms used by the teachers I spoke with also included online forum functionality, which all teachers made use of. The use of this technology is discussed next.](#)

6.4.2 Online forums

Teachers made use of the VLE or MOOC platform's online forum functionality for different reasons. Karen, Iona, Katarina and Meg told me they used it for activities, setting questions for students to consider, providing feedback on their responses, and encouraging students to interact with each other. Meg felt that it was “actually quite helpful to have the space for people to do things asynchronously” as it afforded students time to “really articulate a position in relation to” e.g., an idea or proposition. She was not convinced that in a synchronous environment such deep thinking would take place. Dana did not use the forum to provoke discussion among her students but rather to post links to the weekly seminars, as well as providing feedback to those students who chose to “post up their practical task”. She said that her students did not use the forum to interact with each other that much. Some used other channels, such as Slack, which “they established for a group work project” in an earlier module.

Iona, Max and Rachel used the online forum function to create a space where students could post general questions about the course. Both Max and Rachel told me that “teaching assistants” monitored and responded to students' questions. Rachel explained that her teaching assistants “facilitate[d]” the discussion forums and forwarded any questions they were unsure how to answer or requests for references to herself and Tina (the other teacher), who provided the teaching assistants with a response. She reflected on how she did not have as much of a sense of students' progress with their learning in the online course “because I don't interact” with the students directly. Max tells me his teaching assistants, who were students on the place-based graduate research methods course at the university, “shield[ed]” him from having to get involved in interacting with the MOOC students. He reflected that there was a “firewall” between him and the students that was

... mostly imposed by the technology but also imposed by design, by will. We don't want to be accessible.

Other online SRM teachers I spoke with were keen to engage with their students directly, in some cases in sessions where student(s) and teacher came together at the same time. These synchronous online sessions are discussed in the next section.

6.4.3 Synchronous online sessions

Karen, Iona and Dana all made use of the functionality of the web conferencing platforms to allow them to run synchronous seminars with their students. Karen says told me she used Adobe Connect in the first iteration of her digital methods course, as it was at that time the “standard platform” used by her university. She found its functionality useful. She and the

students could type messages, in real time, during synchronous sessions that supported communication between students and with her. These appeared on a “whiteboard” at the side of the screen. As well as posting text, students could post an emoticon. Karen recounted that there was a “messaging system” that students could use to “flash up” an icon, which was “really, really useful”. The icons included

... a puzzled face. It had a hand up ‘I want to say something’ gesture. It had a smile, so you could say, ‘Is everyone OK with that?’ and people just hit the little smiley emoticon and you can think, ‘Great, let’s move on’.

The web conferencing platform (at the time of the first iteration of the course) also included a function that allowed students to upload and download files, making it easy for them to share their presentations with each other ahead of the final synchronous seminar (see section 6.3.4). There was also a function that allowed the teacher to put students “into smaller groups and bring them back” together. Karen explained that she designed the synchronous sessions around this functionality, which afforded her with the ability to “talk to quite a lot of people” within a “two-hour time slot”. However, she and her colleagues had problems using the “synchronous discussion functionality” and ~~that~~ one of her colleagues refused to use it after the first year.

She couldn’t get people into things. She couldn’t hear people. It was just too complicated to do that with that number of people.

So, they moved to using a different web conferencing platform (Skype) for subsequent iterations of the course, just using “the audio”. Karen told me that this change in software affected her course because Skype did not have the same functionality as Adobe Connect. For example, she could not put students into smaller groups and bring them back together again. Skype (at that time) also did not have the functionality to allow students to share documents. Instead, students had to email Karen their presentations, who collated them ~~at~~ and sent them all out to students again. This element was dropped from the final iteration of the course. Karen reflected that the Skype seminars were “more unstructured” and more like “face to face seminars” but that “they did work well”.

Iona also used Adobe Connect for her synchronous seminars but did not mention technical difficulties. Rather the web conferencing functionality afforded a “more responsive” environment for discussion, as students found it easier to talk than write to the discussion forum and would take the lead in discussions more. “It tends to be when they get a bit more specific about **their** work” [my emphasis] rather than talking about the course “readings”.

Dana used Blackboard Collaborate (<https://www.blackboard.com/teaching-learning/collaboration-web-conferencing/blackboard-collaborate>) to connect with her students

in real time for “weekly seminars”. She tells me the seminars happened at the same time each week but “getting more than one person attending is variable”. Using the platform’s record function, Dana recorded the seminars “for later access” by students, posting links to the recordings in the VLE course forum. Dana told me that Her seminars were “orientated towards interactivity” but she says feedback from students suggested this made them “difficult to navigate” when viewed asynchronously. When I spoke with Dana she was “trailing” a different format for the seminars, that was more structured and assumed that most students would “be accessing asynchronously” though they could still attend in real time if they wanted to. This new structure involved an “informal starting point”. Dana then started the recording, going through “a structured discussion” which she tells me she would keep “short and succinct and to the point”. During this recorded section Dana said she checked in with the “one or two” students who attended in real time and “draw[s] in some of their stories to illustrate points” where appropriate. After the recorded session finished, she and the students present “go into a [live] Q&A”. For Dana, “being able to learn and take feedback” from her students so that she can “deliver in a way that student find most valuable” is her “priority”. [Synchronous sessions provided opportunities for teachers like Dana to get feedback on their online SRM course from students. However, this was not the only source of feedback: course learning analytics data also provide feedback, and I discuss this next.](#)

6.4.4 Learning analytics

Teachers spoke of how they made use of the learning analytics and dashboard functionality of the VLE or MOOC forum to monitor how students were getting on with their learning during the course, and to help them make changes to it ahead of the next iteration being run. Dana explained that she used the VLE’s analytics “to understand where students are at, what they’re accessing, how frequently”. She used this information to spot students who were inactive, so that she could reach out and engage with them and support them. Katarina used the MOOC’s analytics to “see how many people drop out” at different points in the course. This information – learning analytics - indicated that “there’s something not right” with that part of the course and she tells me she used it to review the content and “make some small changes” ahead of the next iteration of the course going live. [Similarly](#), Rachel used students’ quiz results from the first iteration of the course to identify problems with questions being “confusing” and where the content did not “go deep enough”. In the case of the latter, more content was added to scaffold the quiz activity.

6.5 Summary

The teachers I spoke with were teaching various research methods online, using digital technologies supported by their institutions. These teachers included those teaching SRM MOOCs (Max, Katarina), in one case linked with a master's SRM module (Meg). As with case studies one and two, the online SRM teachers valued active and student-centred learning. However, I also spoke with teachers who valued collaborative learning (Karen and Meg).

In the next chapter I discuss the findings generated from the cases studies and interviews with online research methods teachers. I consider the findings in relation to my research questions, considering what the findings suggest about what research methods are being taught online, how they are being taught, and what role digital technologies plays in their teaching of SRM online.

Chapter 7 Discussion

In this chapter I discuss findings generated from a thematic analysis of data generated from the semi-structured interviews with seven teachers of online SRM courses and the two case studies conducted before the COVID-19 pandemic: an online quantitative methods short course and an introduction to research methods master's module. The discussion is organised around my research questions:

- Q1 How are SRM taught online - what are the similarities with place-based teaching and what is different?
- Q2 How do teachers respond to the challenges of teaching and learning SRM online?
- Q3 How are the affordances of the digital technologies of the online learning environment used in support of teachers' pedagogic goals?

I commence by considering the challenges that students and teachers faced with learning SRM online and with teaching it. I start here because these challenges foreshadow how SRM is taught online, how teachers respond to these challenges, and the roles that the digital technologies used played in course delivery and student learning.

7.1 Challenges faced by online SRM students

Insights into the challenges faced by online SRM students were generated from conversations with learners and teachers and observations of online learning. Considering these challenges is important because they speak to the knowledge of misconceptions and difficulties with the subject commonly experienced by the student that teachers draw upon as part of their pedagogical content knowledge (Shulman, 1986).

Learners came from a wide range of disciplinary backgrounds and were all studying part-time. For the students of case study two, the methods module was compulsory. Reasons for taking their chosen online course were continuing professional development and/or a desire to learn to use the method. Studying online afforded students, in their view, easier access to methods training that could be fitted around other commitments. This affordance is well-documented in the wider online learning literature (see chapter 2) and led to a shift in mode of provision by the UK's National Centre for Research Methods even pre-pandemic (Moley, Wiles and Sturgis, 2013). The quantitative methods students of case study 1 were based in North America and Asia; the master's students of case study 2 were all based in the UK. Three themed sets of challenges are discussed in relation to teaching and learning of SRM

and the development of online SRM teachers' PCK: generic online learning challenges; online learning challenges that are specific to adult learners; and challenges that are specific to the learning of SRM online. I consider these challenges in relation to the teaching and learning of SRM.

7.1.1 Generic online learning challenges

The online SRM students voiced familiar challenges with learning online, such as frustrations with technologies not working that hampered learners' sense of progress through the course (case study 1) and in participating in synchronous seminar sessions in the first year of the online-only course (case study 2). There were also struggles with self-organisation and time management, which Michinov et al. (2011) argue is essential to the successful completion of online study. This kind of self-regulation did not come easily to some of the SRM learners in case study 2, who had been out of the education system for some time, and it was a challenge for them to develop and maintain study habits.

A further set of familiar online learning challenges were concerned with engagement in online discussions. There is a growing collection of research evidence that suggests that students' involvement in asynchronous communication and discourse with their peers and teachers is beneficial to their learning; see for example, Gilbert and Dabbagh (2005) and Hew, Cheung and Ng (2010) for summaries. However, getting students to engage in online forum discussions can be challenging for teachers as evidenced in the literature (Smith and Smith, 2014; Kim *et al.*, 2016; Manning and Smith, 2018) as well as among some of the online SRM teachers I spoke with (see section 7.2.3). The use of asynchronous online discussion also posed challenges for some of the online SRM learners. A lack of academic confidence, exemplified by Andy (case study 2), inhibited student participation in online forum discussions initially. If there was a delay in receiving feedback from peers or teachers, or the post attracted few responses, students found this disheartening, feeding the student's sense of discomfort, a point noted by Roulston et al. (2018).

The perceived lack of peer support and learning community that these students felt, as previously noted among online graduate students by Song et al. (2004), was challenging. The combination of students' lack of confidence and perceived lack of peer support combined to present challenges with learning SRM (discussed further in section 7.1.3). Online asynchronous students found their learning was interrupted, with Sophie (case study 1) frustrated that she could not travel at the pace she wanted to because she had to wait for the

teacher to respond to her questions. Such challenges have been noted in the literature by, for example, Petrides (2002) and Vonderwell (2003).

7.1.2 Generic online part time, higher education learner challenges

Some of the challenges that the online SRM students in case study 2 talked about were challenges of being a part-time, higher education online learner that have been documented in the wider literature. Among these generic challenges were those related to what Cross (1981, p. 98) refers to as ‘situational’ barriers: protecting learning time and managing the competing demands of work and, for some, family, alongside study. These challenges have been discussed by Selwyn (2011), Baharudin, Murad and Mat (2013) and Yasmin (2013), among others. Other challenges voiced by the learners in case study 2 related to work-related pressures, also noted by Kara et al. (2019), such as having demanding job roles, and employers seeing online learning as something that is done in the learner’s own time and is fitted around work commitments, which has been previously discussed by Joo (2014). In addition, some online SRM learners spoke of challenges of learning how to study and to write academically (again), a challenge noted by MacKeracher, Stuart and Potter (2006). This ‘academic’ barrier (Baharudin, Murad and Mat, 2013, p. 775) was a particular challenge for those online SRM learners I spoke with who had been out of education for some time. These generic challenges foreshadow the challenges that learners expressed in learning SRM online.

7.1.3 Challenges of learning SRM online

I now turn to the specific challenges of learning SRM online. Conversations with the online, asynchronous SRM students of case study 2 evidenced familiar challenges of learning SRM: becoming fluent in the technical language and abstract ideas that underpin methodological decision-making (Diana and Catone, 2018). These challenges were exacerbated by the online, asynchronous context and the structure of the course. The first few weeks of the course were theory-heavy. Students talked of being overwhelmed by the initial volume of material to read, understand, and discuss when responding to questions set by the teacher in the online discussion forum. The text-heavy learning environment meant students could only make their thinking visible through writing forum posts and completing assignments. The learning of what Vanessa referred to as “academic speak” - the technical language and conventions of citing others work - was challenging for case study 2 students who had been out of education for many years. This writing challenge has been discussed previously by Cooper, Chenail and Fleming (2012).

The case study 2 students of the hybrid course valued the opportunities for place-based group discussion and reflection of key ideas and concepts underpinning qualitative and quantitative research methods. However, the students of the online asynchronous course found dialogue and reflection more challenging in the online forum. One reason for this is that the development of peer support and learning community took time to develop in the asynchronous space (Lowenthal and Dunlap, 2018). The students of the hybrid course had already been studying together for a year before taking the Introduction to Research Methods module (IRM), getting to know each other in the place-based and online in the formal learning space of the classroom and in the informal spaces of the university and outside. This afforded students a sense “community” in which, as Anne put it, “we can come together and talk about our learning”. Roulston *et al* (2018, p. 196) have suggested that some SRM students seek place-based interaction with each other and teachers when they need to ‘be known in an embodied way’. The online students of case study 2 could only communicate with each other and build relationships that supported their learning of SRM through the formality of the online course forum (see section 7.3.3).

In case study 1, students had far fewer opportunities to engage with each other, due to the course design. Such limitations meant students relied on feedback from teachers in the absence of peer feedback and they lamented the limited opportunities for ‘authentic interactions’ noted as important in the learning of qualitative methods (Roulston *et al.*, 2018, p. 194). Authentic interactions, they felt, would have extended their understanding of the quantitative method they were learning. Case study 1 students also wanted access to the teachers’ wider knowledge of the method and the teachers’ experience of using the method in practice – the tacit knowledge that teachers apply when doing actual research (Johnson and Murphy, 2023). Student Sophie told me that being able to ask the tutor (Hannah) “how she used” the method and for “suggestions” for further reading was “the most useful” aspect of the course. She was frustrated and disappointed that there were limited opportunities for this. This gestures to Bourdieu’s (1992) contention that learning research methods is more than learning procedures and principles, it is about learning how to become a researcher – how to think and act as a researcher does.

The cultural specificity of some of the datasets and examples used in case study 1 posed challenges for international students unfamiliar with the systems and concepts the dataset represented. This was a barrier to students’ understanding of the methods and undermined the teacher’s plans for teaching with and through data. The course design, which limited student-teacher interaction to asynchronous, text-based communication during a limited time-period, exacerbated this barrier for Nailufar, who started the course after the teacher-

support window had closed. Another compounding factor was that this challenge was not anticipated by the teacher in the design of the course, so could not be mitigated once that iteration of the course was live.

These challenges of learning SRM provide a context in which to consider the challenges online SRM teachers spoke of, which are discussed next.

7.2 Challenges of teaching SRM online

Teachers talked about the challenges of teaching SRM online in the context of how they attempted to address them. This framing limited the discussion of challenges to those that teachers were aware of and sought to address. However, other challenges were alluded to as teachers reflected on their courses and are included here. In considering these challenges I use the lens of Shulman's (1987) Model of Pedagogical Reasoning and Action, **something that has not been done before**. The model components - teachers' content knowledge, how they transform that knowledge to make it accessible to their students, how they go about teaching, how they assess students' understanding and learning progress, and teachers' understanding and responses to the contexts in which teaching and learning take place – are useful ways in which to consider the work that teachers undertake. These challenges are summarised in Table 7-1.

Table 7-1 Summary of SRM online teaching challenges organised according to Shulman's Model of Pedagogical Reasoning and Action (MoPRA)

MoPRA components	SRM generic challenges	Online-specific challenges
Comprehension of SRM	<ul style="list-style-type: none"> Breadth of subject Understanding of content 	<ul style="list-style-type: none"> Understanding of how digital technologies used in teaching online mediate students' understanding of SRM
Transformation		
<ul style="list-style-type: none"> Preparation of SRM teaching materials & resources 	<ul style="list-style-type: none"> Managing students' cognitive load 	<ul style="list-style-type: none"> Managing students' cognitive load in an asynchronous environment Time it takes to produce high quality teaching materials
<ul style="list-style-type: none"> Representing SRM ideas in accessible ways 	<ul style="list-style-type: none"> Representing abstract ideas to diverse learners How to engage students with the subject 	<ul style="list-style-type: none"> How to represent ideas & engage students in the asynchronous environment
<ul style="list-style-type: none"> Selection of approaches or strategies that embody how the teacher wants to teach SRM 	<ul style="list-style-type: none"> Embodying methods & values in ways that encourage students' cognitive ownership 	<ul style="list-style-type: none"> Encouraging students' cognitive ownership when teacher & students are physically separated Teaching with and through data, particularly students working with their own data at a distance Teachers limited online teaching repertoire Teachers limited technological and technological pedagogical knowledge
<ul style="list-style-type: none"> Adaptation of SRM concepts to students' motivations & experience 	<ul style="list-style-type: none"> Diverse disciplinary backgrounds of students Selection of examples that resonate with students Knowing the level at which to pitch the course 	<ul style="list-style-type: none"> Not knowing who might take the online course No/limited opportunities to get to know students Setting the pace of asynchronous delivery
<ul style="list-style-type: none"> Tailoring content to individual students & the class 	<ul style="list-style-type: none"> Getting to know students Identifying & drawing upon students' experience 	<ul style="list-style-type: none"> How to be student-centred in an asynchronous online environment
Instruction	<ul style="list-style-type: none"> Supporting students in taking cognitive ownership of their learning 	<ul style="list-style-type: none"> Generating interaction & dialogue asynchronously Supporting asynchronous students in taking cognitive ownership Limitations imposed by digital technologies/ tech failure

MoPRA components	SRM generic challenges	Online-specific challenges
		<ul style="list-style-type: none"> • Lack of: <ul style="list-style-type: none"> ○ digital learning support ○ experience of teaching online ○ immediate student feedback in asynchronous environment
Evaluation	<ul style="list-style-type: none"> • Assessing students' understanding and learning 	<ul style="list-style-type: none"> • Ways of assessing students' understanding: <ul style="list-style-type: none"> ○ in the asynchronous environment ○ using the functionality of the LMS/MOOC platform ○ when staff time and budgets are limited
Environment	<ul style="list-style-type: none"> • Managing competing demands on teachers' time e.g., from students, HEI 	<ul style="list-style-type: none"> • Longer time needed to prepare to teach online • Managing expectations: <ul style="list-style-type: none"> ○ Students' access to teacher, particularly in asynchronous environment ○ Institutional, around teaching time • Not being involved in decision to move teaching online • Limited availability of digital learning support • Lack of training in how to teach online

In discussing challenges related to the use of digital technologies used in the teaching and learning of SRM online I have chosen to weave these through the components of MoPRA. I have done this because knowledge of the online environment interacts with the other components of MoPRA, including knowledge of the environment.

7.2.1 Challenges of comprehension

Shulman (1987, p. 14) argues that to teach a subject a teacher must first 'understand critically' the ideas to be taught. Challenges SRM teachers face in this regard are discussed in Chapter 2 and were not raised by the online SRM teachers I spoke with. Comprehension is not only concerned with the teacher's understanding of content, but also their understanding of 'educational purposes' (Shulman, 1987, p. 14). The online teachers I spoke with understood the educational purposes of their courses: these were woven into course planning and development (see 7.3.2 for further discussion). However, such clarity of

purpose was something that had taken time and had evolved through iterations of the course. This evolution of educational purposes among online teachers has been noted by Wiesenberg and Stacey (2008).

Inexperienced online SRM teachers did not have the knowledge of how the digital technologies used in their teaching of SRM online interact with the SRM content they want to teach and the constraints this interaction can generate. This lack of technological content knowledge (Mishra and Koehler, 2006) presented challenges, such as how the use of LMS and MOOC discussion forums mediate students' understanding of SRM concepts. Such challenges were voiced by SRM teachers I spoke with (case study 1, quantitative – Tom, case study 2, introductory SRM - Thea and Peter, Rachel – mixed methods). This lack of teacher understanding of the ways in which technology and content knowledge interact with each other and the constraints that arise presents challenges for teachers wanting to convert place-based activities, such as students working with data or participating in online tutorials using proprietary software and platforms (Davey, Elliott and Bora, 2019). [Such challenges are magnified when teachers do not have support from educational technologists.](#)

7.2.2 Challenges of transformation

Understanding of the subject is necessary but not sufficient to teach it; teachers have to transform their content knowledge in ways that are 'pedagogically powerful and yet adaptive' to the needs and experiences of their students (Shulman, 1987, p. 15). In the context of teaching SRM, Nind (2020) has argued this transformation of content and pedagogical knowledge by SRM teachers is ongoing and serves to 'dynamically develop PCK in the interests of generating technical competence and deep understanding' (p. 13). [I found evidence of this dynamic development of PCK through transformation among some of the online SRM teachers of my research \(see section 7.4.3\).](#) The transformation of SRM pedagogy for the online teaching and learning environment is discussed in section 7.4. In the school context, Shulman suggested that this transformation involves some combination of:

- Preparation of teaching materials and resources
- Representation of ideas in ways that make them accessible to students, such as examples or demonstrations
- Selection of teaching approaches or strategies that embody the ways in which the teacher decides to represent ideas
- Adaptation of the teacher's representation of ideas to the motivations, existing knowledge and skills of students

- Tailoring content to individual students and to the features and characteristics of a particular class.

These transformational processes and the challenges they present were in evidence in the conversations I had with SRM online teachers, many of whom were teaching entirely asynchronously. Indeed, these challenges were particularly acute for those teachers transforming their traditional, place-based pedagogy for the asynchronous online learning environment.

Challenges of preparation

All the online SRM courses of my research included written text with some combination of quizzes, forum tasks and videos. Teachers talked of their materials needing to be “precise” (Thea), of “high quality” (Katarina) and “professional” (Max, Katarina, Meg); this reflects how the words and images contained in teaching materials embody teachers’ ‘hopes, aspirations and passions’ (Oldale and Knightley, 2018, p. 223). There was a sense of wariness among some of the teachers about what they committed in writing to the course pages. Implicit in these teachers’ narratives, was the loss of privacy afforded by the place-based classroom discussed by McWilliam and Palmer (1995) and McShane (2004) and the ‘permanence’ of the material they published to the LMS or MOOC platform, as discussed by Conrad (2002). This material represented not only them as individual teachers but in many cases their institutions. A challenge for teachers in this study was producing online course materials that were, in the language of Shulman’s (1987) notion of pedagogic reasoning, ready for teaching, within institutional and personal time constraints. Another preparation challenge ~~for the online SRM teacher participants~~ was the organisation of their material to make it more suitable for online instruction. Teachers talked of the challenge of managing online students’ cognitive load as they planned their online SRM courses, a challenge previously highlighted by Nind and Lewthwaite (2018a) in their research with primarily place-based SRM teachers and by Kalyuga and Liu (2015) in relation to online learning environments.

Challenges of representing ideas and selecting teaching approaches

Learner diversity presented challenges for online SRM teachers in terms of how to engage students in the subject matter and in knowing where to begin (Nind and Lewthwaite, 2018a). Indeed, for the online SRM teachers of this study the selection of teaching approaches and strategies – course planning – involved complex pedagogic decisions that took much time and effort. Echoing Nind and Lewthwaite (2020), online SRM teachers grappled with how to embody the methods and values they were planning to teach in ways that would encourage

students to take ownership of their learning of content. An additional challenge was how to do this in the context of an often largely, if not entirely, asynchronous online learning environment, with no or very limited opportunities to get to know students: their interests and experience.

The teaching of SRM with and through data, seen by Nind (2020) as a distinctive feature of SRM pedagogy, presented challenges for online teachers. One set of challenges related to getting students to generate their own data, which I have previously argued can help students to ‘appreciate the interconnections between theory and practice’ (Collins, 2019, n.p.). Another set of challenges related to working with datasets, specifically the selection of data to be used by students online. Unlike in their place-based teaching, where Tom spoke of students working with their own data on occasion, this felt risky in the online context. Risk-taking is discussed further in section 7.4. Challenges concerned the practicality of supporting a group of students, each working with their own data at a distance, particularly in an asynchronous online environment when teacher and students are temporally and physically separated from one another. Among the online courses that this research focused on were examples of teachers using existing datasets (case studies 1 and 2, Katarina, Meg). However, the selection of these datasets was not without issue. Datasets needed to be readily accessible to online students – not being too big or complex that they could overwhelm. Teachers had to decide how students would work with data. For example, would students need to use software tools and how would these be accessed and supported at a distance, online?

Among the teachers I spoke with were those with limited or no prior experience of teaching online – Tom (case study 1), Thea and Peter (case study 2), Karen, Max, Katarina, and Rachel. A challenge for this group was that their instructional repertoire was largely based on their experience as place-based teachers, teaching students in-person. What was often missing was the understanding and experience of the ‘pedagogical techniques that use technologies in constructive ways to teach [their SRM] content’ (Mishra and Koehler, 2006, p. 1029). For example, Thea and Rachel spoke of not knowing how to engage students in discussion in the forums in ways that developed students’ deeper understanding of research paradigms or supported more advanced methodological learning.

Challenges of adaptation and tailoring content

Adaptation of teachers’ representations of SRM ideas to students presented challenges. Online teachers Tom (quantitative) and Rachel (mixed methods) spoke of not knowing much, if anything, about the potential students who might take their online SRM short courses, and

about the challenges this posed in terms of choosing examples that would engage and resonate with learners. It also posed challenges in terms of deciding on the level at which to pitch the course and the pace at which to move through material.

The issue of not knowing much about the students who would be taking the online course also presented challenges in terms of planning how to tailor content to individual students or cohorts, particularly where the teacher's approach was student-centred (akin to Burnard, 1999; Lea, Stephenson and Troy, 2003). Iona (mixed methods) and Dana (compulsory SRM master's module) grappled with how they would get to know their students and their interests, to identify students' experience and draw upon it in their teaching, particularly in asynchronous learning environments. These challenges have been discussed by authors such as Salmon (2004, 2012) in relation to online teaching and learning in higher education more generally, and to the teaching and learning of SRM (Lewthwaite and Nind, 2016; Nind and Lewthwaite, 2018a).

7.2.3 Challenges of instruction

Instruction, for Shulman (1987), involves what the teacher does in the classroom: explaining, fostering discussion, and class management. He argues that when teachers are faced with an unfamiliar topic they adapt their teaching performance – the things they do in situ. The instructional challenges spoken of and that I observed, however, related to the online environment in which teaching took place, which was unfamiliar to some of the teachers in this study, and to whether teachers could adapt in situ (see section 7.4.2 for discussion of this latter point).

From a sociocultural perspective interactivity between students and teacher and between students is important in supporting learning, developing students' 'internal speech and reflective thought' (Vygotsky, 1978, p. 90). This is central to much SRM teaching and learning (Hazzan and Nutov, 2014; Hesse-Biber, 2015; Howard and Brady, 2015; Silver and Woolf, 2015; Snelson, 2019) and plays an important role in moving students' understanding of SRM concepts and ideas presented by the teacher from being someone else's to becoming tools that students can use in their own research.

It is only when the learner begins to make use of the new concept in constructing an argument, explaining their point of view, or questioning the interpretation put forward by another – including the teacher's – that we can be confident that they are integrating it into their own emergent understanding of the domain of knowledge they are studying. (Skidmore, 2006, p. 31)

Yet supporting SRM students in taking cognitive ownership was challenging, particularly for those teaching introductory research methods courses (Thea, Peter, Dana). This challenge has been noted by Farfán, Garner and Kawulich (2009) and was exacerbated when teacher and students were physically and temporally separated online. Here, online SRM teachers were challenged to create and develop their students' knowledge and understanding through ongoing interaction and reflection - what Garrison, Anderson and Archer (2011) call cognitive presence. These challenges are linked to the challenges of transformation discussed in section 7.2.3, where teachers must find the 'pedagogic hooks' that will successfully connect content with learner.

Online SRM teachers grappled with their role(s) in encouraging interactivity and with, as Dana put it, "what interactivity looks like" in online SRM learning spaces. These challenges were particularly stark among those teachers with limited prior online teaching or learning experience and where dialogue was an essential ingredient in their methods teaching. Thea and Rachel missed what they implicitly felt was the spontaneity and flexibility afforded by place-based, in-person teaching when in the online environment. The sense of 'teaching into a vacuum' in the absence of immediate student feedback (Hew and Cheung, 2014, p. 45) may have compounded these challenges. Online SRM teachers were challenged as to how to adapt and transform their teaching in ways that required more anticipation of problems of interactivity, planning of responses and development of a new repertoire, as I discuss further in section 7.4.2.

Teaching SRM online posed challenges for those with little experience of teaching online, who lacked the technological and 'technological pedagogical knowledge' (Mishra and Koehler, 2006, p. 1028) with which to make informed decisions about how to use digital technologies in ways that would support their pedagogic choices. This challenge was further exacerbated for the teachers of case study 2 (Thea and Peter), who had limited or no access to digital learning support.

7.2.4 Challenges of evaluation

The in situ checking of students' understanding and identification and correction of misunderstandings by the teacher (Shulman, 1987), together with more formal assessment and feedback to students, is an important component of pedagogic content knowledge. Meg, who taught an online research methods masters' module with a MOOC component (see chapter 6), spoke of the ease with which students could misunderstand key concepts, such as "bias" and how this could impact on how students talked about "interpretive research".

For Meg the challenge was to be able to pick up on students' "misconceptions" before they "snowball into some really significant misunderstanding". This was particularly challenging in the asynchronous online learning environment of her MOOC.

Gauging where students were at with their learning presented challenges in the absence of any direct contact or visual feedback from learners for some teachers, reflecting their newness to teaching online and or predilection to draw on their place-based teaching and learning experience (Sinclair and Macleod, 2015). The functionality of LMS and MOOC software platforms with regards to assessment and feedback options posed challenges when the SRM content required an assessment of 'written discourse and its attendant subjective qualities' (Payne, 2005, p. 499) that characterise qualitative methods learning particularly (Bender and Hill, 2016). The use of open questions in this regard presented further challenges for online SRM teachers, particularly for those teaching MOOCs (Max, Katarina, Meg) where some combination of student numbers, limited staff time and budgets placed restrictions on the use of more open forms of assessment. Peer assessment was used in some courses, whereby students marked each other's responses to open questions set by the teacher. However, Max acknowledged that this strategy presented challenges about the quality and value of peer feedback when it was provided by someone who knew less about the topic than the student receiving it. This approach also risked student misunderstandings going uncorrected. Such issues have been noted more generally with peer assessment (Miller, 2003; Topping, 2009, 2010; Strijbos, Narciss and Dünnebier, 2010; Ashenafi, 2017) and with its use in MOOCs (e.g., Gamage, Staubitz and Whiting, 2021).

7.2.5 Challenges of the environment

The environmental context in which learning takes place is an important ingredient in the transformation of teachers' PCK (Cochran, DeRuiter and King, 1993). The environment includes the online environment through which teaching and learning is mediated (McShane, 2004; Blumsztajn *et al.*, 2022). The physical and temporal separation of students from each other and the teacher disrupts opportunities for teachers to dynamically respond to the needs of their learners. This separation also presented teachers with challenges about how to engage students in dialogue; this was a particular challenge for those teaching qualitative methods, but also for advanced methods teacher Karen, who wanted to extend students' thinking about visual methods. [My research illustrates how](#) this challenge interacts with the challenges of instruction discussed in section 7.2.3.

The online SRM courses included in this research are situated in the context of neoliberal economic and political policies and discourses that position students as paying customers (Clarke, 2007) and digital technology as a key driver in the achievement of productivity gains in teaching and learning (Hayes, 2015). Within this (pre-pandemic) context, teachers were adapting to teaching SRM online and to the needs of their online students, which were often foremost in their minds. Often cited challenges related to differences in the way preparation and teaching time was organised online and place-based, and in particular the impact of what Natriello (2005, p. 1888) refers to as ‘time shifting’, where the fixed time of place-based learning is removed. This time shift led some of the teachers to feel that the locus of control had shifted from them to their students. A set of challenges for those SRM teachers new to online teaching coalesced around how to adapt to this shift and manage the expectations of students who wanted unfettered access to them, and with the expectations of funders that teaching time should be tightly bounded. Even among more experienced online teachers there remained a tension between student and funder/institutional expectations of teacher availability that was a further stressor.

Challenges arose from institutional/departmental decisions to move courses online – completely or as part of a hybrid offer. Such top-down decisions presented challenges for Thea, who was unconvinced of the need to take the SRM course online and sceptical about whether the students’ learning experience would be as rich as that of place-based students. Preston (2018) argues that such challenges can be understood in terms of how teachers respond to change, and what this may mean for their teacher identity. SRM teachers needed support to adapt their teaching to the online learning environment in which they now found themselves. However, such support was not always available (see section 7.4.6). Among the participating teachers, training in teaching online or in the use of digital technologies used in online teaching and learning was unusual, and this contributed to these challenges. Such lack of training has been noted more generally among higher education teachers (Shepherd, Alpert and Koeller, 2008; Alvarez, Guasch and Espasa, 2009; Rienties, Brouwer and Lygo-Baker, 2013; Tartavulea *et al.*, 2020) **and it is something that needs to be addressed if online SRM capacity is to be developed.**

7.3 How SRM are taught online: responses to challenges

In this section I look at teachers’ responses to the challenges of learning and teaching SRM online discussed in sections 7.1 and 7.2. I use Nind and Lewthwaite’s (2020) conceptual-empirical typology of social science research methods pedagogy (hereafter referred to as the typology) as a lens through which to explore the teaching of SRM online. The typology

classifies four kinds of pedagogic action: teacher approaches; strategies; tactics; and tasks. Approaches are defined as the high-level ideas, values and beliefs that guide teacher action. Strategies are the plans teachers make about how they will share their knowledge with their students so that they can learn to be researchers. Tactics are situated, often impromptu actions that teachers make in response to what is happening in the teaching moment. Tasks are the actions students and teachers perform to generate knowledge and understanding (Nind and Lewthwaite, 2020). [First however, I reflect critically on my use of the typology and on my research design.](#)

7.3.1 Critical reflections on using the Nind and Lewthwaite typology and my research design

~~First however, I reflect on my use of the typology.~~ The typology has some strengths and benefits. It was generated from empirical research with SRM teachers, who were also involved in its validation. It teases apart different types of pedagogic action and the values that underpin these actions, providing a means by which teachers can investigate their ‘pedagogic reasoning and action’ (Shulman, 1987, p. 14). The categories are seen as permeable (Nind and Lewthwaite, 2020, p. 19), which allows for the dynamic nature of PCK, and the authors see it as a flexible framework within which new approaches, strategies, tactics and tasks can be incorporated rather than as a fixed, dogmatic classification (Nind and Lewthwaite, 2019). This latter point is important because the typology was based primarily on research with place-based SRM teachers. My use of it is in a different context, the online teaching and learning environment, where flexibility is needed to capture the nuances of pedagogical thinking and practices.

I found the typology helpful as a tool for exploring how SRM is taught online. It afforded me a means of looking beyond what teachers said, to what, how and why they did what they did. It also afforded the exploration of teachers’ tacit knowledge, what Denscombe (1982, p. 259) calls ‘hidden pedagogy’. Nonetheless, I encountered challenges with using the typology. Some participant teachers struggled to articulate their approaches and strategies. This issue is acknowledged by Nind and Lewthwaite (2020), but not as a problem, as they see the typology as a tool for teachers to discuss, discover and transform their pedagogy rather than as a means to identify every teacher action. However, in my research it was sometimes challenging to engage teachers in discussion about their pedagogy. There were several factors at play here. I sensed that the teachers felt vulnerable, guarded, and defensive (see section 7.2.4). Such feelings may in part reflect the commercial realities of teaching online, in which intellectual property and institutional reputation are highly valued, reflecting the

ongoing marketisation of higher education (Veletsianos and Moe, 2017). They may also have been a response to talking with a stranger (me), and the sense that I might be judging them. I became more sensitive to this possibility as my research progressed and made additional efforts to provide reassurance during the interviews. Teachers varied in their experience and typically lacked knowledge and language of pedagogy and learning theories. At times they struggled to articulate their rationale for why they taught the online course as they did, perhaps never really having thought about it before. My case studies were valuable in this regard because they afforded me access to course documents and, for case study 2, opportunities to observe teaching in action. Such documents and observations provided other vantage points from which to generate understanding of teacher values and planning.

The unit of analysis was a challenge: was it the course or the teacher? For Nind and Lewthwaite (2018b, 2020) the teacher is the unit of analysis. However, my case studies and interviews with online SRM teachers illustrate that a course can involve multiple actors in its creation and delivery and that approaches, strategies, tactics, and tasks may be individual and collective. My case studies also illustrate that different actors may have specific pedagogical roles and responsibilities. For example, the teacher is the content-matter expert, the educational technologist is the technology expert, the LMS/MOOC software platform mediates teaching and learning. **In using the typology, my research highlights the importance** ~~consider the issue~~ of these roles and their implications for the pedagogical conversations that the typology affords.

Another challenge I encountered with using the typology was the distinction between strategies and tactics. (Nind and Lewthwaite, 2020, p. 7) distinguish between planned strategies of what to teach and how and the tactical 'context-specific decisions' teachers make when they are teaching. However, in the online context the distinction between strategy and tactic requires further elaboration and I found that I needed to refine their definitions. Implicit in Nind and Lewthwaite's definitions of strategy and tactics is the idea that tactics happen in the classroom, in response to what is happening as students engage with what the teacher is doing. Planning happens before the teacher interacts with the students in the classroom. However, I found that planning can be an iterative and dynamic process, taking place before the work of creating the online course pages and artefacts starts and during their creation, and that strategies can take the form of specific actions that are associated with their creation, for example, simplifying language and signposting. Moreover, tactics are situated in a particular time: they are teachers' responses to what is happening in the learning environment – be that an online classroom, discussion forum, an email or message from a student, for example.

A further set of challenges arose as I discovered that some pedagogic decision-making had happened before my data collection commenced. In case study 1, the course had been designed and recorded several months before it went live, and the teacher and educational technologist had spent time deciding how to adapt the former's place-based course for the online, asynchronous environment. They were not always able to recall who had made pedagogic decisions or the rationale for them. I came to reflect early on in this case study that being able to observe the planning and development of the online course would have been valuable. It would have provided an opportunity to look beyond the public portrayal of the course development process to the private experiences of those involved (Hine, 2015). Specifically, it may have afforded the opportunity to unpick further the roles that teacher Tom as content matter expert, Will as educational technologist, Hannah as course instructor and Shirli and others at eKoobz as funder, played in designing the course and making pedagogic decisions. I was only able to speak with them individually and only once, stimulating recall and reflection through the use of course documentation and in later interviews, the use of points raised by a participant I had spoken with earlier. Had I observed the course design process, the dynamic nature of the pedagogic decision-making process would have been laid bare, as the actors negotiated content, pedagogy, environment, and technological constraints.

7.3.2 What are the similarities with place-based teaching?

[In this section I consider the similarities in the ways in which SRM is taught online and in place-based settings.](#) As discussed in section 7.2, many of the challenges online SRM teachers faced were familiar challenges of teaching SRM in place-based settings. In responding to these challenges, teachers drew on their 'resilient pragmatic beliefs based on [place-based] classroom experience' (Nind and Lewthwaite, 2020, p. 2 [my amendment]).

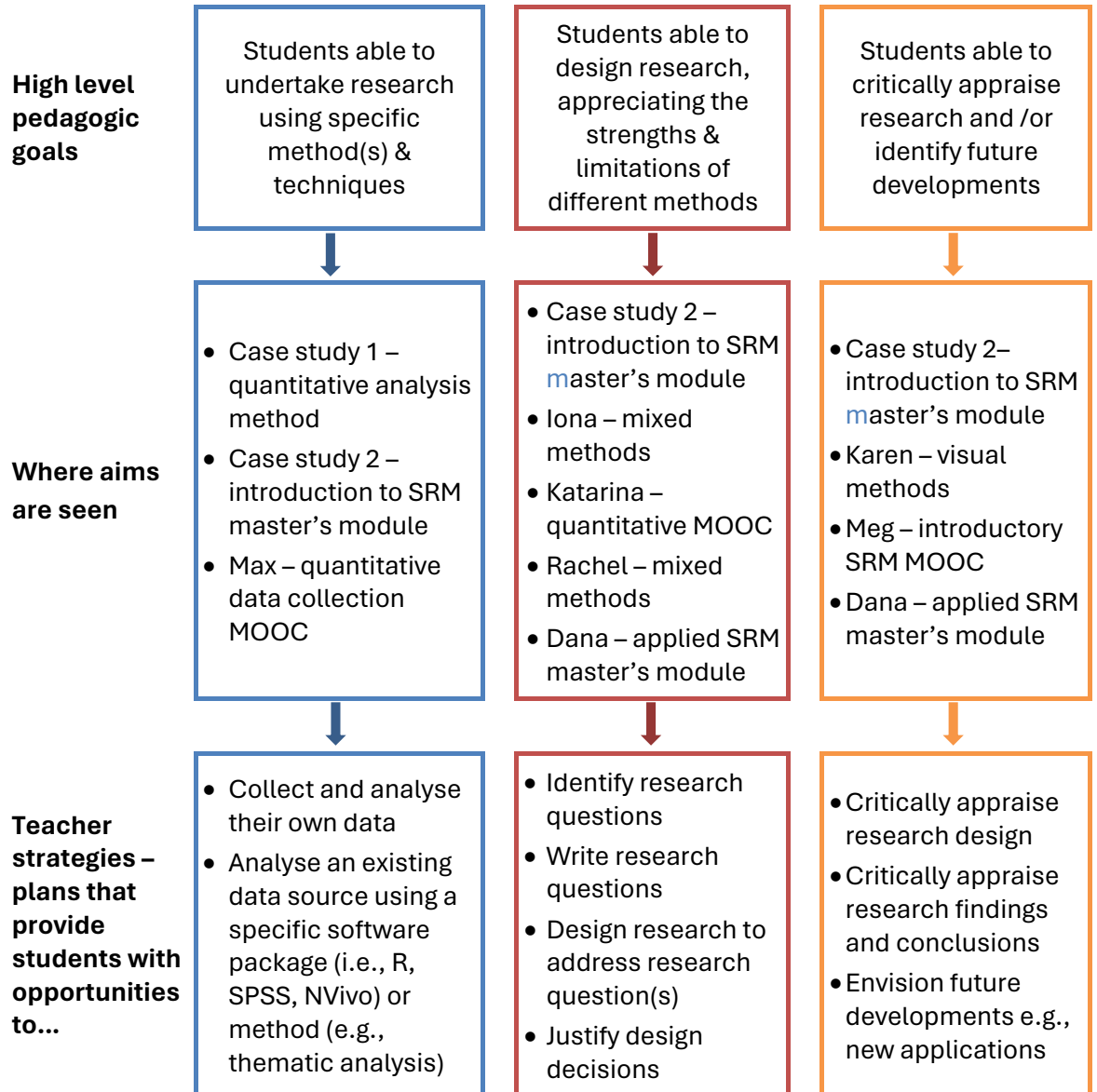
In my conversations with teachers and review of course materials, active, experiential, and student-centred teacher-values were evident and cross-cutting. I have attached these labels to what they did and said – my participants did not use these terms. These cross-cutting values among research methods teachers are well-documented (e.g., Barraket, 2005; Galliers and Huang, 2012; Earley, 2014; Peyrefitte and Lazar, 2018); they are seen across those teaching research methods in place-based, online or in hybrid contexts (Lewthwaite and Nind, 2016; Nind and Katramadou, 2022). [I consider these values in more detail in the rest of this section.](#)

Active learning

Getting students “hands on” with data, was valued by quantitative methods teachers Peter (case study 2) and Rachel (mixed methods short course). For Tom and Hannah (case study 1), teaching students how to use quantitative analysis software, providing students with opportunities to “practice” interrogating and summarising data was seen as essential and woven throughout their asynchronous online short course. Hannah, Peter, and Rachel believed that it was through practice that students developed the competence and confidence needed to apply the method. Valuing active learning in this way is common among those teaching quantitative and mixed methods SRM online, (e.g., Baglin, Reece and Baker, 2015; Ivankova and Plano-Clark, 2018; Bachner and O’Byrne, 2021) and in place-based settings (e.g., Simon, 2014; Chamberlain, Hillier and Signoretta, 2015; Bowers, 2017).

Valuing active learning was not limited to quantitative methods teachers. Its value was ubiquitous, implicitly woven through teachers’ planning of qualitative, visual, and mixed methods courses, reflecting its suitability for teaching SRM core concepts (Nind and Katramadou, 2022). Active learning strategies were combined in different ways in support of pedagogic goals, as Table 7-2 illustrates. Teachers planned opportunities for students to collect and analyse data in support of their goal for students learning how to conduct their own research. For example, Thea and Peter (case study 2), planned opportunities for students to analyse data. [This was data they](#) as teachers had generated in their own research, which they knew well [and is](#) a strategy noted among SRM teachers by Nind and Lewthwaite (2020). Unusually, Max planned for his MOOC students to analyse data that they collected using a survey questionnaire, which students designed individually. He did not share Meg’s concerns that without appropriate supervision students could end up in “ethically dubious” fieldwork situations.

Table 7-2 Active learning strategies and their relationship to course pedagogic goals



In support of the goal of teaching students about research design, online SRM teachers’ active learning strategies provided opportunities for students to apply and develop their learning. Active learning afforded opportunities for Iona’s students to develop and evaluate research designs, consolidating their understanding of design choices in mixed-methods research, echoing Hesse-Biber (2015). Katarina planned ways for her MOOC students to actively discover how research design decisions shaped the data collected, for example by getting her students to find out what data were available on a topic of interest and how concepts were operationalised.

Online SRM teachers planned opportunities for students to evaluate and critique research designs and outputs and to generate ideas. This supported the goal of developing students’ critical or creative thinking about research methods, by getting students to identify methodological issues and consider alternative designs. Meg planned opportunities for her

MOOC students to review datasets, answering questions that required them to apply ideas and concepts they had been learning about. Similarly, Karen provided opportunities for her visual methods students to apply their learning to generate ideas and research designs. However, for both Meg and Karen active learning was implicitly valued as part of a student-centred approach, as I discuss later in this section.

Active learning values went hand in hand with enabling students to be able to solve problems for themselves. Theory and practice were interwoven (Spronken-Smith, 2005), with Tom and Will (case study 1) carefully choreographing taught and practical elements. Modelling thought processes and walking students through quantitative data analysis steps are part of the quantitative methods teacher's repertoire (Nind and Lewthwaite, 2020) and were strategies Tom used. In teaching students how to use software to undertake data analysis, Tom and Hannah wanted their students to not only know how to interrogate their data and decide which analysis techniques to use, but also how to, as Hannah put it, "debug" their code and independently "figure out how to do A without you". The development of independent learners was important to Hannah and Tom, because in using analysis software students would need to be able to deal with the impact of software changes on the way analysis functions behaved. Such sentiments resonate with elements of problem-based learning (PBL) approaches (e.g., Bould and Feletti, 1997; Savin-Baden, 2000). However, Tom and Hannah's quantitative short course did not feature the group research project, student and peer assessment or student-student, student-teacher interactivity that characterise PBL (Spronken-Smith, 2005; Dyrhaug, 2014). These features were not compatible with the eKoobz course model, which aimed to limit the time (and therefore money) spent on interacting with students when the asynchronous course was live. [Active learning was also combined with experiential learning \(case study 2\).](#)

Experiential learning

~~The importance of~~ [Experiential learning](#) ~~students learning through experience~~ (Kolb, 1984) [is valued by SRM teachers for what students learn about the actual doing of research](#) (e.g., Bogumil et al., 2017; Bartels and Wagenaar, 2018; CohenMiller et al., 2020). [It involves SRM teachers getting students to undertake their own research, make their own methodological decisions, reflect and incorporate the learning from that reflection into subsequent actions.](#) This value was shared by Thea and Peter (case study 2), whose IRM module included experiential learning activities and summative assessment tasks aimed at preparing students to undertake their own research: designing an interview guide and a questionnaire; collecting data; reflecting on what they learned and its applicability to their own research

project. The timing and ordering of the module's topics were deliberate, reflecting the dissertation timetable and the research lifecycle. Thea's goal was to take students "behind the scenes", to show them and let them experience the messiness of the qualitative research process that Hammersley (2012) highlights. In teaching quantitative methods, Peter's goal was to "take [students] by the hand a bit" and provide them with the support they needed to undertake their own research, echoing Bourdieu's (1992) apprenticeship model for learning SRM. Tactics and tasks supported experiential learning, with Thea and Peter providing carefully structured opportunities for student self-reflection that supported students in identify learning that was relevant to their own research projects.

The valuing of experiential learning was a good fit with the professional backgrounds of Thea and Peter's students, who were typically funded by their employers. This power dynamic meant that, according to Thea, students' employers had a "vested interest" in their dissertation projects, which employers expected would be of "some use" to the organisation. Online qualitative methods teachers Miskovic and Lyutykh (2017) have reflected on the value of experiential learning in helping students navigate the tensions between their professional and researcher identities, and this was evident in Thea's teaching of qualitative methods. She would encourage students to think about their values and motives, and those of their research participants, telling students that "knowledge is co-constructed by researcher and researched". This synergy between experiential and constructivist values in the teaching of social research methods to professionals was noted by Nind and Katramadou (2022) in their systematic review of papers discussing the teaching of SRM.

Student-centred learning

~~Teachers'~~ Student-centred values were expressed in different ways by the online teachers of my research, reflecting the different dimensions of the concept of student-centredness: student choice; student active; student power (O'Neill and McMahon, 2005). Thea and Dana, who taught compulsory research methods master's modules, valued getting to know their students' interests and professional contexts as it afforded ways of creating pedagogical hooks that connected students' lived experience with the subject matter (echoing Howard and Brady, 2015). Thea spoke of trying to get her students "to think about the actual issues, the real things that are going on in their [lives]" and the "unusual insights" this knowledge afforded. For Dana and Iona, understanding their students' contexts allowed them to make individualised connections to the course content, enabling students to see the relevance of SRM to their own work and interests (Franco, 2016). These student-centred values reflect

constructivist notions of pedagogy, whereby knowledge is actively constructed by learners interpreting and transforming it, drawing on their own and others' experiences (Grabinger and Dunlap, 1995; Slayton and Samkian, 2017).

Students were at the forefront of the minds of all the teachers I spoke with, occupying their pedagogical thinking about what students needed to know about the subject and what challenges they might face. Will (education technologist, case study 1) wanted to remove barriers that he anticipated students would face that related to the complexity and difficulty of the subject matter and the language used, and (with teacher Tom) the variability in learners' disciplinary backgrounds. Will referred to this as "learner-first" design. Katarina offered her quantitative MOOC-students a choice of ~~in the~~ activities ~~to complete~~ ~~she set~~ ~~them~~. Karen and Meg valued collaborative learning, which they operationalised through dialogic strategies and tactics aimed at getting students talking to each other and developing their own ideas, individually and as a group. Students undertook tasks that involved collaboration and dialogue, involving students reviewing materials and considering questions set by the teacher, writing, and posting their thoughts, reflecting, and commenting on each other's posts. For Karen this dialogue "encouraged" deeper thinking and afforded students – and herself – opportunities to learn from each other as they discussed ideas and evaluated published research, illustrating the value and respect for peer expertise (as discussed by Hesse-Biber, 2015; Slayton and Samkian, 2017; Nind and Lewthwaite, 2019).

In summary, teachers' values foregrounded the ways in which they framed SRM teaching and learning challenges, their pedagogic goals and how they planned to meet them. Table 7-3 summarises how online SRM teachers' values were reflected in their plans for teaching – their strategies – and in their tactics and the activities (tasks) they and their students engaged in. It is, at first glance, striking that teachers' values, and the strategies, tactics and tasks that flowed from, them look much like those used by place based SRM teachers. Yet, I suggest that these deep-rooted ways of teaching are modified for the online environment. These modifications are discussed in section 7.3.3.

Table 7-3 Participant teachers' strategies, tactics and tasks that support their active, experiential and student-centred values

Teacher values	Strategies	Tactics	Tasks – examples of what online SRM teachers get students to do
Active learning	<ul style="list-style-type: none"> • Providing opportunities to practice • Providing students with code so that they can follow along • Planning activities that involve students applying their learning • Getting students working with authentic data • Getting students working with analysis software} • Linking theory to practice • Modelling 	<ul style="list-style-type: none"> • Demonstrating • Walking through • Explaining • Highlighting e.g., importance of a step, sequence of steps, relationship between theory & practice • Thinking aloud, narrating a process/steps • Providing alternatives • Providing further clarification/ instruction/ examples • Specifying language 	<ul style="list-style-type: none"> • Load software & data set(s) onto own device • Summarise data using different statistical techniques • Build analytical tools using software functions to answer questions • Apply individual data analysis techniques to answer questions • Develop and implement an analysis plan to answer specified questions • Undertake a literature search, identifying the main ideas/ theories and methods discussed in each article • Design a questionnaire to collect information on a specified topic • Practice coding qualitative data
Experiential learning	<ul style="list-style-type: none"> • Providing opportunities for students to collect own data • Student research project • Actively encouraging and supporting student self-reflection through dialogue 	<ul style="list-style-type: none"> • Prompting • Probing • Encouraging reflection • Comparing 	<ul style="list-style-type: none"> • Design a questionnaire/ qualitative interview guide • Undertake interviews using qualitative interview guide/ questionnaire student designed

Teacher values	Strategies	Tactics	Tasks – examples of what online SRM teachers get students to do
Student-centred learning	<ul style="list-style-type: none"> • Getting to know students • Tailoring examples/case studies to students' contexts/interests • Getting students to actively take control of their learning by offering them choices in what they read, which question they answer • Providing opportunities for peer learning 	<ul style="list-style-type: none"> • Checking in, e.g., "how are you finding the course?" • Personalising, e.g., "in your case..." • Being responsive to students' needs • Motivating & encouraging students in-situ 	<ul style="list-style-type: none"> • Reflect on experience – learning that will take forward to own research • Students introduce selves/each other, sharing their interests, experiences • Students peer-review each other's critical evaluation of a case study, paying particular attention to specified features • Students share individual reflections on a specified topic with each other, review these reflections using specified questions/prompts for thinking, and discuss reflections as a group

Practical considerations

Teachers' planning – their strategies – was also concerned with practical considerations. Online SRM teachers, like those teaching SRM in place-based contexts, spent time thinking about where to start, how to combine theory and practice, and how to teach with and through data. Comparing strategies identified by Nind and Lewthwaite in their research with primarily place-based SRM teachers to the strategies used by the online SRM teachers I spoke with, there are many similarities, as shown in Figure 7-1. This is perhaps not that surprising given the core challenges of teaching research methods, discussed in section 7.2, and the 'pedagogical roots' (Lewthwaite and Nind, 2016, p. 8) common among place-based and participating teachers. For example, the simplifying of quantitative language, noted by Lewthwaite and Nind (2016) as a strategy used by expert (place-based) quantitative methods teachers to engage their students with complex, technical content, was used by Tom and Will (case study 1) for a similar purpose in their online quantitative methods course (see section 4.3.4).

Figure 7-1 Strategies common to both place-based and online teaching of SRM

Checking understanding	<ul style="list-style-type: none">•Formative and/or summative assessment
Making content accessible	<ul style="list-style-type: none">•Making connections between theory and practice•Modelling thought processes•Simplifying technical language
Managing cognitive load	<ul style="list-style-type: none">•Scaffolding•Sequencing and structuring of course material•Providing step by step instructions
Motivating	<ul style="list-style-type: none">•Showing the relevance of data/method(s) to learners' contexts•Giving students feedback
Providing opportunities for practice	<ul style="list-style-type: none">•Getting hands on with data e.g. through data analysis•Experiencing data collection•Apply knowledge to solve problems, answer questions
Supporting learning through dialogue	<ul style="list-style-type: none">•Encouraging and supporting reflection•Group discussion•Posing questions

The ways in which these high-level strategies were implemented varied among the participating teachers, reflecting their values, what they were teaching, and the envisioned audience, such as novice or more experienced researchers. Implementation of these strategies also varied

depending on the contexts in which teaching took place – synchronously and or asynchronously, online only or with place-based teaching, and the technologies being used.

7.3.3 What is different about teaching and learning SRM online?

In this section I consider what is different about teaching SRM online. In so doing I draw on what the online SRM teachers I spoke with said was different, what I observed to be different in the way the same content was taught online and place-based (from case study 2), and by comparing findings generated from this research to the literature. I consider what is different about preparing to teach SRM, the teaching of SRM, and what students reflected was different about learning SRM online.

Preparing to teach

In preparing to teach SRM online, a fundamental decision is made about the temporal location of students and teacher in the learning environment – whether they will be together in a shared temporal, synchronous space and or temporally separated in an asynchronous space (Mick and Middlebrook, 2015; Rapanta *et al.*, 2020). Moreover, the synchronous teaching and learning space may be online, or a mix of online and place-based, as illustrated among the SRM courses being taught by the teachers I spoke with (refer to Tables 3-1 and 3-2). Deciding on the temporal location of students and teacher was pivotal because it foregrounded how teachers went on to prepare and teach SRM online. This decision was shaped by a range of cross-cutting factors, including the nature of the content matter to be taught, the likely target audience, teacher and institutional preferences and experience, financial constraints, and existing institutional relationships and investment, in particular eLearning software, platforms and services. The participating SRM teachers were not the only actors involved in this decision: funders/institutions, educational technologists and the functionality and affordances of available digital technologies played a role; one of several indicators of there being a distributed online SRM pedagogy.

When students are temporally separated from one another and the teacher, it disrupts opportunities for teachers to dynamically respond to the needs of their learners. In response to this challenge, SRM teachers' planning included a focus on the learning journey, and how to support students in moving from one concept or topic to the next. This involved highly structuring and sequencing content to manage students' linear progression, which was particularly evident in the teaching of quantitative methods online. Concepts and ideas were carefully sequenced, building in difficulty. It also involved being highly directive and providing explicit written instructions on what students needed and or were expected to do, typically within a given timeframe. Teachers thought about how students would actively engage in the

work of learning SRM when they would not be there (physically and, sometimes, temporally) with the students, looking over their shoulders or hovering in the corner of the room, available to deal with questions or problems that arose in the moment. Teachers talked of carefully selecting and collating SRM learning resources as part of the creation of course pages, such as reading lists, creating links, articles, podcasts, videos, online data repositories and archives, which provided additional scaffolding that supported the development of independent and deeper learning. They spent time planning how to link theory to practice, through use of examples, case studies and activities for students to engage in. This kind of planning can be characterised as concerned with projecting teacher presence (Garrison, Anderson and Archer, 1999).

Temporal separation also presented teachers with challenges about how to engage students in dialogue. Such challenges are both generic to online teaching and specific to teaching SRM online, particularly those teaching qualitative methods but also for advanced method teacher Karen, who wanted to extend students' thinking about visual methods. Planning involved teachers thinking about the purpose(s) of engaging [students](#) in dialogue explicitly, its sequencing, the scaffolding required and whether to engage students in dialogue as individuals and or collectively. Dialogic activities were planned that involved students responding to teachers' and students' questions about content - articles, podcasts, videos, data repositories. The functionality and affordances of the technologies being used also played a role in the planning process, which I discuss in section 7.5.

In valuing active learning (see section 7.3.2), the online SRM teachers I spoke with had to decide how they would engage students in learning SRM online when students and teacher would be temporally separated (all or most of the time). The work of sequencing instructor-led taught sessions with hands-on practical work required particular attention. Case study 1, a quantitative method short course, exemplifies this work and the distributed nature of online SRM pedagogy. This notion of distributed SRM pedagogy is [something that has not been discussed in the online SRM literature before and is missing from Mishra and Koehler's \(2006\) TPCK framework, which conceives of technological and pedagogical knowledge residing in individual teachers](#). Tom (content matter expert and teacher), with guidance from Will (educational technologist) ordered topics and associated activities that built in complexity (see Figure 4-6) through the sequencing of different types of individual learning pedagogies defined by Laurillard (2013) as acquisition; inquiry; practice and production, as illustrated in Figure 7-2. Tom and Will did not use these terms; I have applied them based on an analysis of the online course pages.

Figure 7-2 Sequencing of content and learning pedagogies to support asynchronous learning of a quantitative data analysis method

Topic No.	Acquisition	Inquiry	Practice	Production
1.1				
1.2				
1.3				
1.4				
1.5				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
4.1				
4.2				
4.3				
4.4				
4.5				
4.6				

Learning through acquisition involved Tom explaining concepts and modelling quantitative analysis actions, was the warp thread through which activity - the weft thread - was woven. Knowledge acquisition was supported using a variety of ways of representing ideas and engaging students with the content. Will was keen to get students doing things as quickly as possible, and with guidance from Tom sequenced activities that involved learning through inquiry early in the course to develop students' understanding of key concepts and gain familiarity with the analysis software. Activities involving learning through practice were introduced slowly, becoming more frequent as the course progressed. The progression of activities was intended to build and develop students' understanding and confidence of the

method, and its application to data through the writing of syntax in the analysis software. In these ways the sequencing and progression of activities can be seen as “fundamental scaffolds” (Diana and Catone, 2018, p. 146), intended to build, incrementally, higher-level knowledge. The practice activities were also intended to prepare students for the final, production tasks. These activities required students to plan and implement analytical steps that they had learned earlier in the course, to generate data with which to answer questions set by Tom. High-level instructions were provided that required students to apply their learning to make analytical decisions and reflected the strategic deployment of scaffolding in the online course to support the development of independent learning (Malik, 2017). These latter activities moved students learning on from embedding content knowledge to practising the application of knowledge to problems (Entwistle, 2005). In these ways Tom and Will sought to address the challenge of students taking ownership of their learning.

In courses where synchronous elements were planned, teachers thought strategically about what content and activities would be better suited to asynchronous or synchronous modes. Teachers who strongly valued student-centred learning approaches, strategically positioned synchronous sessions to support their getting to know their students and understanding their learning needs, and the deepening of students’ knowledge through dialogue with each other. However, the extent of synchronous activity was also shaped by more practical concerns, such as teacher availability during the time the course was live, institutional expectations that the online course would involve less teacher time, and the anticipated extent to which the course would attract an international audience.

The planning process involved the abstraction of the student, in which teachers, sometimes with support from educational technologists, envisioned the characteristics of likely students to anticipate and attempt to meet their learning needs, motivations, and challenges. The construction of this notional SRM student was suggested by the ways in which those planning to teach an online SRM course for the first time reflected on the process. I did not get the sense from what teachers said that the construction of this notional student was a formalised process, involving the creation of a written down student persona (Kozar and Miaskiewicz, 2009; Li and Xiao, 2022). Rather, from the ways it was talked about it appeared that teachers implicitly developed a mental picture of their intended students, and that this picture developed over time to reflect not only the teacher’s aspirations and assumptions but those of others – co-ordinators of postgraduate programmes like Julian (case study 2) and educational technologists like Will (case study 1). This co-constructed notional student is another example of collective SRM online pedagogy *which not been discussed in the wider online SRM pedagogic literature.*

The nascent notional student typically emphasised the difference between the online student and the place-based learners of the teacher's university experience. In this context, the notional student was typically envisioned as an adult learner with a busy life, who would experience more interruptions to their learning and, as a result, would need more scaffolding, "nudging" and encouragement to keep going. This persona could encapsulate the institutional and/or teacher's aspirations for the course to be of interest to a non-academic audience, as in the case of Katarina's MOOC; the busy (non-research) professional who needed to know something of research methods, as in case study 2 and Rachel's mixed method short course; or was more squarely focused on the doctoral student or early career researcher's needs to develop their knowledge of SRM, such as Karen's visual methods or Iona's mixed methods courses. These learner abstractions shaped SRM teachers' planning, which teachers felt became more critical in the online environment. Teachers spoke of having to anticipate more closely the needs and challenges of learners as part of planning to teach SRM online. These student abstractions helped online SRM teachers address the generic challenge of not knowing who the online students will be. **Training and guidance in the development of such student abstractions could benefit those new to teaching SRM online.**

Teachers reflected on the considerable time and effort they spent creating teaching and learning artefacts that projected their and their institution's professionalism as well as their content matter expertise. This was a high-stakes environment, which in some cases involved other actors, beyond the teacher in the production of course materials: videographers, copy editors, educational technologists. This is a further example of collective SRM pedagogy in action. It is not uncommon for other actors to be involved in the development and delivery of place-based teaching or distance learning online (e.g., Xu and Morris, 2007; Chao, Saj and Hamilton, 2010; Voogt *et al.*, 2015; Halupa, 2019). Indeed, Tummons *et al.* (2016) argue that technical staff play an important, often unacknowledged, role in the delivery of higher education circular, but online teaching and learning places them centre stage. In the context of teaching and learning SRM online their involvement has been highlighted during the COVID-19 pandemic, exposing the gaps in educational technologist support within HE institutions, gaps in the technological and pedagogical knowledge of teachers, and in teacher training (García-Morales, Garrido-Moreno and Martín-Rojas, 2021; Singh, Steele and Singh, 2021). **Tackling gaps in educational technologist support within HEIs and other SRM training providers is important if online SRM capacity is to increase.**

Teaching online: conceiving an online space

The act of teaching SRM in the online space is different to that of the physical classroom. The online teachers of my study were teaching and simultaneously attempting to embody the

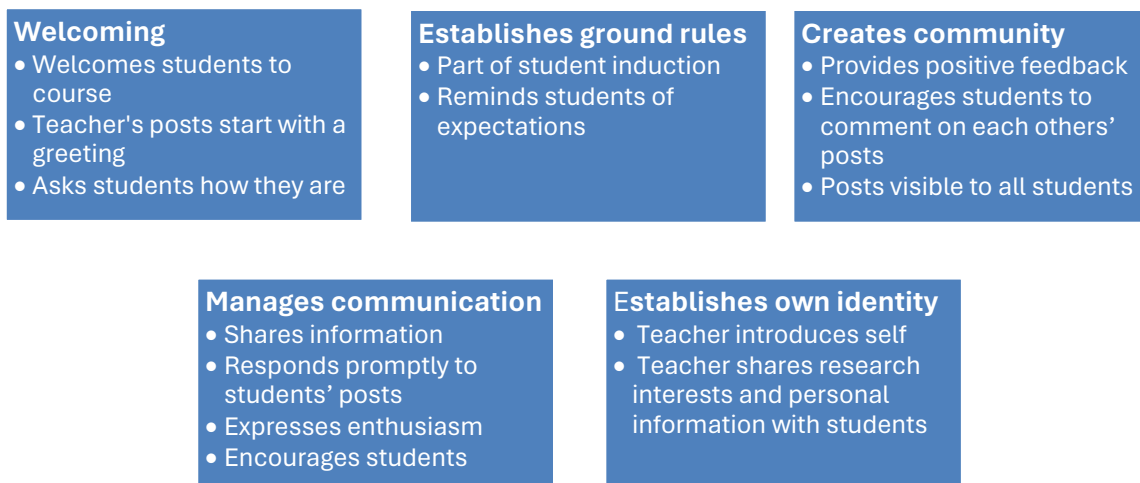
methods they were teaching to a camera and/or microphone, sometimes in the temporal presence of their students, sometimes in the presence of a technician, sometimes alone. Pineau (1994) wrote about teaching being performed in physical classrooms, but online teaching can be performed in other spaces: the teacher's office, at home and/ or in a studio. When teaching synchronously online, SRM teachers had to pay attention to the teaching materials and students simultaneous through the technology being used, bringing all these artefacts and people together (Tummons *et al.*, 2016). The teacher might not be visible to the student in the traditional sense but rather be present through the voicing-over of slides (Thea and Peter, case study 2) and or writing of course pages (Karen). In these ways the online SRM teacher was 'disembodied' from their students (Oldale and Knightley, 2018, p. 222), and the body language, gaze and other embodied cues alongside verbal cues that energise and shape the teaching performance (Vick and Martinez, 2011) were muted. Moreover, the embodied teaching practices of the physical classroom that support the teaching and learning of SRM, such as the walking around the room, observing and providing feedback to students practicing interviewing each other that were part of Thea's qualitative tactical repertoire, or the looking over the shoulder of students working with data in the lab that were a part of Tom and Peter's quantitative tactical repertoire, were constrained in the online teaching environment. Here teacher and students were physically separated.

The idea of teacher tactics – the situated, impromptu actions that teachers make in response to what is happening in the teaching moment (Nind and Lewthwaite, 2020) is problematised in the online teaching and learning environment in which students and teacher are temporally separated. It raises the question of how situated action is defined in this context, and which I argue suggest involves at least some planning. For example, the checking of students' understanding through the asking of questions in the classroom becomes the asking of questions using the functionality of the LMS or MOOC software platform. This is closer to Goodyear's (1999) definition of tactics in the online space, in which strategic plans are translated into design actions and the more detailed pedagogic decision-making that this entails. I contend that the situatedness of tactics in the asynchronous online teaching environment is in both the creation of the course pages and in how the teacher responds to issues that arise when students begin to interact with those pages. In synchronous sessions there is more potential for use of in-situ, in the moment pedagogic experimentation by the teacher, in response to feedback from students. This is akin to Nind and Lewthwaite's (2020) definition of tactics, but I argue that there is more risk involved online. The technology supporting the synchronous session may fail – and did. Teachers developed tactics to deal with technological failure in the moment, but they also planned how to avoid such problems arising

again, for example, by deciding to switch from synchronous to asynchronous delivery of later course topics or iterations of the course.

Dialogue plays an important role in the teaching of SRM, and of qualitative research methods particularly (Hazzan and Nutov, 2014; Bender and Hill, 2016; Snelson, 2019). It is valued because it supports the development of student-researchers' reflexivity (Roulston *et al.*, 2018) and the interconnections between theory and practice (see for example, Hsiung, 2016; Bachner and O'Byrne, 2021) through use of tutorials and peer discussion (Macleod *et al.*, 2016). In the online SRM courses of my research, teachers included questions for students to consider as part of lectures, synchronous discussions, and asynchronous discussion forum activities. Teachers asked questions that prompted students to consider issues such as how epistemology and ontology shape research design, ethical issues, features of datasets, and how the choice of analysis methods affects results or findings. The conversations I observed taking place in the online forum of case study 2 were, in the main, one directional, with individual students responding to a question set by the teacher. There was little interaction between peers despite Thea's instructions to students to read and respond to each other's posts and the strategic and tactical moves that she undertook that aimed to assist students in active engagement. Thea's strategic and tactical moves, summarised in Figure 7-3, are akin to those proposed by Goodyear *et al.* (2001).

Figure 7-3 Strategic and tactical moves online SRM teacher makes to support students' active engagement in asynchronous discussion

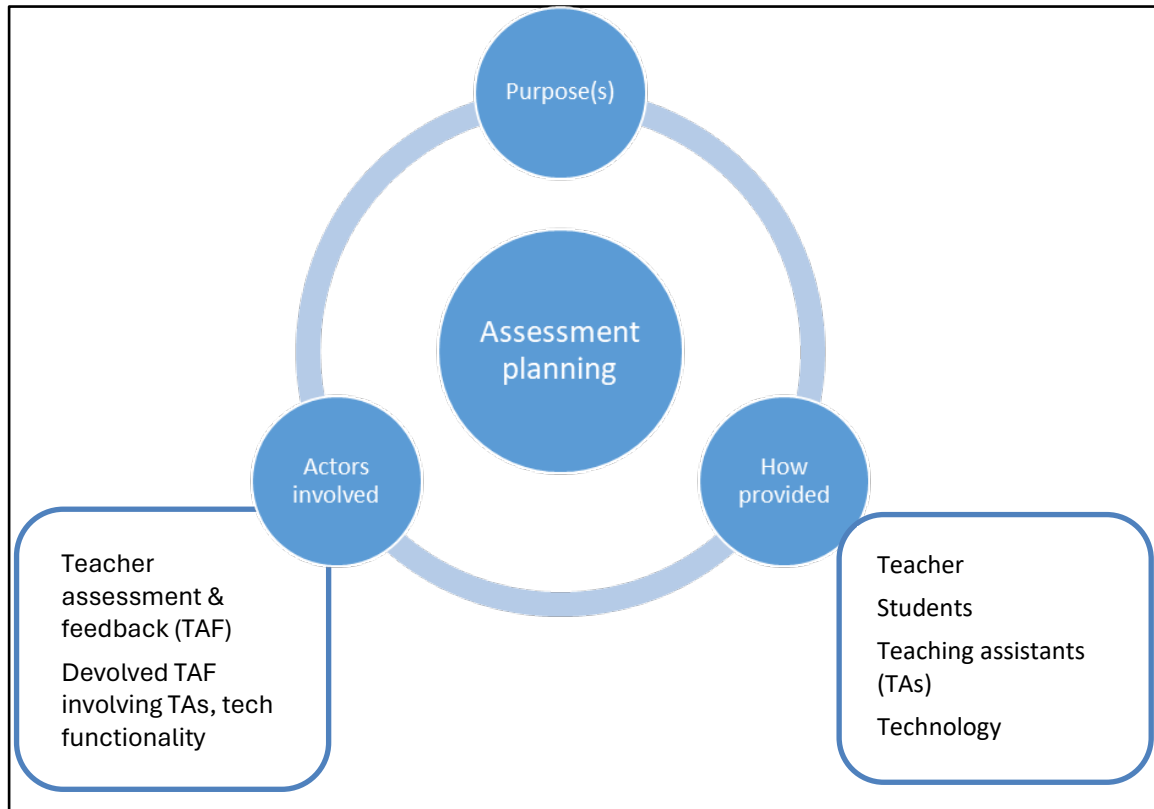


Thea's struggles with encouraging and maintaining student interactions in the online course forum were echoed by some of the other teachers I spoke with and reflect the challenges of SRM teachers new to teaching online (Hunter, Ortloff and Winkle-Wagner, 2014; Miskovic and

Lyutykh, 2017; Roulston, DeMarrais and Paulus, 2017). Indeed Iona (a mixed methods teacher) reflected that the training she received in this regard, which focused on how to start an online discussion and keep it going, was valuable.

Dialogue underpins SRM formative assessment, involving students in self-reflection and self-assessment (Burgess *et al.*, 2013) in response to feedback from the teacher (Taras, 2005) and peers. Formative assessment was a component of all the online SRM courses that the participating teachers taught. The giving of formative feedback online required planning, specifically consideration of *the purpose, how it would be provided, and the actors involved* (see Figure 7-4). *The purpose* involved teachers thinking about the purpose(s) of assessment in the context of the online environment, for example, to check students understanding of concepts/ideas, to check students' progression through the course, to identify and correct misunderstandings, to prompt deeper thinking about a concept or idea, and to provide students with a sense of how their learning was progressing. *The how it would be provided* focused on the roles that the affordances of teachers, students and technology would play in the generation and distribution of feedback. There were examples of teachers being directly involved in formative assessment and of teachers delegating the reviewing of answers and provision of feedback to students (peer assessment), to teaching assistants, and/or using affordances of the quiz functionality of the VLE (discussed further in section 7.5). Consideration of *the actors* involved thinking through who would provide formative feedback to students - the teacher, teaching assistants (typically PhD students) and/or students' peers, or the VLE technology.

Figure 7-4 Features of SRM online teachers' formative assessment planning



In summary, online SRM teachers faced a distinctive set of challenges resulting from the interactions between the generic challenges of teaching adults online and teaching SRM. Through planning, online SRM teachers (and support staff) made pedagogic decisions about what actions to take to try to address these challenges. [In the next section I consider what students felt was different about learning SRM online.](#)

7.3.4 What students felt was different about learning SRM online

Students I spoke with as part of case study 2 reflected on what was different about learning SRM online. A recurring theme among the online-only students was the loneliness and isolation of the online learning experience. Such feelings have been noted in earlier research with undergraduate (e.g., Vonderwell, 2003; Rifino and Sugarman, 2022) and postgraduate online students (e.g., Durantón and Mason, 2012; Vakoufari, Christina and Mavroidis, 2014; Kaufmann and Vallade, 2022). They are indicative of the extent to which students feel they are part of an online learning community and its attendant social presence (Garrison, Anderson and Archer, 2000). The online discussion forum assumes importance as a space in which students construct social presence. Interacting with peers asynchronously through the forum was hard work, and made harder, Paul reflected, when no one replied to his posts. Over time, I observed that students stopped commenting on each other's posts and so stopped interacting with each other. In contrast, the students of the hybrid course enjoyed what Lottie referred to as

“community”, supporting and encouraging each other in their SRM learning, and reflective of the relationship between social presence and community noted in earlier research (e.g., Rovai, 2002; Ryman et al., 2009; Pollard, Minor and Swanson, 2014).

Students reflected on the importance of dialogue in developing their understanding of SRM, which presented them with challenges discussed in section 7.1.3. Talking through concepts and their relationships to each other was helpful, and for Andy transformational, as it was only when he engaged in “conversations” with the hybrid students in a physical classroom that it “started to make sense”. This is suggestive of Vygotsky’s, (1978) notion of ‘interiorization’, in which learners’ understanding of other people’s ideas and concepts are socially mediated through discourse, first with others and then internally, ‘into personally meaningful experience’ (Frawley, 1997 cited by Lantolf, 2006, p. 90). It is interesting that Andy felt his interiorization was enabled by the physical presence of other students. It would be easy to conclude that this is evidence in support of the importance of traditional classroom-based learning. But this begs the question, why does the physical presence of students support interiorization? It may be that interiorization can and does take place through digital technology-mediated dialogue between students. My ability to explore this question was constrained by the characteristics of my case studies and the limited number of students enrolled on the courses who agreed to take part in my research. However, I ~~speculate~~ **theorise** that the teacher plays a role in this process, supporting, modelling, and encouraging dialogue. I also ~~speculate~~ **posit** that students’ familiarity with the physical classroom and the cultural practices that it represents also play a role, as Andy’s experience illustrates.

Students in both case studies indicated that they felt they had a degree of control over the pace of their learning and the ways in which they interacted with the material. This was particularly valuable when learning quantitative methods. Andy (case study 2) preferred working through the SPSS online workbook at his own pace to the pressure of the synchronous session, where he struggled to follow along, copying the steps the teacher walked the students through. Students liked being able to go back over things that they found difficult or were unsure about as many times as they needed to, supporting deeper learning. This was enabled by the affordances of the VLE, as I discuss in section 7.6. This may also be an example of the ‘flexible learning’ approach to the teaching of quantitative methods advocated by Cook, Watson and Vougas (2019, p. 22), which exploits the affordances of asynchronous learning environments to provide students with ‘choice’ over the pace of their learning (Ryan and Tilbury, 2013, p. 8). By being able to control the pace of learning students may be able to manage their anxieties and lack of confidence when learning quantitative methods (Chamberlain, Hillier and Signoretta, 2015; Macher *et al.*, 2015; Ralston *et al.*, 2016). However, students also need to be motivated and have the self-efficacy to go back over content, as Andy did (see section 7.6).

7.3.5 Teaching as design

Central to addressing challenges of teaching and learning SRM online, is teacher planning. This involved teachers in anticipating the challenges that they or their students might encounter and developing strategies to address them, such as careful sequencing of content and building in complexity to manage students' cognitive load. It also involved teachers in working out ways in which they could translate their values into pedagogical actions, for example, how to be student-centred in an asynchronous online space, or how to actively engage students in SRM. This chimes with Goodyear's (2015) view of teaching being a design process, but as he notes design involves more than planning, it involves reflection and evaluation of previous teaching instances. This notion of teaching as design is helpful when considering teachers' transformation of their SRM pedagogy for the online space, [and I discuss transformation in the next section.](#)

7.4 Transformation of SRM pedagogy for the online space

The act of teaching involves the teacher in transforming their knowledge of their subject in ways that make it accessible to their students (Shulman, 1986). This involves teachers critically reflecting, interpreting, adapting and tailoring their content knowledge as they develop their pedagogic content knowing - PCKing (Cochran, DeRuiter and King, 1993). Experience of teaching is seen as crucial in the development of PCKing (Morine-Dershimer and Kent, 1999), and is particularly important in the teaching of SRM, where formal teacher training and the pedagogic knowledge that it affords is rare. In this section I argue that transformation of SRM pedagogy for the online space is important in that it is a response not only to the needs of students, but also to the uncanniness of the online teaching and learning environment (Bayne, 2010) and the political, economic, and cultural contexts that shape it. [The application of Shulman's notion of transformation to understanding how online SRM teachers develop their PCKing is novel.](#) I discuss how teachers transform their teaching of SRM for the online context, what transformation looks like, what it enables, supports, and constrains.

7.4.1 Why transformation is important in teaching SRM online

The development of an online SRM teaching repertoire enables teachers to move beyond their place-based pedagogical roots and respond to the challenges of teaching and learning SRM online. It involves teachers learning how to teach SRM online and working through the disquiet this engenders. This learning is transformative (Mezirow, 1991, 2003; Dirkx, Mezirow and Cranton, 2006; Papastamatis and Panitsides, 2014), bringing about a shift in what SRM teachers know about teaching the subject as they 'reflect on their knowing in practice' (Schön, 1983, p.

61). It involves a change in beliefs, attitudes and knowledge that is mediated through reflection. Crucial to this is the questioning of the assumptions (Mezirow, 1991). Meg and Dana, who had been teaching SRM online for some time, reflected on the ways in which their teaching practices had been “shaped” by the online environment. They had moved beyond what was “different” about teaching SRM online to seeing themselves as online SRM teachers. In this sense, they had

pass[ed] through a portal, from which a new perspective opens up, allowing things formerly not perceived to come into view. This permits a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something, without which the [teacher] cannot progress and results in a reformulation of the [teacher’s] frame of meaning [of what teaching SRM looks like online]. (Land, Meyer and Baillie, 2010, p. ix)

I contend that in viewing transformation as a journey through liminal space (Meyer and Land, 2006), SRM teachers must let go of old notions of how they teach in place-based contexts, so that they can re-evaluate and reconstruct what SRM teaching might look like in online spaces. This liminal space is suggestive of the uncanny (Freud, 1919/2003), in which ‘the familiar is rendered unfamiliar’ (Bayne, 2010, p. 5). Here, Teachers and learners must work out how to perform familiar activities of teaching and learning – in unfamiliar online spaces, and in so doing begins the journey of transformation. This which can be unsettling and “challenging” (Thea), echoing Cousin’s (2006) contention that it is the emotional responses to transformation that makes the learning journey difficult.

During these unsettling journeys of transformation, online SRM teachers require support to feel safe and have the confidence to take the risk of doing something different (Howard and Gigliotti, 2016). Thea’s support came from talking with more experienced online teachers within her department, who challenged her belief that she needed to “replicate the classroom experience”. She started to question what her teaching might look like if she did something different and started to experiment. In case study 1, Tom was supported by educational technologist Will in transforming his teaching for the online students. Tom put his trust in Will – “I would never have been able to do this by myself” – and by doing so was able to take the risk of changing the ways he planned to teach. I discuss what supports transformation further in section 7.4.5. [First, I describe what transformation of SRM teaching for the online environment looks like.](#)

7.4.2 What transformation of SRM teaching for the online environment looks like

For Shulman (1987), transformation is a student-centred activity that involves teachers in planning: planning content, ways of representing ideas, how to teach and how to make their

representations of ideas and concepts accessible to their students. The online SRM teachers of my research also engaged in transformation as a teacher-centred activity while valuing student-centred learning and incorporated features of it in their planning (section 7.3.2). Indeed, planning is of particular importance when teaching online (section 7.3.3) and is, ~~I suggest,~~ at the heart of what transformation of SRM teaching for the online environment looks like. In planning to teach SRM online, teachers adapt their content to the online environment in which teacher and students are physically (and temporally) separated, and for a different type of learner (refer to section 7.3.3). Teachers therefore must transform their mental map of what challenges learners will face and their strategies and tactics for dealing with them [as the plan to teach SRM online](#).

Transformation of planning to teach SRM

Teachers spoke of the changes they made to the ways they prepared to teach SRM in the online environment. Change was incremental, involving teachers, sometimes with the support of educational technologists, paying particular attention to the structuring of their content - where to start, the pace at which to travel through content, its sequencing, and to scaffolding. These features of transformation were particularly evident in Tom and Max's quantitative methods courses. Teachers also carefully considered how to identify and correct student misunderstandings (Meg and Iona) and to better understand student motivations for wanting to learn the subject (Iona). In the latter, transformation involved planning the use of group discussion activities in targeted ways that took account of the constraints of the online environment – technological and institutional - whilst supporting teachers' pedagogic goals. As discussed in section 7.3.2, such strategies are seen in the teaching of SRM in place-based setting. What is transformative, ~~I suggest,~~ is that teachers become more aware of their strategic importance in the online environment. These strategies are generic, but they support strategies that Nind (2020) argues are specific to the teaching of SRM, such as teaching through data, methodological decision-making, and connecting theory to practice.

Another illustration of online SRM teachers' developing and transforming their pedagogical content knowing, was in their use of repetition strategies. Repetition was used strategically for different purposes. Iona spoke of using it to provide multiple entry points for students who she anticipated would pick up and put down their learning regularly. In the active learning of quantitative methods online I observed the use of repetition as scaffolding (case studies 1 and 2). Here teachers Tom and Peter (in Tom's case with guidance from educational technologist Will) planned multiple opportunities for students to apply their learning and practise the application of a theory and analytical method to data to develop students' competence and confidence. This planned use of repetition as scaffolding was a way in which teacher presence

was projected in the online asynchronous learning environment. It was a form of “handholding” (see section 4.3.3), whereby the student was guided by the teacher through the structure of the course pages to engage with the material and develop their understanding of it.

Perhaps one of the most striking transformations of SRM teacher planning was Iona’s development of an archive of examples, responses to student questions and additional resources. This strategy was designed in part to save time, meaning Iona could be more agile in her teaching, but it also supported Iona’s desire to “personalise” students’ learning. Through the development of the archive, she developed a way in which to teach mixed methods online that reflected her student-centred, place-based teaching values.

Transformation of content

Transformation [also](#) involved teachers adapting their course content for the online students, as part of planning how to teach. Again, this was an incremental process, with teachers drawing on student feedback and their own reflections. When student feedback was not available, the experience of educational technologists played an important role in this transformation, as illustrated by case study 1.

The transformation of content to learners was visible through the reflections of teacher Tom and educational technologist Will on their decisions to “simplify” and “streamline” content. This was not about “dumbing ... down” (Tom), but rather focusing on what students needed to know by way of introduction to the method. The envisioned learners were not the postgraduate students of Tom’s place-based course but social scientists wanting to know more about the method. Tom transformed his content, with help from Will, by stripping out the advanced content, such as the maths, and by not assuming students had prior knowledge of using the analysis software.

Content adaptation to students learning asynchronously also involved teachers anticipating the kinds of examples that would resonate and connect learners with SRM content, rather than using examples in more serendipitous ways as part of the synchronous teaching performance. It illustrates the point that in teaching SRM online teachers must plan the implementation of strategies, in this case the deployment of examples. This can be challenging for the novice online SRM teacher, who needs feedback from students to know if the selected examples are successfully connecting learners with content.

Transformation of teaching in situ

In teaching synchronously, online SRM teachers attempted to transform their place-based, embodied tactics in response to the loss of physical proximity. I use ‘attempted’ deliberately, to

indicate the trial and error, liminal space in which this transformation took place. This was visible in case study 2, where I was able to observe synchronous teaching in both the physical and online classroom. Peter's looking over the shoulder of students in the physical classroom was replaced by him requesting a student share their screen with him in the synchronous online SPSS session. Peter reflected afterwards that he had not anticipated that students would join the synchronous session using a different device to the one they were using to analyse the data. As such, the screen-sharing tactic had not been as successful as he had hoped. To get around this problem he drew on and adapted his place-based teaching repertoire, asking students questions, prompting, and probing to assess their understanding and whether they had completed the analytical step correctly. This illustrates the importance of teachers feeling confident to try something new, in this case screen sharing, and to adapt their tactics if things did not go to plan.

Transformation of SRM teaching tactics was also required in the asynchronous discussion forum environment. Such transformation was exemplified in Dana's reflections on her evolving practice of moderating asynchronous discussion. Dana spoke of how she had "reframe[d]" in her mind what interactivity looked like and what role she, as the teacher, should play in discussions as her experience of teaching SRM online grew. Her student-centred values - focusing on what her students needed - encouraged her to experiment with different ways in which she could "create that interactivity" of the synchronous discussion asynchronously. Transformation involved Dana switching from leading interaction to supporting it: leaving space for students to interact with each other whilst being responsive if they needed her input. This was something that Iona told me that she had also learned to do and speaks to Salmon's (2004) assertion that e-moderation requires a different set of tactics to those deployed in the place-based classroom.

Transformation of what teachers get students to do

Transformation can also involve SRM online teachers thinking differently about what they get their students doing. Getting students to work with their own data, Nind (2020) argues, is SRM-specific PCK. However, this was unusual among the online SRM teachers I spoke with. Where online SRM teachers planned for students to work with data, existing datasets were typically used. This was a change from what teachers said they did in the place-based classroom and was a response to the challenges of students using their own data online (see section 7.2.2). By using a teaching dataset, online SRM teachers minimised the ethical risks involved with students collecting their own data. In addition, teachers felt better able to manage students' cognitive load, controlling the size of the dataset and setting parameters around the issues students needed to consider when analysing it.

Students undertook activities individually and collaboratively. Teachers developed new activities, for example, getting students to write, share and comment on each other's blogs (Karen, Meg), and create a glossary of SRM terminology using a wiki (Meg). The case studies included examples of place-based activities that had been adapted for the online environment in which learners were physically (and temporally) separated from each other and the teacher. This adaption involved the strategic use of additional scaffolding, instructions, and the reshaping of open-ended activities into a series of more focused, discreet tasks (case study 1).

What was striking in case study 2 was how collaborative, group activities of the place-based classroom were transformed into individual activities in the online, asynchronous space, see Table 7-4 for examples.

Table 7-4 Examples of transformation of place-based SRM tasks to online environment

Task	What is changed
Consider how you would go about researching x in ways that does not involve numbers	Group discussion and verbal reporting back to class becomes individual writing of own thoughts in a post to the discussion forum
Individually make own situational, positional and /or social world map	Sharing map with group and discussing becomes individual reflection
Design questionnaire and review considering feedback	Design questionnaire in groups, sharing with class talking through rationale for questions and getting feedback from peers becomes individually design questionnaire, distribute to 5 people, collate data, reflect, and discuss what have learned about the process with tutor

Although Thea and Peter had set out with the intention of teaching their online students in the same way as their hybrid students, pedagogical differences in student tasks arose, echoing earlier findings by Girod and Wojcikiewicz (2009). These differences arose, in part, because of problems experienced with video-conferencing software the previous year, which forced a rethink about how to actively engage students with the content.

The transformation of tasks in case study 2 further illustrates the dynamic nature of transformation: changes may be responses to problems teachers and/or students encounter. Moreover, problems and responses to them will likely change over time as the contexts in which teaching and learning take place evolve. I discuss the dynamic nature of [transformation](#) further in the next section.

7.4.3 Transformation as a dynamic process

The iterative and dynamic nature of transformation (Lee and Luft, 2008) was evident in teachers' reflections on how their online SRM courses and their teaching of them had developed over time. Online SRM teachers spoke of the changes they had made or planned to make to the next iteration on their online course. For example, Karen reduced the number of activities and steps within activities for the second iteration of her online visual methods course in response to student feedback that the tasks were too burdensome, and students could not finish them within the time they had available. Iona and Thea set specific times when they would be online as a way of creating boundaries and managing students' expectations about teacher availability, along similar lines to those suggested by Dunlap (2005). Dana changed the format of the synchronous discussions with her students from open, student-led sessions to more structured sessions that focused on learning goals in response to feedback from her students.

Case study 2 afforded the opportunity to see some, albeit limited, dynamic transformation in real-time. Thea changed her strategy of synchronous online group discussion to synchronous, one-to-one sessions with students and developed her strategy of using the VLE's discussion forum due to problems she had experienced with video-conferencing technology in the first year of the course. In making these changes, Thea adapted her place-based strategies and tactics that supported and encouraged student discussion for the asynchronous environment. This involved monitoring the forum and being responsive to students' posts, developing written prompts to encourage students to further develop their written responses and comment on each other's posts, and posing questions in the forum to check students' understanding and well-being.

The trying out of different strategies, tactics and tasks did not only iterate through the online teaching of SRM; there were also signs that teachers (Max and Katarina) intended to transform their place-based teaching as a result of their online teaching experiences. Max spoke of his intention to reorganise and chunk up his place-based teaching slides, to make more explicit the different topics and ideas being introduced; something he had learned from creating his quantitative MOOC. Katarina spoke of her intention to incorporate tasks and strategies - such as using animation to convey key concepts - that were developed for her quantitative MOOC into her place-based teaching of undergraduate Q-Step students.

Such experimentation with teaching SRM for the online environment can lead teachers to develop new ways of teaching SRM – what Shulman (1987, p. 16) refers to as 'new comprehensions' in his model of pedagogic action. Such innovation was exemplified by Meg, who had been teaching SRM online for over a decade. She talked of how she and her colleagues "experiment[ed]" with how to teach SRM in a MOOC, exploring "what a whole bunch of people

can do together” rather than individually. In section 7.4.4 I discuss what transformation enables online SRM teachers to do.

7.4.4 What transformation enables SRM online teachers to do

As discussed in section 7.4.3, transformation is a dynamic process, which can be challenging for teachers (see section 7.4.1). Yet through transformation online SRM teachers developed the confidence to take risks to experiment and try out different ways of representing SRM ideas and concepts to make them accessible to students. Such experimentation is focused on finding ways to be the student-centred and active learning SRM teachers they wanted to be online.

Table 7-5 summarises the evidence I generated that supports this contention.

Table 7-5 What transformation enabled SRM teachers and learners to do

Type of transformation	What it enabled	Form
Representation of ideas and concepts	Different ways of engaging students with concepts	Collaborative activities involving students generating representations of SRM concepts e.g., glossary (Meg), blog posts (Karen, Meg)
	Making concepts more accessible to students	Animations of SRM concepts (Katarina)
Adaption of learning materials to students	Student-centred approach to teaching	Offering students choices e.g., tasks (Katarina), in ways to explore and interact with material (Iona)
		Focusing content on students’ learning goals (case study 2, Dana)
	Making content more accessible to students	Simplifying and rationalising content (case studies 1 and 2, Max) and student tasks (Karen, Rachel)
		Creating teaching and learning artefacts that can be explored and interacted with by students in different ways (Iona, Meg, Dana)
Role of teacher	Different ways of interacting with students that support a student-centred approach	Being responsive on the discussion forum but leaving “space” for students (Iona, Dana), supporting “study buddy” groups and peer learning (Dana)
Learning with and through data	Students’ active learning	Use of teaching data sets (case study 1)
		Creation of new learning pathways (Iona)

With transformation came the questioning of what the role of the SRM teacher was and with what SRM student-centred and active learning teaching looked like online. Dana’s “reframing” of how she interacted with her students is reminiscent of the ‘successful practices’ of online

teachers who ‘were constantly challenged to make themselves heard, known, and felt by [their] students’ (Baran, Correia and Thompson, 2013, p. 32). It involved her letting go of her “default” ways of thinking about and enacting interaction with students so as to redefine and reimagine teacher-student contact (Bayne, 2010).

Having discussed what transformation enabled SRM teachers to do, in the section I consider what supports the transformation of online SRM teachers’ pedagogy.

7.4.5 What supports transformation of online SRM teachers’ pedagogy

Having discussed what transformation enabled SRM to do, in this section I consider what supports the transformation of online SRM teachers’ pedagogy. I have argued that SRM teacher confidence is important in the transformation of their PCK for online teaching of SRM. In my analysis I explored what supported transformation and the building of teacher confidence, identifying four factors, which I discuss further in the rest of this section:

- a) the support of educational technologists;
- b) institutional support;
- c) course feedback; and
- d) training in teaching online.

A) Educational technologist support

Educational technologists brought knowledge of the functionality of digital technologies that could support the teaching and learning of SRM online, as exemplified by case study 1, Karen and Max. Without this kind of support, developing and delivering online SRM courses is difficult (Louw *et al.*, 2009; Roulston, DeMarrais and Paulus, 2017). It relieved the burden on teachers to have to acquire this knowledge quickly to make decisions about the design of the course. Rather, teachers put their trust in experts with whom they shared the production of the online SRM course.

The capacity that educational technologists afforded by taking on certain tasks, such as setting up course pages on the LMS/MOOC platform and co-ordinating videographers (Max) and content editors (Karen) to assist with the creation of professional-looking content, was of particular value to SRM teachers with little or no prior online teaching and learning experience. This freed up teachers’ time to focus on the more familiar aspects of planning and course content. Having access to a trusted expert, who could advise on things the teacher did not know how to do helped teachers to feel that the creation of their online course was feasible, and confident that their plans for engaging students with the content were likely to succeed. This was exemplified in case study 1 where Tom (teacher) and Will (educational technologist),

working together, combined their respective knowledge to transform not only the content of Tom's course but the ways in which it was taught. Central to this transformation was Will's insights on: a) the importance of scaffolding online learning activities in support of Tom's active learning approach; and b) the inherent structure of the course page authoring tool and its implications for the organisation and presentation of Tom's content. **Online SRM training providers can ensure that teachers have access to educational technology support, and that this support is regularly reviewed to ensure that it continues to meet teachers' and students' needs.**

B) Institutional support

Institutional, departmental and or course funder support was important, as Karen and Meg's experience exemplified. This finding echoes findings from earlier studies looking at teaching transformation (e.g., Major and Palmer, 2006; Davey, Elliott and Bora, 2019). Institutional, departmental and or course funder support included the provision of infrastructure that supported online teaching and learning, such as hardware, software and the funding of educational technologists, videographers, and other support staff. It also legitimised the time teachers put into developing online course materials and provided teachers and funding institutions with reassurance that the quality of the course was good and that the risks to institutional and personal reputation were shared. Indeed, eKoobz (course funder, case study 1) went to considerable lengths to ensure online course "quality", with Shirli and her colleagues setting up "advisory boards" comprising experts in "online pedagogy", online learning technologies and "platforms", and online learners to review courses and provide feedback (chapter 4). This was an investment in corporate reputation in an increasingly competitive online education provider marketplace (Liu, Lomovtseva and Korobeynikova, 2020). **Greater investment by SRM training providers and funders in educational technology support staff is needed to build online SRM capacity and pedagogic culture.**

Institutional support wrapped around the personal support networks some participating teachers had. These institutionally sponsored peer-support networks (Preston, 2018) aided the development of cultural practices that encouraged collaboration, risk-taking, and teacher reflection. It is not surprising that Karen and Meg, who valued collaborative learning, adopted collaborative approaches to course development, working closely with colleagues to plan, evaluate and refine iterations of their online SRM courses. Such collaborative approaches provided safe spaces in which to air concerns, share problems, and discuss and develop strategies to address them, and to reflect on how well those strategies worked. As such, these support networks afforded similar benefits to the communities of practice of the higher education teachers of Patton and Parker's (2017) study. **There is a role for HEIs and other**

providers of online SRM training in considering ways to actively encourage such peer support networks, as part of efforts to develop online SRM pedagogy.

C) Student/course feedback

The value of student feedback to teachers of online SRM courses is well-documented (e.g., Ivankova, 2010; van Wyk, 2017; Roulston *et al.*, 2018; Zhou, 2018). It can support teachers' reflection on their success in achieving their pedagogic goals (Shulman, 1986) by providing teachers with an awareness of the challenges students face (Mandouit, 2018). Feedback supported SRM online teachers in transforming their SRM pedagogy to the online environment, as exemplified by Katarina and Rachel. It provided teachers with a sense of how successful their strategies, tactics and tasks were in making SRM content accessible to students in ways that supported students' learning. This was particularly important for those teaching in asynchronous environments, where cues indicating how students were feeling about the course and what they were finding difficult or challenging, were limited.

Feedback came from different sources - student feedback and use of learning analytics generated by the VLE. Student feedback was garnered formally, through course evaluation questionnaires (case studies, Karen, Max, Rachel) or student comments on tasks (Katarina), and more informally from teachers' interactions with students during the course and teacher reflections (Iona, Meg). Using data on students' quiz scores, Rachel identified gaps in content and unclear quiz questions. These issues were remedied ahead of the next iteration of the course.

Learning analytics data, alongside guidance from educational technologists on what it represented, supported teachers in identifying and making changes to aspects of the course that (could) lead to student drop-out, such as content-heavy pages with no activities (Katarina). The use of learning analytics in this way is not without risk, as data can be misinterpreted: a point made by Shirli (eKoobz, case study 1) and by Mangaroska and Giannakos (2019) and Kaliisa, Mørch and Kluge (2022). **Upskilling SRM online teachers and educational technologists in the interpretation of learning analytics is needed, as are further examples of how such information can be used to review and refine online SRM courses.**

D) Training in how to teach online

Iona was the only SRM online teacher in my study who had received training in teaching online. This training supported Iona's development of her repertoire of strategies and tactics and the transformation of her PCK by opening her eyes to what was different about teaching and learning online, particularly asynchronously. It challenged her to think differently about her role, providing her with alternative models to those based on her place-based experience. This

speaks to Oleson and Hora's (2014) contention that ongoing teacher professional development should seek to encourage teachers to reflect on their assumptions and beliefs about teaching. These models included seeing the teacher as a supporter and facilitator of students' learning, emphasizing the social role of the online teacher alongside their instructional and managerial roles (Goodyear *et al.*, 2001; Prestera and Moller, 2001; Alvarez, Guasch and Espasa, 2009).

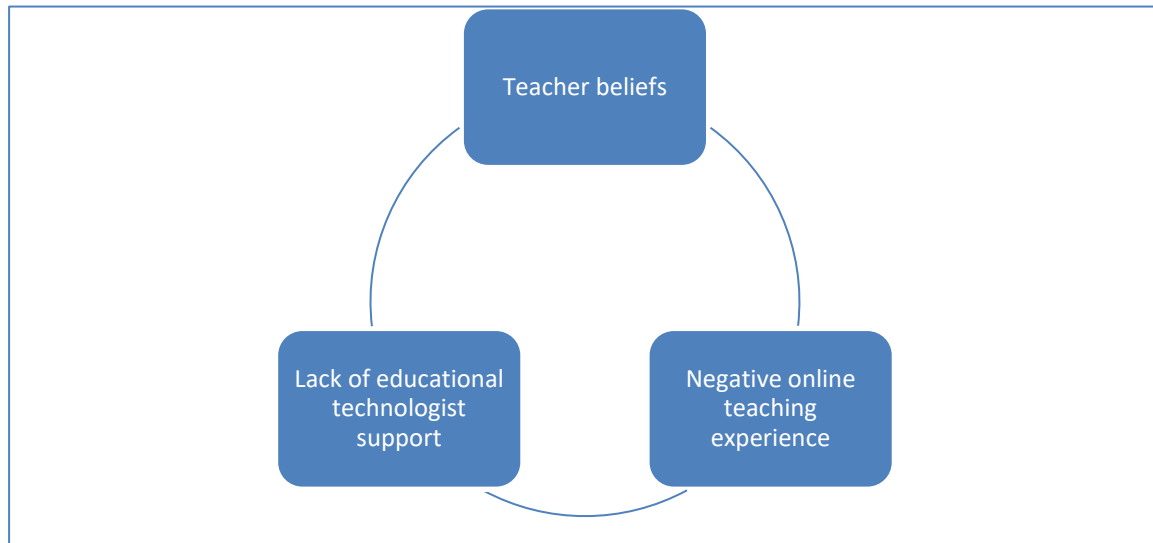
In taking the course, Iona experienced what it was like to be an online learner and how the teacher's actions and tone in written communication affected her. This helped her to envision students' challenges with learning SRM online more clearly and in so doing supported her adaptation of strategies and tactics for engaging with them e.g., how to start an online, asynchronous interaction, how to "nudge" students, and how to make explicit behavioural and cultural expectations of the online learning environment. **Training for those wanting to teach SRM online is needed. Such training could be provided through organisations like NCRM, with this and other research providing examples of practice.**

Having considered what supports online SRM teachers in transforming their pedagogy, in the next section I consider what constrains transformation.

7.4.6 What constrains transformation?

As part of my analysis, I explored what constrains the transformation of teaching SRM online, identifying several cross-cutting factors, shown in Figure 7-5. These factors are discussed in this section. Digital technologies shaped teachers' transformation of their SRM pedagogy (discussed in section 7.5), but whether they constrained transformation is unclear. It could be argued that the lack of training constrained the pace at which SRM teachers transformed their pedagogy for the online environment, but I did not generate evidence that enabled this hypothesis to be tested **and as such it is not included as a constraint here.**

Figure 7-5 Factors constraining transformation



Teacher beliefs

I have argued (in section 7.5.2) that transformation involves SRM teachers thinking differently about how to teach. If teachers believe that they need to teach in the same way online as they do in their place-based settings, then this can constrain transformation. This is because it keeps the teacher in the realm of the familiar, limiting them from asking questions about how they might (plan to) do things differently and with taking risks with their use of digital technologies (Howard and Gigliotti, 2016). Moreover, teachers' doubts about the need to teach online (the departmental or institutional mandate) and whether online learning can be as effective as place-based learning in supporting students' learning can also be barriers to transformation (Ertmer and Ottenbreit-Leftwich, 2010; Inan and Lowther, 2010; Tosuntaş, Çubukçu and İnci, 2019). Such scepticism and hesitancy of higher education moves towards online teaching and learning have been noted in the literature (Selwyn, 2017; Watermeyer *et al.*, 2021; Williamson, 2021). Thea was not convinced of the departmental rationale for an online-only IRM course or of its suitability to meet the needs of its students. Without prior experience of teaching online, this deficit narrative acted as a barrier to transformation, leading her to initially think in terms of replicating what she did in the place-based classroom. **Action is needed to tackle this online deficit narrative. Such action necessitates online SRM teachers, learners, training providers and funders engaging in online SRM pedagogic culture-building activities, such as peer learning and the development of online SRM teaching and learning resources.**

Negative online teacher experience

Experience of technology failure, particularly in online synchronous teaching risked undermining online SRM teachers' confidence, particularly those new to teaching online, such as Karen and Thea. For Thea, problems with the video conferencing software used in the first

year of the online course led to her changing the way she planned to teach the following year, replacing synchronous online sessions with asynchronous ones. The lack of educational technologist and online teaching support also played a role.

Karen responded to technology failure by changing the video conferencing software being used rather than the way of teaching. Karen, like Thea, had not taught online previously, but Karen worked in an online-first institution and had access to extensive online learning support. She had confidence in her pedagogic choices and in the value of them to learners, drawn from the institutional experience in which she was situated. Thea did not have this support. She felt frustrated that the technology did not work and unprepared to deal with it. This left her feeling vulnerable, unable to fix the problem for her students. Olt and Teman (2018) note that such feelings impact not only on teachers but also students, and this was born-out by Vanessa's comments as a first cohort online student. The failures of the video conferencing technology were frustrating and limited her interaction with teachers Thea and Peter and with the other students. **Continued institutional investment in online SRM teaching infrastructure, including hardware, software and services is required.**

Lack of educational technologist support

As highlighted in section 7.2, educational technologist support was variable. For those SRM teachers new to teaching online, with little or no technological content knowledge and or technological pedagogical knowledge, not having this support constrained their pedagogic transformation. Case study 2 exemplifies this point. Without such support Thea's belief that she should teach online as she did in place-based classrooms went initially unchallenged. When she faced technical failures, she was unprepared and unsupported in finding solutions. When she struggled with how to engage students in discussion through the LMS discussion forum, she had no one to ask for advice. It is not surprising that she felt overwhelmed by the amount of work it took to create the course and support the online students. Indeed, the observation of Roulston, DeMarrais and Paulus (2017) that educational technologist support makes the creation of online SRM courses less difficult is supported by data generated from my research. **Training providers and funders can ensure that this support is readily available and well known to those teaching SRM online.**

Thus far I have considered the challenges of teaching and learning SRM online and teachers' pedagogic responses to those challenges. In the next section I consider what roles digital technologies play in the teaching and learning of SRM online.

7.5 The roles played by digital technologies in the teaching and learning of SRM online

Thus far I have considered the challenges of teaching and learning SRM online and teachers' pedagogic responses to those challenges. In this section I consider the roles that the digital technology used played in the teaching and learning of SRM online. Specifically, I consider how the affordances of the digital technologies used supported teachers' pedagogic goals and how its use enabled, supported, and constrained the teaching and learning of SRM online. Table 7-6 summarises the digital technologies used in the teaching of SRM courses online.

Table 7-6 Digital technologies used in the teaching of SRM online

LMS/VLE platforms	<ul style="list-style-type: none"> • Blackboard • Canvas • Desire2Learn • Moodle • WebLearn
MOOC platforms	<ul style="list-style-type: none"> • Coursera • FutureLearn • OpenEdX
Web conferencing platforms	<ul style="list-style-type: none"> • Adobe Connect • Blackboard Collaborate • BlueJeans • Skype
Web based originality checking/plagiarism detection services	<ul style="list-style-type: none"> • Turnitin
Cloud-based file storage/ sharing	<ul style="list-style-type: none"> • Dropbox
Authoring tools	<ul style="list-style-type: none"> • Adapt
Other application software	<ul style="list-style-type: none"> • Data analysis software – NVivo, R, SPSS • Portable Format Document (PDF) creation, editing and viewing software (unspecified) • Presentation software - PowerPoint • Spreadsheet software- Excel • Web browsers (unspecified) • Word processing software - Word

The web conferencing platforms used reflected those in common usage in those countries in which SRM teachers were based when my fieldwork took place – September 2017 to April 2019. Since then, the use of web conferencing has become interwoven into everyday life, driven by the COVID-19 pandemic (Hurst, 2020). There have also been improvements in functionality and in the case of some platforms, stability. If my fieldwork were conducted now, the list of web

conferencing platforms used would likely look rather different, as Zoom and Microsoft Teams now dominate the market¹².

It is worth reiterating that I did not observe the creation of online SRM courses, and this limited the insights I generated about the roles digital technologies played in pedagogic decision-making. Rather, my data were generated from conversations with teachers - and in case study 1 an educational technologist and funder - in which they talked about the digital technologies used retrospectively.

Before considering how the affordances of the digital technologies used supported teachers' pedagogic goals, I consider the contextual factors shaping the use of these technologies.

7.5.1 Contextual factors shaping the use of digital technologies in teaching SRM online

It was evident from my conversations with online SRM teachers that the selection of digital technologies was shaped by what was available and supported by their universities. Teacher reflections did not indicate that they played an active role in the selection of platforms unless they experienced problems. If an alternative was available and the teacher(s) involved felt confident in using it, then they switched. In my research, this applied to Karen and her colleagues, who changed web conferencing platform after the first iteration of the course due to problems with students being able to join synchronous sessions, being put into online breakout rooms, and with being able to hear each other. The choice of LMS used for Tom's course (case study 1) was ultimately made by eKoobz and was informed by not only functionality but cost and scalability. The decision to write course pages using an authoring tool, rather than directly in the LMS was Will's decision and reflected his team's preference and practice.

LMS and MOOC platforms are not pedagogically neutral spaces: they have been created by people and companies that have values that shape the ways in which these platforms have been designed and the functions that have been encoded (Payne, 2005; Locke, 2016). Teachers may not always be aware of the embedded pedagogies of the digital tools they use to create their courses, particularly those new to teaching online. This embedded pedagogy can have implications for teachers when they come to plan and enact their teaching, sometimes limiting SRM teachers' pedagogic aspirations (see section 7.5.4). **Improving SRM teachers' understanding of the embedded pedagogies within digital tools, particularly LMS and MOOC**

¹² Source: T3 Technology Hub. (April 20, 2022). Market share of videoconferencing software worldwide in 2022, by program [Graph]. In Statista. Retrieved May 13, 2023, from <https://www.statista.com/statistics/1331323/videoconferencing-market-share/>

platforms could help support online SRM teachers in their course planning. This could be achieved through HEIs and other providers of SRM training investing in training for SRM teachers in online pedagogy and in educational technology support.

The technologies used also shaped the environment in which SRM students engaged with the course. The page templates of platforms and authoring tools used to create their SRM online courses determined how content was organised and presented on the screen, such as the fonts, text size, how pages were structured, and how content rendered on different devices. Indeed, the chunking of course content can be viewed not only as a strategy to manage students' cognitive load (section 7.3.2), but as a response to the requirements imposed by platform course page templates. Institutions may create standard institutional templates that shape teachers' and students' experiences of using the platform, in the same way that the design of a place-based classroom might impact on teaching and learning that takes place within it. Students' learning experience can also be affected by what kind of hardware device students used and its screen size e.g., a laptop or a mobile phone, and software settings, such as web browser, sound, and accessibility settings. These features shaped the environmental context in which the teaching and learning of SRM online took place.

7.5.2 Digital technology affordances and SRM teachers' pedagogic goals

I was interested in whether and how the affordances of the digital technologies used by online SRM teachers supported their pedagogical goals, *an area missing from the online SRM pedagogic literature*. Digital technologies mediate the learning of SRM online, in that these technologies are tools used by teachers and students to create and recreate teaching and learning artifacts - physical and symbolic (Mor, Craft and Maina, 2015). The functionality of digital technologies afforded SRM teachers with the means by which to: distribute SRM content and their experiences of undertaking research; engage students in dialogue, practice and reflection; and provide students with feedback to support their learning. Mediated through the course pages of the LMS/MOOC and, in some cases, video conference platforms, students worked to transform this content through dialogue (with others and internally), practice and reflection into 'personally meaningful activity' (Frawley, 1997, cited by Lantolf, 2006, p. 90).

Table 7-7 summarises the roles that the affordances of digital technologies played in supporting online SRM teachers' pedagogic goals. Unsurprisingly, distributive and connective affordances underpinned teachers' pedagogic goals. These affordances are at the heart of web-enabled technologies (Selwyn, 2017) and were compatible with SRM teachers' values, supporting active, experiential and student-centred learning. The distributive affordance of technology meant SRM teachers could provide their students with artefacts (data, descriptions of research design,

reports) that students could work with, to practise and develop their skills and understanding. Students could, and did, repeat activities, rewatch and re-read instructional content.

Table 7-7 How the affordances of digital technologies supported SRM teachers' pedagogic goals

Pedagogic goals	Roles of digital technologies
1) Students able to undertake research using specific method(s) & techniques	<ul style="list-style-type: none"> Distributing teaching datasets. data collection and/or analysis software tools, of instructions, software code, explanations, examples, student tasks
	<ul style="list-style-type: none"> Connecting students to people and resources that can help them undertake research e.g., to potential research participants, online software user fora, data repositories, libraries
	<ul style="list-style-type: none"> Providing a sandpit practise environment in which students can develop their SRM skills e.g., data management, analysis when physically and temporally separated
	<ul style="list-style-type: none"> Automating feedback, gives students immediate feedback on their understanding of e.g., concepts, analytical steps, and selection of methods, which supports development of students' understanding and their ability to assess SRM problems and apply their knowledge to solve them
2) Students able to design research, appreciating the strengths & limitations of different methods	<ul style="list-style-type: none"> Distributing research designs and critiques (others and own) for appraisal and feedback
	<ul style="list-style-type: none"> Connecting – students to different SRM ideas, research designs, real-world uses of SRM e.g., research projects' websites
	<ul style="list-style-type: none"> Providing a sandpit practise environment in which students share their research designs with teacher (and students), who can add feedback when physically and temporally separated
3) Students able to critically appraise research and /or identify future developments	<ul style="list-style-type: none"> Distributing – e.g., research reports, articles, debates (including hyperlinks) to students to critically evaluate
	<ul style="list-style-type: none"> Connecting – students to each other, the teacher, SRM debates
	<ul style="list-style-type: none"> Collaborating – provision of digital spaces that afford students means to work together to co-create (new) knowledge e.g., glossary of SRM terms when they are physically and or temporally separated
	<ul style="list-style-type: none"> Providing a sandpit practise environment in which students critique research designs – others and own - that are shared with teacher and students, who can add feedback when physically and temporally separated

Other affordances were used in more targeted ways. Automated feedback functionality – using closed questions, predetermined answer options, and feedback statements that indicate if the student got the answer correct – afforded teachers with time-efficient ways to provide students with feedback and supported goal 1. The simultaneous use of a digital workspace by students to create, modify and store SRM-related artefacts supported collaborative learning (goal 3).

7.5.3 What digital technologies enabled and supported SRM teachers and learners to do

The transformation of SRM pedagogy discussed in section 7.4 is, I argue, a response to the environment in which teaching and learning takes place - the online environment (Peruski and Mishra, 2004) - which pushes teachers to (re)engage more closely with how they teach SRM and the barriers students will face. Through developing their understanding of this new environment and its implications for teaching and learning, SRM teachers can begin to transform their teaching and develop their PCK. Wallace (2004) argues that understanding the functionality and affordances of digital technologies supports teachers' development of their PCK for the online environment. ~~Data generated from my research tend to support this idea and suggests illustrates how that this understanding can be mediated through educational technologists.~~

Table 7-8 summarises the digital technologies and its functionalities used by SRM online teachers and what it afforded teachers and students.

Table 7-8 What the digital technologies online SRM teachers used enabled and supported

Digital technology used	Functionality used by SRM teachers/ students	Affordances for online SRM teachers and students
LMS/MOOC platform	Embedded objects, hyperlinks, tagging content	Students creating their own learning pathways (Iona's students)
	Web distribution of e.g., quantitative analysis software, teaching datasets, workbooks	Provides students with means to practise data analysis (case studies 1 & 2)
	Embedded objects e.g., quantitative analysis software syntax, videos of teacher demonstrating how to undertake analytical steps using analysis software	Provides scaffolding that supports practise when teacher not present
	Activity completion	Gives teacher control over the sequencing of content, the conditions under which students can e.g., view content, be judged to have completed a module (case study 1)
	Discussion forum, quizzes	Provides teachers with ways in which to assess student understanding Provides students with feedback on their

Digital technology used	Functionality used by SRM teachers/ students	Affordances for online SRM teachers and students
		understanding & progress with their learning Provides students with time to think more deeply about a concept as they write a post
Wiki	Multiple users, search functions, upload documents, edit, comment on & link content, hyperlinks, tagging content	Student collaboration and development of their understanding of transcription (Meg's students)
Media player (e.g., in LMS, YouTube)	Play, pause, rewind, vary play speed of media files	Students can modulate the pace of instruction to suit their level of proficiency, which supported learning analytical steps (Max)
Video conferencing software	Voice Over Internet Protocols, digital streaming of audio and visual, text messaging	Enables teachers and students that are physically separated to discuss ideas together (Karen, Meg)

Iona's student-centred values and her and her colleague's desire to let students take control of their own learning shaped the design of their online mixed methods course. Rather than seeing the LMS as a vehicle for transmitting information through the recording of lectures, Iona deployed its affordances as a space that *was* both read and written (De Certeau, 1984/2007) – through the functionality of embedded objects, hyperlinks and tagged content. These *affordances* were harnessed to enable students to create their own learning pathways in response to the design of the online course (Payne, 2005). Whether and how her students did this is unclear, as I only spoke with Iona and not her students.

The distribution of analytical software and teaching datasets combined with the embedding of quantitative analysis software syntax in course pages (case study 1), or appended workbooks (case study 2) afforded students opportunities to practice. When combined with video (case study 1) students could follow along, entering the displayed syntax into the analysis software on their own device as the teacher demonstrated the quantitative technique, and comparing the outcome with what the teacher's effort produced. However, it was striking that Nailufar and Sophie both talked of writing notes, perhaps reflecting their own pedagogic roots in place-based classrooms. Indeed, Sophie did not find the videos useful, as they repeated information already available on the course pages. This supports Harrison's (2020, p. 273) finding that it is the "quality" of the teaching rather than what the technology affords that higher education online students value most. Moreover, the functionality of the embedded media player that Max believed students used - pause, rewind, and adjust the play speed – to modulate the pace of

instruction to suit their level of proficiency (Brecht and Ogilby, 2008; Merkt *et al.*, 2011), were not discussed by the students with whom I spoke. This is not to say that such affordances do not support the learning of SRM, but the limitations of my case studies meant that I did not encounter such use.

The activity completion functionality of the LMS afforded Tom (case study 1) control over the sequencing of content when he was physically and temporally separated from his students. This was important, as he wanted to ensure that students understood foundational concepts that underpinned the quantitative method before moving students on to more advanced ideas. Using the activity completion functionality of the LMS meant that Tom could specify the conditions under which students could view content, receive a certain score for an answer to a question or be judged as having completed a module. *However, it was educational technologist Will who mediated the affordances of the activity completion functionality. This further illustrates the role that educational technologists play in supporting online SRM teachers in developing and implementing their courses.*

Online SRM teachers made use of quiz question and discussion forum functionality to assess students' understanding and provide students with evaluative feedback on their understanding and application of knowledge to a particular problem. Meg believed that the use of the online forum for discussion supported students engaging more deeply with concepts and idea than would be the case in a synchronous session. This affordance has been noted by other online SRM teachers (Ivankova, 2010; Diana and Catone, 2018)

Meg and her colleagues were “experimenting” with the affordances of the MOOC platform in support of collaborative learning, ~~they were bringing people~~ *students and teachers* together to think about SRM. The affordances of wikis are well-documented in higher education teaching (see for example, Leung, Kai and Chu, 2009; Hubert-Williams, 2010; Zheng, Niiya and Warschauer, 2015). Meg and her colleagues used wikis in support of student collaboration and development of their understanding of doing research, specifically, interview transcription. The affordances of the wiki enabled students to see what each other had transcribed, and concurrently to post reflections, thoughts, and questions. These asides, as individuals undertook the work of transcription, fuelled the discussion, student reflection, and elevated the task to a collaborative one. It would have been valuable to have observed students using the wiki and had the opportunity to speak with them about the task, to understand further how the affordances of the wiki supported the development of their understanding of interview transcription. This was not possible, and my case studies did not involve use of wikis.

Video conferencing software afforded teachers and students the means to come together to discuss SRM concepts [Karen, Meg, Dana] and demonstrate and walk students through using

quantitative analysis software [Peter]. Thea used it to meet individually with her online students in support of developing an emotional social presence (Lowenthal and Snelson, 2017), which involved getting to know her students and providing them with encouragement. However, the use of video conference software generated problems for teachers and students (discussed in section 7.5.4).

In summary, the digital technologies afforded online SRM teachers and learners' ways in which they could achieve their pedagogic and learning goals. The kinds of digital technologies that the teachers and learners of my study were using were mainstream within an educational context. I did not encounter teaching of online SRM teaching that involved the use of digital technologies to create simulations and virtual worlds that students could interact with, such as those described in the literature (Bulmer and Haladyn, 2011; Baglin, Bedford and Bulmer, 2013; Snelson *et al.*, 2017; Kawulich and D'Alba, 2019). There may be several reasons for this. I struggled to find online SRM courses and consequently could not purposefully select exemplars of immersive or virtual online SRM teaching. SRM teachers' familiarity with such digital technologies may, at the time of my data collection at least, have been limited and the desire to use them in teaching SRM even more so. Moreover, even if teachers were keen to exploit the affordances of such technologies, there are few examples from which SRM teachers could learn from and draw inspiration. My research provides such examples, but more are needed and could be made available through organisations like NCRM.

7.5.4 What digital technologies constrained

Whilst digital technologies could support what SRM teachers and learners wanted to do, they also imposed constraints, which I summarise in Table 7-9 and discuss in this section.

Table 7-9 What the digital technologies online SRM courses constrained

What is constrained	How is it constrained
Learning	Technical problems with video conferencing software platforms used in synchronous online sessions constrain the development of student dialogue and understanding of SRM concepts and ideas (case study 2)
Dialogue between students and with the teachers	LMS/ MOOC discussion forum constrains socio-emotional interactions between students and the teacher that support learning through dialogue. Use of the discussion forum fizzles out (case study 2)
Development of SRM teachers' online PCK	The embedded pedagogies of the LMS/MOOC support SRM teachers in replicating the ways they teach SRM in the physical classroom online (case study 1, case study 2)

	MOOC software platform pedagogy dictates pace and form of final assessment (Max)
--	--

Learning

Learning SRM online requires students to have the necessary hardware and software, and a reliable internet connection. The students of case study 2 that I spoke with joined online sessions using their own devices: laptop computers and smartphones that included built-in microphones and in some cases cameras. These devices also included software that enabled students to access the LMS, download and open files containing lecture slides and reading materials, open datasets and analyse data, play and hear voice recordings, and engage in synchronous discussions. When devices and/or software fail, even intermittently, learning could be, and was, disrupted.

Vanessa was taking the IRM one-year course (2017-18) and experienced problems with the video-conferencing software even though she had the necessary hardware and software and a reliable internet connection. I did not observe these problems, rather Vanessa and teacher Thea talked about them. The problems related to not being able to login and hear the other people on the call and resulted in the planned synchronous sessions being abandoned. What was lost were opportunities for students to come together and discuss ideas and generate new ways of thinking. These technological problems also impacted on Thea's confidence in teaching online (see section 5.4.5), in a negative way, and pushed her toward using the online course forum to generate dialogue with students.

Dialogue between students and with teachers

Abedin, Daneshgar and D'Ambra (2012) argue that the sociability of the online learning environment is ascribed by students based on how easily it affords socio-emotional interaction: the conveying of feelings and intentions, such as humour and illocutionary force (Austin, 1962/1975). This kind of interaction can help break down social barriers and support the development of community (Ivankova and Stick, 2005), social presence (Lowenthal and Dunlap, 2018) and learning. It can also alleviate feelings of isolation and loneliness among online learners (Driver, 2018), described by case study 2 student, Vanessa.

Case study 2 illustrates how the privileging of text-based communication afforded by the LMS discussion board constrained students from interacting with one another outside of the tasks set by the teachers. One reason that the one-year IRM students' use of the LMS discussion forum withered over time, I suggest, was because the LMS lacked the social affordances that Kirschner et al. (2004) argue support and encourage the enactment of social behaviours by students. These social affordances include the ability to: create and display an online identity;

to know if others are also present in the LMS course pages; and to share documents with others. Such social affordances can take the form of plugins to the LMS (Weidlich and Bastiaens, 2019). The LMS of case study 2 did not include these plugins. It also did not include emoticon functionality. Emoticons can act as ‘nonverbal surrogates’ of behaviour in online, text-based communication environments (Derks, Bos and Grumbkow, 2007, p. 843) that afford students and teachers ways of conveying their feelings and intentions. I observed only limited use of the symbolic emoticon :) by the teacher (Thea) and one hybrid student – no emoticons or other symbolic emoticons were used in interactions through the online course forum. The task-focused communication I observed tuned out the social cues that characterise place-based interaction (Walther, Anderson and Park, 1994), limiting the development of rapport between students (Kaufmann and Vallade, 2022) that student Paul and teacher Thea lamented.

Development of teachers’ online SRM pedagogies

The digital technologies SRM teachers used to create their courses were not pedagogically neutral tools: they came with inherent pedagogies (Lane, 2009) that could constrain how SRM teachers planned to teach and taught online. This speaks to Woolgar’s (1996) contention that digital technologies are produced with particular users and uses in mind. One example is Max’s quantitative MOOC. The platform provider implemented various changes that impacted on the design of Max’s course. It moved over to an on-demand course model, meaning students could work through the course at their own pace. This change meant that Max was no longer able to control the release of modules to students, which created “bottlenecks” with peer assessment. The platform also dictated the use of a capstone project, which led Max and his colleagues to change the course activities.

The online teaching of Tom (case study 1), Thea and Peter (case study 2) involved the delivery of lectures, albeit in Tom’s case, chunked. These teaching performances replicated those of their place-based teaching, involving the transmission of information to students. Walmsley (2015) argues that this reflects a tendency by place-based teachers to use the LMS as an online container for course content. This might suggest that it is the teacher who wants to replicate their place-based pedagogy, such as Thea, but the technology also plays a role in making it easy for teachers to do so. LMS course page style sheets include functionality that enables teachers to include, for example, videos of them talking about the topic or uploading lecture slides.

Finding ways to address the constraints that digital technologies place on the design of online SRM courses is important if innovations in SRM online teaching are to be realised. One possible way to do this could be for the ESRC - or equivalents internationally - to bring together, on an ongoing basis, educational technologists, online SRM teachers, other online SRM course commissioners, and LMS platform providers to identify the functionality that is currently missing

that is needed and to explore how such functionality could be incorporated into LMS platforms. How willing these providers will be to engage in such discussions remains to be seen.

In the final section of this chapter, I summarise the answers to my research questions and the contributions my research makes to the field.

7.6 Summing up: answers to research questions

In this chapter I have sought to answer my research questions using an abductive then retroductive approach (see section 3.5) in which I have brought into dialogue the concepts, meanings and choices of online SRM teachers and learners with theoretical concepts – PCK (Shulman, 1986), transformation (Shulman, 1987), TPCK (Mishra and Koehler, 2006), and Nind and Lewthwaite's (2020) typology. This approach has generated new knowledge that deepens our understanding of:

- How SRM is taught online (research question 1);
- What challenges in teaching and learning SRM online and how teachers respond to these challenges (research question 2); and
- The roles played digital technologies in the teaching and learning of SRM online and how the affordances of digital technologies support teachers' pedagogic goals (research question 3).

This approach illustrates the utility of the aforementioned concepts in pedagogical research, and how their application can generate new knowledge and policy actions. In using these concepts, I have also tested definitions and identified weaknesses with TPCK (discussed further in section 8.3) and Nind and Lewthwaite's typology (see section 7.3.1) that have not been identified previously. I summarise the answers to my research questions in the rest of this section.

Here, I summarises my findings in relation to each research question:

Q1. How SRM is taught online - what are the similarities with place-based teaching and what is different?

Similarities between online and place-based SRM teaching

There are many similarities with place-based teaching, with teachers' drawing on their place-based pedagogical roots in their teaching of SRM online. This is perhaps not that surprising, given the core challenges of how to:

- make teachers' SRM content knowledge accessible to diverse learners;

- engage students in the subject so that they can take cognitive ownership of their learning; and
- teach with and through data.

Teachers' values – active, experiential, and student-centred – were reflected in their online strategies, tactics, and tasks.

Differences between online and place-based SRM teaching

The physical (and temporal) separation of teachers from students influenced how teachers planned and taught SRM online.

SRM online pedagogy was characterised by being distributed, with teachers' content knowledge combined with educational technologists' technological and technological pedagogical knowledge. *The distributed nature of this knowledge is not accounted for in Mishra and Koelher's (1986) TPACK framework or in Nind and Lewthwaite's (2020) typology, which both see pedagogic knowledge residing in individual teachers. Findings from my research suggest pedagogical knowledge and decision making is more complex, involving a wider group of people.*

Planning became the focus of teacher' activity and assumed greater importance.

Digital technology mediated the teaching and learning of SRM through dialogue and with and through data, which presented challenges for teachers and learners.

Q2. How do teachers respond to the challenges of teaching SRM online?

Teachers (start to) transform their pedagogy. This involves transforming:

- planning of how to teach, through a focus on the structuring of content; thinking about how to identify and correct student misunderstandings; provision of opportunities for students to practice and receive feedback to improve their learning; and use of repetition.
- content for the online student, e.g., simplifying and streamlining content, anticipating the kinds of examples that will resonate with learners.
- teaching in-situ: the teacher's looking over the student's shoulder becomes screen-sharing, teachers prompt and encourage discussion rather than leading it.
- student tasks: students work with teaching datasets rather than their own data, enabling teachers to manage ethical risks and students' cognitive load. Activities involve students learning individually and collaboratively with and through data, through dialogue and problem solving.

This transformation enables teaching with and through data – an important feature of teaching and learning SRM (Nind, 2020). It enables different ways of engaging students with concepts and making concepts more accessible for students. It also enables teachers to adapt learning materials and their teaching in ways that support student-centred approaches.

My research has also identified that the involvement of educational technology support staff, institutional support, course feedback, and training in teaching online enables online SRM teacher transformation. HEIs and other SRM course providers, with help from the ESRC, can support this transformation by:

- investing in educational technology support staff;
- recognising and valuing the time it takes teachers to create high quality online courses;
- investing in training for SRM online teachers; and
- taking active steps to counter the deficit narrative that pervades SRM online teaching.

Q3. How are the affordances of the digital technologies used in support of teachers' pedagogic goals?

Digital technologies support online SRM teachers' pedagogic goals by:

- distributing content e.g., datasets, research designs and critiques, and articles
- connecting students with each other, the teacher, SRM ideas, debates, other people and resources that may be helpful to the student's own research.
- providing a sandpit practice environment.
- collaboration opportunities, where students can work together to co-create (new) knowledge.
- providing students with immediate feedback on their understanding of SRM concepts, analytical steps, and selection of methods to solve problems.

I have also identified constraints imposed by the technologies being used and of the environments in which online SRM teaching and learning takes place. Addressing these constraints may require a collaborative approach, in which educational technologists, SRM teachers and learners come together with LMS providers to identify functionality improvements that would support online SRM pedagogic development.

In the next, concluding chapter I reflect on the opportunities and challenges afforded by online teaching and learning software platforms and associated technologies to the teaching and learning of SRM more broadly. I also reflect on the theoretical constructs I used and what my research adds to understanding those constructs.

Chapter 8 Conclusions

In this final chapter I reflect on the opportunities and challenges afforded by the online space in the teaching and learning of SRM. I consider the limitations of my research and suggest areas for future research.

8.1 Opportunities and challenges afforded by the online space to the teaching and learning of SRM

As discussed in chapter 1, there is a pervasive narrative that the use of digital technologies can transform education. In the context of my research, I have looked at transformation from the perspective of the SRM teacher, using Schulman's (1986) concept of transformation. I have argued that the SRM teacher transforms what they know about teaching and learning SRM for the online environment. My research suggests that, at an individual level, transformation in the teaching of SRM for the online environment was taking place. An important question for policy makers is what opportunities and challenges are afforded by online teaching and learning software platforms and associated technologies to the teaching and learning of SRM more broadly. I consider this question, drawing on evidence from my research and the dynamic wider context.

8.1.1 Opportunities

When I was undertaking my fieldwork (2017-2019), teaching SRM online was a minority activity in the UK. However, the COVID-19 pandemic pushed teaching and learning online, in the UK and worldwide, and with it the teaching of SRM. Although there are no published statistics on UK SRM courses and their mode of delivery, looking at the courses offered by the UK-based Social Research Association (SRA) provides an indication of the impact. The SRA is a professional body for social researchers that offers SRM training to postgraduate students and research professionals in the form of short courses. Prior to the COVID-19 pandemic all its SRM training was placed-based, now only 15 per cent of its advertised courses take place in person¹³. It seems reasonable, therefore, to suggest that the COVID-19 pandemic provided SRM teachers with the opportunity to teach online, many for the first time. With such experience comes the potential for teachers to develop their online SRM teaching repertoire. This is important,†

¹³ <https://the-sra.org.uk/SRA/SRA/Training/Training.aspx?hkey=5f47d507-ba8a-4d20-8791-50d3ae98ffea>, accessed 23/08/2023. Of 55 courses advertised, 47 were online and 8 place-based.

~~suggest~~, because in breaking free from their place-based pedagogical roots SRM teachers in online spaces are freed to transform their SRM teaching – to think creatively about how to teach and to innovate (Henriksen et al., 2021).

However, transformation is unlikely to occur or stick without additional steps. One of these steps is teacher reflection on, and evaluation of, their online teaching experience. This process supports the development of online SRM PCK, which is important, not only for professional development (Shulman, 1987; Fraser, 2016) but also for their students. Online SRM students face challenges in learning the subject online. In better understanding and anticipating these challenges, SRM teachers can plan and deliver courses that support ~~and develop~~ their students' learning. My research suggests that this practice-reflection PCK feedback loop can extend beyond the development of teachers' online SRM PCK to their place-based teaching and offers opportunities for individual teachers and the wider SRM teaching community to develop their PCK for place-based and hybrid teaching of SRM. The latter is important post-COVID-19, where universities are increasingly adopting hybrid teaching models (e.g., Carius, 2020; Saboowala and Manghirmalani-Mishra, 2020; Singh, Steele and Singh, 2021).

Moreover, the growth in teachers' publishing accounts of their experiences of teaching SRM online since 2016 (see chapter 2) and the growing SRM pedagogic culture (Nind and Katramadou, 2022) and community this has engendered, for example the NCRM pedagogy network (<https://www.ncrm.ac.uk/about/engage/networks/Pedagogy.php>) provides opportunities to accelerate the development of online SRM PCK. SRM teachers' reflections on their own experience can be contrasted with those of others; online SRM teaching strategies and tactics developed to tackle challenges can be compared, refined, and repurposed to suit the values of the teacher, the needs of their students and the context in which SRM teaching takes place. This is the collective development of PCK envisioned by Cochran, DeRuiter and King (1993), which can support teachers' reflections, evaluation, and action (Dewey, 1981) through the feeding of the teacher's internal dialogue on what they are doing and making sense of why they are doing it (van Manen, 1995). With the development of PCK at a collective level, there is also the possibility to raise the instructional quality (Depaepe, Verschaffel and Kelchtermans, 2013) of SRM teaching.

Another transformative step involves encouraging and supporting risk-taking in online SRM teaching. Risk-taking plays an important role in innovation and change (Jaeger *et al.*, 2001). Shapira (1995) argues that if the perceived risk of failure is high then people are less likely to act. Several factors have been suggested that mediate teachers' willingness to take risks: the strength of their content knowledge (Fraser, 2016); fear of being seen to fail and fear of loss of ~~loss~~ of control (Le Fevre, 2014); teacher confidence (Oleson and Hora, 2014); and a culture in

which risk-taking is supported (Fullan, 2007). Howard and Gigliotti (2016, p. 1362) argue that teachers gain confidence from ‘cop[ing] with stressful situations’. The national and regional lockdowns that occurred in response to the COVID-19 pandemic, which forced SRM teachers online, could be seen as providing such an opportunity for teachers to develop the confidence to take risks with their teaching. Post-pandemic there are opportunities to further develop and embed a risk-taking culture in the teaching of SRM online and in other spaces that stimulates and supports SRM teaching innovation (Howard and Gigliotti, 2016). The creation of safe spaces (Le Fevre, 2014) in which SRM teachers can come together in conversations to share their experiences and practices, their failures and successes, such as the NCRM Pedagogy Network¹⁴, provide opportunities for teachers to feel supported to (continue to) take risks with their teaching, to experiment, and innovate.

Such experimentation might see greater use of, for example, simulations that provide intrinsic feedback (Laurillard, 2013) to learners in response to their actions or of collaborative online tools, such as wiki pages that support the construction of new knowledge. Such innovation would support SRM capacity building initiatives, such as those funded and championed by the ESRC, which are seen as important to the UK retaining its position as a social science research leader (Economic & Social Research Council, 2022b).

In summary, there are opportunities to build an online pedagogic culture to challenge the deficit narrative associated with teaching SRM online and support SRM teaching innovation.

8.1.2 Challenges

There are obstacles to realising the aforementioned opportunities. Important amongst them is that those teaching SRM online need institutional support for the active reflection (Schön, 1983, 1987) that ‘encourages improvisation’ (Bleakley, 1999, p. 319), creativity (Bayne et al., 2020) and innovation within the planning to teach and the teaching of SRM online. This involves the creation of a supportive culture and infrastructure, in which the ‘locus of action’ (Bleakley, 1999, p. 324) is shifted from the individual teacher to the environment the context – in which teaching takes place. In other words, it becomes the responsibility of institutions and funders of SRM courses to encourage and support SRM teaching innovation.

Some of the online SRM teachers of my research benefited from access to digital learning experts with whom they could co-create online SRM courses. Working in this way can support the development of teachers’ and departments’ technological and technological pedagogical

¹⁴ <https://www.ncrm.ac.uk/about/engage/networks/Pedagogy.php>

knowledge; knowledge that enables SRM teachers to challenge eLearning pedagogic orthodoxies that can be baked into LMS and MOOC software platforms (Bayne *et al.*, 2020). Such support will come at a cost for HEIs and other SRM training providers, who will need to continue to invest in staff training and development – SRM teachers and digital learning experts – and digital technologies (Bailey *et al.*, 2018). Justifying such investment speaks to another challenge: the deficit narrative associated with teaching SRM online. This narrative was reflected by some of the teachers in my study – both qualitative and quantitative - and has been noted previously among those teaching qualitative research methods online (Hunter, Ortloff and Winkle-Wagner, 2014; Kalpokaite and Radivojevic, 2019). If the online learning of SRM is seen as inferior to its place-based counterpart, it may make it harder to justify the resources needed to support the transformation and innovation in teaching SRM described in section 8.1.2.

Teaching with and through data is fundamental to much SRM teaching and is challenging online. In undertaking my research, I came across few examples of experiential approaches to teaching SRM online, which are seen as particularly important in the learning of qualitative methods (Lapum and Hume, 2015; Patka, Miyakuni and Robbins, 2017; Call-Cummings, Hauber-Özer and Dazzo, 2019; Johnson, Murphy and Griffiths, 2019). To address this gap, teachers may need to take risks with their teaching, working through the ethical challenges of students collecting their own data and with what supervision and support looks like in the online context. Simulated environments have been suggested as a way of providing a practice environment (e.g., Snelson *et al.*, 2017; Bachner and O’Byrne, 2021), but thus far there have been few examples. Students’ and teachers’ lack of familiarity with such environments creates an additional layer of challenge to the learning of SRM.

Another challenge to realising the opportunities that the online environment affords SRM teachers is that with the move to more hybrid teaching of SRM (e.g., Lightner and Lightner-Laws, 2016; Tan and Hew, 2016; Zhou, 2018), online is seen as the secondary space, for particular types of activity (Brown *et al.*, 2023). There is a risk that this feeds a deficit narrative in which prized aspects of teaching and learning SRM – through and with students’ data and through dialogue – are considered activities best taught in a place-based setting. This risks the use of the LMS/MOOC software platform becoming primarily a knowledge container, that supports information transmission (Walmsley, 2015) rather than as a space that can support deeper learning. The hybrid SRM course of case study 2 illustrates this risk. Training in how to teach SRM online would help build teachers’ confidence that such activities can be undertaken online and indeed that the online space affords teachers and learners possibilities that are valuable. It is also important that online is not seen as the poorer relation of place-based teaching, because this risks creating/further exacerbating inequalities in access to SRM training and development

opportunities. Such an outcome would undermine the equality, diversity and inclusion agendas being promoted by UKRI (2023) and other UK social research bodies (Boelman, Bell and Harney, 2021; Government Social Research, 2021) as well as international counterparts. *Rather, there needs to be investment in building online capacity through teacher training, increasing departmental and institutional educational technology support staffing, and developing closer working relationships between these staff and SRM teachers.*

8.2 Methodological reflections

My research was concerned with pedagogy in action – what online SRM teachers do - and with understanding their teaching practice in context. As such, I adopted a ‘craft approach’ (Nind, Curtin and Hall, 2016, p. 58) to my research, in which I attempted to work with teachers to explore their knowledge of their teaching practices and intentions. This kind of knowledge is tacit and can be difficult to articulate (Gamble, 2009), so I choose case studies involving the use of multiple methods - interviews, observation, document analysis and document stimulated dialogue - ~~in an attempt~~ to reveal pedagogic decision making and action (Nind, Curtin and Hall, 2016).

Initially, I envisioned selecting cases that could be seen as exemplars of teaching SRM online. However, it soon became apparent that finding such exemplars and gaining access to them would be challenging. There were few such courses, and still fewer happening within my fieldwork window. My cases ended up being those that were willing to grant me access. My cases illustrate challenges to teaching SRM online and how teachers respond to those challenges, but I did not select them because of these challenges and response: they are not instrumental according to Stake’s (1995) definition.

The application of a craft approach using the aforementioned methods in the online teaching context presented additional ethical and practical challenges. The LMS and MOOC platforms through which much online SRM learning is mediated, are controlled systems, with control devolved to administrators by the HEI or private company. Whilst I was able to negotiate admittance to courses, observing the interactions between teacher, students and learning artefacts was much more difficult than I anticipated. There were several reasons for this.

Gaining the consent of students proved difficult – consent was mediated through the course administrator/lead. My reliance on gatekeepers (course leads/funders) to pass on information about my research to students left minimal opportunities for me to build relationships and trust. Students were also, in the main time-pressed and whilst I was able to carry out some interviews with students, opportunities to follow up were scarce. I speculate that some students felt that

taking part in my research, on top of learning SRM online, felt too much cognitively and emotionally. I underestimated these challenges. As a result, I was not able to involve as many students as I had hoped in my research.

The use of document stimulated dialogue was a pragmatic methodological decision that emerged out of an initial decision to use video stimulated recall, reflection and dialogue within an online focus group involving both teachers and learners, immediately after a learning event. ~~This method~~ Video-stimulated recall, reflection and dialogue had been used by Nind, Kilburn and Wiles (2015) and Nind and Lewthwaite (2018b) in their work with primarily place-based SRM teachers and learners. However, the method presented several significant challenges in the context of my research, and it quickly became clear that a focus group approach would be impractical. There were several reasons for this. My first case study was an asynchronous online SRM course. The distribution of potential participants across time-zones meant getting participants altogether at one point in time would be difficult. Moreover, for asynchronous courses or sessions, it would also have been difficult to identify a shared 'critical point or interesting pedagogical event or strategy' (Nind, Kilburn and Wiles, 2015, p. 565) to discuss in a timely way in the focus group when students could complete sessions and modules at different times. There were also potential bandwidth issues with sharing video and issues with the time it would take to render video clips, which presented practical challenges with the selection and sharing of these clips. These challenges proved too great for a lone PhD student.

The use of documents (e.g., course web pages, screen shots) as the stimulus material rather than video had the advantage that they were of a file size that meant they could be emailed and accessed easily by case study interview participants. Nind, Kilburn and Wiles (2015) noted the value of the video was as a stimulus, and in this regard online SRM course documents ~~could,~~ ~~and did,~~ performed a similar role. The extent to which the use of visual images enhanced pedagogic dialogue with my participants was limited, however. The reflection took place within a semi-structured interview involving myself and the participant, rather than in a group setting involving teacher and learners, in which critical insights could be generated (as per Krull, Oras and Sisask, 2007) and where teachers and learners could learn from each other's reflections (as per Nind, Kilburn and Wiles, 2015). Despite my attempts to reassure participants that my research was not evaluative, I sensed that some participants felt vulnerable, particularly when they were being asked to reflect on their practices, which might feel strange and might lead them to possibly rethink or to challenge them (see also Dadds, 1993). This prompted me to reflect on whether there was more I could do to scaffold and support the reflection by finding ways in which participants could be more involved and invested in the process, and alleviate anxieties (following Nind, Curtin and Hall, 2016). In my first case study, which was

asynchronous, the content had been generated several months before I spoke with the teacher and educational technologist who created it.

The practicalities of observing online asynchronous interactions were challenging. Interaction could take place at any time. If a student or teacher posted something, it could be some time before there was a response. What was happening in the intervening time was hidden. I struggled with how I would interact with research participants. It did not feel appropriate to communicate through the course LMS platform, as I did not want to interfere or contaminate the learning space, so communication was typically via email. But this meant there was a lag and the email communication felt quite formal. Building relationships with participants was critical, and I found it much easier in case study 2, where I attended a place-based event early in the course and had the opportunity to chat informally with them. This may reflect my own familiarity with conducting research in place-based settings.

Another challenge of my research was how to intertwine data collection and interpretation in my case studies (Stake, 1995). This was particularly challenging in case study 1, where I had missed the design stage. Gaining access to those involved in its creation and delivery was mediated by the funder (eKoobz), with the consequence that the transactional relationship between eKoobz and the teachers and educational technologist foreshadowed my interactions with teachers Tom and Hanna, and educational technologist Will. Moreover, the individual contexts within which those I spoke with were teaching and learning SRM became constraints to my following up with them after initial interview. I felt uncomfortable going back to participants with further questions after the initial interview, knowing they were busy and under pressure, and I did not, at times, follow up on things I observed because of this.

I set out aspiring to be an *alongsider* (Carroll, 2009), but I came to realise that I was also an insider and an outsider, and that I slipped between these positions in my mind and the minds of the participating teachers. I have some insider background with teaching social research methods. This gave me the advantage of what Hine (2015, p. 130) refers to as ‘the close knowledge of practices’, giving me access to a field that someone who was clearly an outsider would struggle to achieve (Aguilar, 1981). Yet being an insider meant at times I lost the ‘analytic edge’ (Hine, 2015, p. 130), failing to probe or treat as problematic accounts and situations (Dyck, 2000) during fieldwork. At times I was also an outsider, attempting to gain access to the ‘closed classroom’ (Denscombe, 1982, p. 257) in which a teacher is separate from the scrutiny of colleagues. Lortie (1969, cited by Denscombe, 1982, p. 257) suggests that this separation affords a sense of autonomy, which when combined with separation engenders a sense of ‘privacy’. This may be a reason why at times I felt teachers were guarded and uncomfortable in their conversations with me.

I planned to involve participants in member-checking my emerging codes and themes, to challenge ‘the meaning of terms or the appropriateness of their application to a given phenomenon’ (Maxwell, 2012, p. 141) as a means of testing the ‘credibility’ of my interpretations (Guba and Lincoln, 1989, p. 236). I hoped that in so doing participants would gain ‘self-understanding’ and that there might even be possibilities for personal transformation through research participation – what Lather refers to as ‘catalytic validity’ (Lather, 1986, p. 67). However, I was not able to involve participants in these ways, as they did not respond when I initially sent interview transcripts for checking and comment.

8.3 Reflections on theoretical constructs used

I applied Shulman’s (1986) concept of transformation to describe how teachers learn to teach SRM online and develop an online SRM teaching repertoire. They do this by developing a deeper understanding of the problems learners face and with finding and experimenting with ways to address these problems. The transformation of online SRM teachers’ pedagogy is, I suggest, a dynamic, iterative process in which teachers’ understanding of the challenges of teaching and learning shapes their responses to them. This process shares features of Latour’s (2008) notion of design, including attention to detail; concern with meaning-making; redesign – that is concerned with achieving situated pedagogic and educational goals in ethical and creative ways (Mor, Craft and Hernández-Leo, 2013).

Viewing online SRM teachers’ pedagogic work in this way is to see it as design for learning (Laurillard, 2013) or learning design (Mor, Craft and Maina, 2015). From this perspective online SRM teachers’ values – what Lewthwaite and Nind (2016, p. 12) call ‘pedagogic approaches’ – can be viewed as principles that guide design choices. Online SRM pedagogic decision-making can involve not just an individual teacher but a team of people, teachers (content matter experts) and online learning experts (technology experts), in which individual team members may have particular responsibilities. Nind and Lewthwaite’s (2020) typology ~~could~~ provides a framework with which SRM teachers and digital learning experts can come to understand each other’s pedagogic values and actions through discussion and work together to co-create online SRM courses. This ~~could~~ would support the innovation and risk-taking discussed in section 8.1.

I anticipated making use of Mishra and Koehler’s (2006) TPCK framework in my analysis but it proved difficult to apply to the data I generated. Central to this framework is the idea that TPCK and its constituent knowledge resides in one person – the teacher. This was not the case in my research, where pedagogic decision-making was distributed. I found the framework too simplistic – echoing Unwin’s (2007) view that it does not capture underlying factors mediating technology choices to support learning. The factors that I identified included who is funding the

development of the online course, the institutional support available to teachers, and the choices learners make about their use of devices (to join a class and to use analysis software to follow along and whether to have their camera on or off in a synchronous session).

Moreover, Mishra and Koehler (2006) suggest that teachers need to know how technology can transform the subject matter and about the ways students engage with it: what they call technological content knowledge. This conceptualisation presents the technology as the agent of change – whereas I have argued that it is the teachers' (and the students') responses to the unfamiliarity of online teaching and learning environment that brings about a change in the ways that teachers think about how they are going to teach (see section 7.4.1). At this point technological content knowledge can be helpful, along with technological pedagogical knowledge, but whether these are distinct elements for teachers in their decision-making is unclear. This echoes Archambault and Barnett's (2010) critique that TPCK does not represent the reality of teachers' decision-making because the domains in the model do not appear to exist independently of each other.

8.4 Suggestions for further research

My research speaks to the role and value of reflection in teaching (Schön, 1987) – reflection on past experiences and on bringing it to bear on anticipating what might happen next (van Manen, 1995). In this context, my research serves as 'repertoire-building' (Schön, 1983, p. 315). I have described and analysed case studies with the aim that these exemplars extend online SRM teachers' repertoires, providing ideas and challenge to place-based orthodoxies as they plan to teach and respond to events in-situ (Holmberg, 2014). Further research is needed to provide a wider range of exemplars, including with more experienced online teachers and with more advanced methods courses and in dramatically changed post-pandemic contexts.

In addition, my research illustrates the importance of planning in the teaching of SRM online. In my cases, much of the planning had taken place before I accessed the course. Further research that follows the development of online SRM courses from inception through to course delivery would be beneficial. Such research could, for example, explore how other actors are involved in the shaping of the course pedagogy, how pedagogic goals are negotiated and who makes decisions about which technologies are used, for what purposes.

Further research with online SRM learners would be valuable. My research considered the roles played by digital technologies such as LMS and MOOC software platforms in the teaching and learning of SRM. Learning design proponents argue that the aim of research in this space is to identify ways in which the use of technology can further students' learning (Mor, Craft and

Maina, 2015). Further research, exploring in more detail how online SRM teachers' and students' make use of the functionality and affordances of the LMS in support of methodological learning would be valuable.

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Appendix A Ethics Approval

A.1 University of Southampton Research Ethics Committee application



This version updated December 2013

SSEGM ETHICS SUB-COMMITTEE APPLICATION FORM

Please note:

- **You must not begin data collection for your study until ethical approval has been obtained.**
- ***It is your responsibility to follow the University of Southampton's Ethics Policy and any relevant academic or professional guidelines in the conduct of your study. This includes providing appropriate information sheets and consent forms, and ensuring confidentiality in the storage and use of data.***
- ***It is also your responsibility to provide full and accurate information in completing this form.***

1. **Name(s):** Debbie Collins

2. **Current Position** PhD Student

3. **Contact Details:**

Division/School NCRM

Email [REDACTED]@soton.ac.uk

Phone [REDACTED]

4. **Is your study being conducted as part of an education qualification?**

Yes No

5. **If Yes, please give the name of your supervisor**

Prof Melanie Nind, Dr Sarah Lewthwaite, Dr John Woollard

6. **Title of your project:**

The teaching and learning social research methods online

7. **Briefly describe the rationale, study aims and the relevant research questions of your study**

The teaching and learning of advanced social science research methods (ASRM) is of growing importance. Several high-profile capacity-building initiatives have been launched in recent years by research funders in the UK aimed at improving the skills of post graduates and undergraduates and

strengthening the competitiveness of the UK's knowledge economy (Economic & Social Research Council 2015; Nuffield Foundation n.d.). However, authors such as (Earley 2013; Kilburn et al. 2014) note that the pedagogy of social research methods is an under-developed area and call for further research. One response to this gap is the ESRC National Centre for Research Methods (NCRM) -funded 'Pedagogy of Methodological Learning' project, which aims to support capacity building and facilitate methodological innovation. My doctoral research, also funded by the ESRC, forms a distinct strand of this NCRM project, focusing on the ways in which digital technologies are being used in the teaching and learning of advanced social research methods and how such technologies may support the ESRC's strategic aims of building advanced research methods capacity and facilitating methodological innovation. Specifically my research focuses on the teaching of advanced social research methods in online settings; an area where there has been little research. My research is not concerned with evaluating courses or teachers but rather engaging with teachers, learners and researchers to illuminate the challenges, demands and processes involved in teaching and learning advanced research methods in an online environment. The labelling of social research methods courses as advanced can be subjective, but for the purposes of my research I am including courses badged as 'advanced' or 'intermediate' on the NCRM database of social research methods courses and those that include the term advanced in the course title and or course description (e.g. being run as part of a summer school), or that form part of a postgraduate programme of study.

The aims of my research and the questions I am seeking to answer are as follows.

- To describe and explain the role(s) that digital technology plays in the teaching and learning of advanced social research methods (ASRM) in online teaching environments
 - What role does digital technology play in helping learners make connections between theory and practice, and what role can it play?
 - How does digital technology support new ways of thinking and new forms of social research practice?
 - What are the challenges of teaching and learning ASRM in an online environment
- To identify examples of where digital technology is being used creatively in teaching and learning in online settings (to overcome challenges)
 - What does the creative use of digital technology in teaching and learning look like?
- To provide guidance and resources for ASRM teachers that can help them develop ASRM pedagogies that exploit digital technologies in online settings
 - How is digital technology being used to facilitate ASRM critical thinking?
 - How can digital technology support the learning through doing of ASRM?

8. Describe the design of your study

My research involves case studies and semi-structured interviews with teachers of advanced social research methods in online courses. These two strands will run in parallel, and it is anticipated that

there will be some cross pollination, for example issues arising in a semi structured interview being explored in the case study and vice versa. The focus of my research is on how digital technology may support and enhance the teaching of advanced social research methods teaching. This is a complex issue, one with multiple realities reflecting the inter-relationships between the subject, learners, teachers, institutions, teaching and learning spaces, technology and pedagogy. Case studies will allow me to explore these different inter-related realities in-depth. Advanced social research methods courses cover a wide range of methods and online courses can be organised in different ways. The semi-structured interviews with teachers of ASRM in online environments will involve individuals from outside the case study sites, and will seek to capture this diversity.

The case study element involves the selection of two ASRM online courses. These will be based in the UK. The case studies involve data collection with key actors (course leaders, teachers and learners) at a number of points in time. Data collection includes semi-structured interviews, observations, follow up research conversations and focus groups. Observation of the course and the pedagogic interactions is at the heart of my case studies, and these observations will stimulate research conversations with teachers and learners. The kinds of observational data that I will collect will evolve as I make contact with possible case sites and discover how the online teaching and learning space is used in practice. However, an important set of observational data will be the communications between learners and between learners and teacher(s) within the course Virtual Learning Environment (VLE). The focus group will involve stimulated recall, reflection and dialogue. This method has been used successfully in the Pedagogy of Methodological Learning project (approved ERGO submissions 19903 and 24934), where participants select segments of the course to review and discuss. In an online environment the playing back of video clips of learning segments can be tricky because of the time it takes to render the clip. I therefore propose use a range of stimulus material, which may include video clips, but also screen shots to facilitate recall and discussion. Figure 1 shows how data collection will be organised. Data collection will be participant-centred and I will use technologies that maximise participation by being as accessible as possible.

Figure 1 – case study design

Timing	Method(s)	Who	Purpose/Focus
Before course starts	Semi-structured interview (individual/paired), either face to face or via Skype. Interview will be audio recorded with participants' consent	Course leader & Teacher(s)	<ul style="list-style-type: none"> • Explore course history (when set up, evolution, why online) • How course fits into wider teaching at the institution • Pedagogic culture of department/institution • Teacher background/ experience - in ASRM and in teaching in online environment (focusing on how this informs what they are going to do on this course) • Involvement in course development, and in any previous iterations of the course • (Anticipated/known) challenges in teaching this course online & how planning to tackle them • Course pedagogy: strategy; activities; tasks and how plans to use digital technology to support pedagogy
During course	Online observation of teaching activities on the course through VLE. Observations will be noted using an observation sheet. Particular observations will be followed up by email/Skype/ through the VLE. Data from these follow up research conversations will be used in the research with participants' consent.	Teacher	<ul style="list-style-type: none"> • What is the teacher doing / role in synchronous and asynchronous sessions? • How does the teacher engage learners in learning? • What affordances of the technology does the teacher use? How are they used and to what affect? • What kinds of interactions take place between teacher and learners in synchronous and asynchronous spaces, and what are their features? • How are threshold concepts signified? • How is learning/ lack of understanding identified by the teacher? What signifiers of learner understanding does the teacher look for? • What does the teacher do when learners have misunderstandings or don't understand something?
During course	Online observation of learners' as they engage with the course through VLE. Observations will be noted using an observation sheet. Particular observations will be	Learners	<ul style="list-style-type: none"> • What are learners doing / role in synchronous and asynchronous sessions? • What are the signifiers that learners are engaged in the activity? • What affordances of the technology do the learners use? How are they used and to what affect? • What kinds of interactions take place between learners in synchronous and asynchronous spaces, and what are their features? • How understanding (or difficulties understanding) is signified by learners, and in which spaces?

	followed up by email/Skype/ through the VLE. Data from these follow up research conversations will be used in the research with participants' consent.		
After a synchronous session, towards the end of the course	On-line focus group with teacher and small number of learners (8-12) following synchronous session. The focus group will involve participants being prompted visually (e.g. sharing screen shots) to recall particular moments from the session. Participants will be asked to reflect on the challenges and issues that arose, and discuss how these were navigated. The focus group will take place online and be recorded with participants' consent.	Teacher and learners	<ul style="list-style-type: none"> • Reflection on this synchronous session <ul style="list-style-type: none"> ○ Learning: What was challenging and why? ○ Teaching: What was challenging and why? ○ Teachers/ learners: what strategies were you using? Were these new? • Pick out a couple of interesting segments <ul style="list-style-type: none"> ○ What were teacher/learners thinking here? And now? • Any other issues about the course/ teaching ASRM online researchers should think about

9. Who are the research participants?

Research participants will be those involved in the teaching and learning of advanced social research methods courses: teachers and learners. In some cases teachers may have been involved in the development of the online course however in other cases they may not. Research participants may also be those with responsibility for the course design, who may or may not be involved in teaching on the current course.

10. If you are going to analyse secondary data, from where are you obtaining it?

Secondary data will come from participating institutions who give their consent to my being given metadata and learning analytics relating to the online advanced methods course selected as a case study site. These metadata may contain information on things like when pages are accessed/ documents downloaded or upload, the number of page hits, click through and bounce rates, the number of times a document is downloaded/ a link clicked on, and drop off/ break off rates. I am classing these data as secondary, as it is likely that they will have been used by teachers, course leaders and others within the organisation to assess and evaluate aspects of the course and learners engagement in it.

11. If you are collecting primary data, how will you identify and approach the participants to recruit them to your study?

Please upload a copy of the information sheet if you are using one – or if you are not using one please explain why.

Advanced social research methods courses will be identified through hand searching course listings (e.g. the NCRM training database), web searchers and through calls on social media/ the NCRM Pedagogy of Methodological Learning web pages for people to contact me if they are involved in an online advanced social research methods course.

My research is concerned with teaching and learning in an online environment, where communication between course administrator, learners and teachers takes place through digital modes such as email, Skype and the course VLE. My communication and interactions with learners and teachers will also use these modes. The exact arrangements for how consent is obtained will be tailored to the requirements of each case study site. However I envisage the following steps.

Email named course contact (from published course details) to introduce myself and the study, to ascertain in principle if it might be possible to use the course as one of my case study sites. I would ask the named contact to forward my email to the appropriate person (or the named course leader if this information is available) as appropriate (draft email Course Leader Initial Contact v01 12/04/2017 attached).

Further dialogue (by email, Skype and phone) with the course leader would provide the opportunity to give more information about the research and what it entails, answer initial questions, and to explore what institutional permissions (if any) may be required. Topics for discussion will include my access to the VLE to 'observe' the course, access to VLE course metadata and learning analytics, and practical arrangements around how and when learners will be contacted about the study and obtaining their consent. For example, can consent be collected as part of the course registration process? If the conclusion of these discussions is that it would be possible to use the course as a case study site,

institutional consent would be formally obtained. The course leader may be able to provide this, or I will obtain consent from an appropriate person, identified with the help of the course leader. The appropriate 'institutional representative' would be provided with the Case Study Institution Information leaflet (v01 12/04/17) and Consent form_case study institution (v01 12/4/2017) to read, sign and return to me via email. I would provide them with my contact details (in the covering email and information sheet) so that if they have any questions or concerns they can raise these with me.

In discussions with the course leader I will identify who teaches the course. I would also find out how many learners are likely to enrol on the course and discuss options for how best to make contact with teachers and learners to inform them about the research and seek their consent to take part. I would agree with the course leader whether I can make contact with teachers and learners' directly or whether initial communication about the study should go via them and or the course administrator. If communication goes via the course leader/ administrator then I would provide them with the participant information sheets, consent forms and text for the introductory emails. Draft introductory emails to teachers and learners are attached (v01, 12/04/2017). It is most likely that the course administrator will contact learners on my behalf, but I will be guided by the course leader's preferences. All learners and teachers will be informed about the research and my observing the course through the VLE before the course commences, and will be asked for their consent to use their data in my research. They will be asked to provide written consent to opt in to specific data collection episodes, i.e. semi-structured interview, research conversations, focus group. Copies of the course leader, teacher and learner information sheets are attached (v01 dated 12/04/2017),

Advanced social research methods teachers who are not part of my case study sites will be invited to take part in my research by email – email_Online ASRM teacher (v01 dated 12/04/2017) attached. They will sent an information leaflet (Online ASRM teachers Participant information v01, 12/4/2017) attached.

12. Will participants be taking part in your study without their knowledge and consent at the time (e.g. covert observation of people)? If yes, please explain why this is necessary.

No, participants will be fully informed about the research and will be able to opt out of my being able to use observational data on their involvement in the course in my research, prior to the start of the course.

13. If you answered 'no' to question 12, how will you obtain the consent of participants?

Please upload a copy of the consent form if you are using one – or if you are not using one please explain why.

For the case study sites

The course leader, others involved in teaching the course and all learners will be emailed about the study. They will be provided with a participant information sheet and consent form (Consent Form as attachments to the email, which they will be asked to read, sign and return to me. The information sheet provides my contact details (email and telephone) so that if they have any queries or questions about the research, or have any concerns they can contact me directly.

The information sheet will explain that I will be observing the course: I will have access to the course VLE and as such will be able to see all posts and observe learner and learner-teacher interactions. If they do not want me to use their data in my research they will be asked to indicate this on the consent form.

The information sheet outlines the purpose of my research and makes explicit that the use of observational data will be for the purposes of this research.

The information sheet will also set out what taking part in the research entails and written consent to participation in semi-structured interviews, research conversations and focus groups will be sought. At each of these data collection episodes I will remind participants about the aims of the research, what participation in this part of the research entails, what will happen to the data and check that they are still happy to participate. I will make clear that participation is voluntary and that if they choose not to participate in this element there will be no negative consequences to them. This will be set out in writing/ or said as part of the introduction in an audio/ audio visual interaction.

Copies of proposed consent forms for case study course leaders, teachers and learners (v01 12/04/17) are attached to this application.

ASRM online teachers (not part of case study sites)

Advanced social research methods teachers who are not part of my case study sites will be invited to take part in my research by email. They will sent the consent form (Consent form_Online ASRM teacher v01 12/04/2017) attached by email along with the information sheet. The information sheet will set out what taking part in the research entails and written consent to participate in semi-structured interviews will be sought. I will make clear that participation is voluntary and that the interview would take place at a time and place of their choosing. The interview would be audio recorded, with participant consent.

14. Is there any reason to believe participants may not be able to give full informed consent? If yes, what steps do you propose to take to safeguard their interests?

No. Participants will be adults – course leaders, teachers and learners, with high levels of literacy in English (a course prerequisite) and cognitive function. Materials will be written in plain English, with information organised clearly. My contact details (email and telephone) will be provided on the information sheet, and participants will be encouraged to contact me at any time if they have any questions, queries or concerns, or require further information.

15. If participants are under the responsibility or care of others (such as parents/carers, teachers or medical staff) what plans do you have to obtain permission to approach the participants to take part in the study?

N/A

16. Describe what participation in your study will involve for study participants. Please attach copies of any questionnaires and/or interview schedules and/or observation topic list to be used

Participation in the cases studies will likely involve:

- For the course leader and teacher(s): semi-structured interviews before the course starts lasting about an hour. The interviews may take place face-to-face or by Skype and be audio recorded, with participants' consent. Draft interview guides are attached [Interview Schedule Case Study Course Leader v01 dated 12/04/2007 and Interview Schedule Case Study Teacher v01 12/04/2017];
- For the teachers and learners: observation (online) of teacher-learner and learner-learner interaction in synchronous and asynchronous elements of the course using the attached observation notes sheet [Fieldnote_template example v01 12/04/2017]. Observations would involve:
 - Viewing teacher and learners' course activity and communications through the course VLE and having access to learning analytics on course participation;
 - looking 'over the shoulder' of teacher and learners as they interact with particular online course activities and materials, using web-based screen capture software. This software does not need to be downloaded and is device and operating system agnostic;
 - 'listening in' to course discussions on Twitter or on a course Facebook page and using these posts in our analysis, with consent where these are used;
- For learners and teachers: research conversations during the course to follow up on observations. Conversations would be recorded and likely take place via Skype and or email. These would be strategically targeted to minimise burden on teachers and learners and would vary in length. They could entail following up on an observed action or post to explore, for example, to gain deep insight into its purpose and significance, or to explore learners' understanding of an activity or concept or teachers' interpretation of learners' behaviour;
- For teachers and a small number of learners (between 8-12): an online focus group immediately following a synchronous session, most likely toward the end of the course. The focus group would involve the group reflecting on the session and discussing aspects of teaching and learning using visual prompts (most likely screen shots or short video clips). The focus group guide is attached [Focus group guide v01 12/04/2017]. The group discussion would take no more than one hour and would be audio recorded with participants consent. Focus group participants (teachers and learners) may be given a digital £10 gift voucher as a token of appreciation for their participation. However this will depend on how international course participants, as a pounds sterling gift voucher may not be appropriate. This will be discussed with the course leader early on.

In addition a number of semi-structured interviews will be conducted with teachers of online advanced social research methods courses that are not case study sites. The interviews would take place either face to face or via Skype and last no more than one hour. The interviewer guide is attached [Interview guide Course Leader Teacher Individual v01 12/04/2017]. Interviews would be audio recorded, with participants' consent.

17. How will you make it clear to participants that they may withdraw consent to participate at any point during the research without penalty?

The participant information sheet for course leaders, teachers and learners includes the following:

'What happens if you change your mind?

You have the right to withdraw from the research at any time up until the analysis is complete without any risks to your continued participation in the course. Please contact me [email, telephone number] if you wish to withdraw. You do not have to provide a reason."

Participants will be reminded of this during the research, for example as part of the introduction to semi-structured interviews and focus groups.

- 18. Detail any possible distress, discomfort, inconvenience or other adverse effects the participants may experience, including after the study, and you will deal with this.**

Learners and teachers may feel slightly uncomfortable and potentially vulnerable being observed during the course, as they may feel they are being assessed. I will limit this as much as possible by stressing in the participant information sheets that the research is not concerned with evaluating teaching, learners or the course. I will stress that I want to work with learners and teachers to create knowledge and explore challenges – and therefore that they can influence what happens and what is produced. This will be reiterated during data collection – as part of the introduction to the semi-structured interviews with course leaders and teachers, the focus group and in research conversations.

- 19. How will you maintain participant anonymity and confidentiality in collecting, analysing and writing up your data?**

All data (from the case studies and semi structured interviews with ASRM online teachers) will be anonymised by giving participants a pseudonym. The participant information sheets tell participants that in reporting on the findings of this research, what they say may be quoted anonymously. The identity of participants will be protected at all times. Particular care will be taken in writing about the course so as not to provide details that might identify it. I will send course leaders and teachers draft course descriptions ahead of submission with the aim of agreeing these and ensuring they are happy that the risk of disclosure is low.

- 20. How will you store your data securely during and after the study?**

The University of Southampton has a Research Data Management Policy, including for data retention. The Policy can be consulted at <http://www.calendar.soton.ac.uk/sectionIV/research-data-management.html>

Participants' data will be stored securely in a password protected, restricted area of the University of Southampton computer network. Only named researchers working on this research project will have access to the data and the data will only be used for the purposes of the pedagogy of methodological learning project. Following the study the data will be stored securely for a specified period following the university policy on data storage.

- 21. Describe any plans you have for feeding back the findings of the study to participants.**

I will let participants know about the Pedagogy of Methodological Learning website, which contains outputs from the wider research project and is where outputs from my research will be posted. These are likely to include resources for teaching (advanced) social research methods in online environments based on my research, illustrating innovative and creative use of digital technologies in teaching. If participants agree to my keeping their email addresses then I would send them a summary of research findings.

22. What are the main ethical issues raised by your research and how do you intend to manage these?

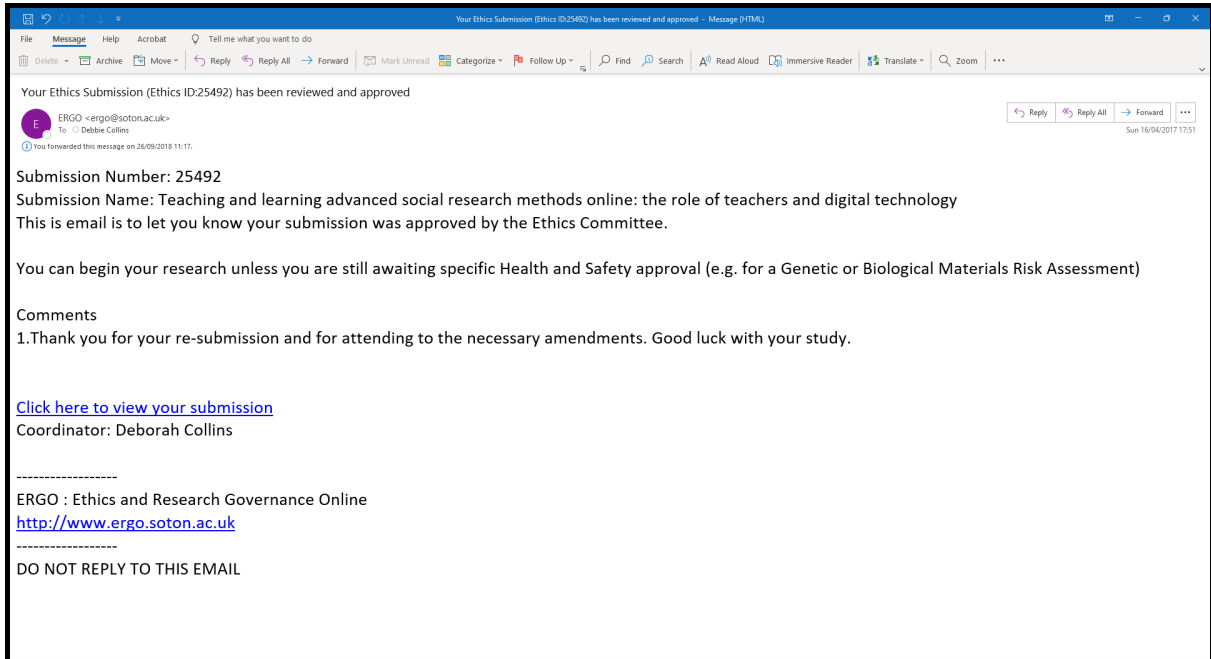
The subject matter of my research is not sensitive and I will not be exploring details of individuals' lives. The main ethical issues relate to the medium through which much of my research will take place: that of online space. Initial communication with learners and teachers will be by email. I will not have the advantage of visual cues of participant difficulties in understanding the participant information sheet and consent form as communication will largely take place via email. I will take care to ensure my written materials (participant information sheets and consent forms) are as clear and straightforward as possible. I will stress that if participants have any queries or concerns they can contact me and I will provide my contact details (phone and email). I will also reiterate key points (that my research is not evaluative, taking part is voluntary and independent of participation in the course, consent can be withdrawn at any stage up until analysis is complete without consequences, that participation is in confidence and that data will be anonymised and stored securely).

To be able to observe the online course I will need to be given access to the course VLE and be able to see what the teacher(s) and learners do during the course. This is something that I will discuss with the course lead and relevant people at the course host institution and agree a protocol. The wording of participant information sheets and consent forms in relation to observational will be amended to reflect institutional requirements. Although I will ask learners for their consent to collect observational data and to use these data in my analysis, I will still have sight of what they post, download etc. I will ensure that learners are aware of this and stress that I will not use this information in my research.

23. Please outline any other information you feel may be relevant to this submission.

I am an experienced social researcher, with over two decades of experience in undertaking qualitative and survey research. I have undertaken research with vulnerable groups in online settings and will be bringing this experience to bear in my doctoral research.

A.2 Confirmation of ethical approval



Appendix B Recruitment documents

An email invitation, participant information leaflet and consent form were sent to case study' course leads, other teachers involved in the course, students and others involved in the course. A version of these materials were also sent to the online SRM teachers I spoke with. Examples of these materials are included in this Appendix.

B.1 Initial Email example

Draft Initial Email to Course Leaders

Dear ,

I am a PhD student at the ESRC's National Centre for Research Methods at the University of Southampton currently researching the teaching and learning of advanced social research methods online. My research forms part of a wider ESRC project – the Pedagogy of Methodological Learning (www.pedagogy.ncrm.ac.uk) – which is exploring how skills in advanced, innovative or specialised social research methods are developed within the UK social science community.

I would very much like to feature your forthcoming [COURSE NAME] on [DATES] as one of my in-depth case studies. The aim of my research is not to evaluate courses or teachers but rather to engage with teachers, learners and researchers to illuminate the challenges, demands and processes involved in teaching and learning advanced research methods in an online environment. Becoming involved in the study as a case study would involve:

- An interview with yourself as course leader and with any other course teachers (if applicable) at a convenient time in advance of the training, either face to face or via Skype
- Access to the course VLE/ hosting platform so that I can observe teaching and learning, and to course metadata, so for example I can see what material is uploaded or downloaded. These observations will inform research conversations with teachers and learners. Such conversations would likely take place via email or Skype and be carefully timed so as to minimise any disruption and burden on participants.
- Unobtrusive screen capture and over-the-shoulder recording of a synchronous session, to provide short video clips and images that can be used as the basis of a discussion with teachers and learners to explore experiences of teaching and learning processes involved. This focus group discussion will provide an informal opportunity for both teachers and learners to engage in dialogue regarding the challenges, approaches and outcomes involved in online research methods pedagogy. The recording would not be disseminated beyond the research team and data from all contributions, whether during the synchronous session or in the follow-up discussion, will be anonymised.

If your course can be used as a case study then I would be grateful of your help with:

- gaining access to the course VLE/ platform and course metadata;
- making contact with teachers and learners, to inform them about my research and seeking their consent.

Please let me know whether you are interested or would like to know more by reply to this email. Alternatively, feel free to contact me if you have any questions regarding the research. I am happy to have a chat about this on the phone if that would be useful; my phone number is 07XXX XXXX.

Kind regards,

Case Study

Version 1. 12.04.17 Ethics no. 25492

Southampton Education School | National Centre for Research Methods
Faculty of Social and Human Sciences Graduate School, Highfield Campus, University of Southampton, Southampton SO17 1BJ
United Kingdom

Draft Invitation Email to Teachers

Dear ,

I am contacting you as I understand that you will be teaching on [COURSE NAME] [COURSE DATE]. I am writing to introduce myself and my research and to explore whether you would be willing to take part. I have already been in contact with [NAME OF COURSE LEADER] and they [have agreed to forward this email to you/ given your contact details so that I can get in touch].

I am a PhD student at the ESRC's National Centre for Research Methods at the University of Southampton currently researching the teaching and learning of advanced social research methods online. My research forms part of a wider ESRC project – the Pedagogy of Methodological Learning (www.pedagogy.ncrm.ac.uk) – which is exploring how skills in advanced, innovative or specialised social research methods are developed within the UK social science community. The aim of my research is not to evaluate courses or teachers but rather to engage with teachers, learners and researchers to illuminate the challenges, demands and processes involved in teaching and learning advanced research methods in an online environment.

The research involves semi structured interviews with teachers and course leaders and observations of synchronous and asynchronous teaching and learning. These observations and field notes will be augmented with informal research conversations during the course with teachers and learners. A focus group discussion with teachers and learners will take place after a synchronous session towards the end of the course, and will be based on 'visual stimulated recall' of selected episodes from the session. This visual material will be collected using unobtrusive screen capture and video recording of the session, and will provide short video clips and screen shots that can be used as the basis of a discussion regarding participants' experiences of the teaching and learning processes involved in the online session. This focus group will take place online. Further information about this research is contained in the attached Information Leaflet.

Observation will not cause any disruption to the training. The field notes and screen capture/ video recordings will be used only for the purposes of stimulating a discussion amongst you and some of the learners and for later analysis by myself and other members of the research team – Professor Melanie Nind and Dr Sarah Lewthwaite.

Up to twelve learners will be invited to participate in a focus group immediately after a synchronous session (towards the end of the course). **I very much hope that you will be able to remain after the session – for approximately one hour – in order to take part in this discussion**, together with learners and myself. As an online teacher of advanced methods your contribution to this discussion will be of great value to my research. I hope that these insights will make a new and valuable contribution to a little-examined area of teaching and learning in higher education. I very much hope that you would be willing to take part.

Case Study Teachers

Version 1. 12.04.17 Ethics no. 25492

Southampton Education School | National Centre for Research Methods
Faculty of Social and Human Sciences Graduate [School, Highfield](#) Campus, University of Southampton, Southampton SO17 1BJ
United Kingdom

<http://pedagogy.ncrm.ac.uk/>



Please let me know whether you are interested and/or able to take part by reply to this email. Alternatively, feel free to contact me if you have any questions regarding the research. We will not involve you without your written consent.

I am happy to have a chat about this on the phone if that would be useful; my phone number is 07XXX XXXXX.

Kind regards,

B.2 Case Study Research Information Sheet example

Research Information Sheet (Course leader)

Study Title: Teaching and learning social science research methods [online](#)

Researcher: Debbie Collins

Ethics number: 25492

Please read this information carefully before deciding to take part in this research and keep it for future reference. If you are happy to participate you will be asked to sign a consent form.

What is the research about?

This research is exploring the teaching and learning of social science research methods online, an area where there has been little research to-date. The aim is not to evaluate courses or teachers but rather to engage with teachers, [learners](#) and researchers to illuminate the challenges, demands and processes involved in teaching and learning social research methods in an online environment. Insights from the study will inform understanding and practice in the teaching of research methods within the UK academy and beyond. The research takes the form of case study.

This doctoral research forms part of a wider ESRC-funded project looking at the pedagogy of methodological learning (see <http://pedagogy.ncrm.ac.uk/>).

Why has my course been chosen?

Your course has been chosen because it is an online course in advanced social research methods - [Name of Institution] [Name of course]. We would like to use this course as one of our case studies.

What does the research entail?

The research would involve participating in a semi-structured interview. This interview would take place before the course starts and is anticipated to take about an hour. The interview may take place face-to-face or by Skype and be audio recorded with your consent.

The interview will be transcribed by a confidential service for the purposes of analysis.

Are there any benefits in my taking part?

This research will contribute to knowledge and provide resources for teachers who want to exploit digital technologies in their teaching of advanced social research methods. The research will also provide opportunities for you to reflect on and discuss your teaching in an online course [environment](#), and explore the features of the online course that supported learning.

Are there any risks involved?

No, taking part in this research will not affect your or your students' participation in the course.

Will my participation be confidential?

Your data will be stored securely in a password protected, restricted area of the University of Southampton computer network and treated as personal under the 1998 Data Protection Act. Only my supervisors and I will have access to the data and the data will only be used for the purposes of the Pedagogy of Methodological Learning project.

Your data will be anonymised. In reporting on the findings of this research, what you say may be quoted anonymously. With your written consent, anonymised transcripts may be offered to the UK Data Archive. Your identity will be protected at all times.

What happens if you change your mind?

You have the right to withdraw from the research at any time up until the analysis is complete. If you wish to withdraw consent, please email me, Debbie Collins at dlc2g15@soton.ac.uk.

What happens if something goes wrong?

If you have any cause for concern or complaint about this research please contact the University of Southampton Research Governance Manager: telephone number 02380 595058, email rgoinfo@soton.ac.uk.

Where can I get more information?

If you want more information about this research, or have further questions or queries please don't hesitate to contact me, Debbie Collins by telephone: 07947 555214 - or email dlc2g15@soton.ac.uk. For more information on the ESRC Pedagogy of Methodological Learning project, of which this research forms a part see <http://pedagogy.ncrm.ac.uk/>

B.3 Consent form example



<http://pedagogy.ncrm.ac.uk/>



CONSENT FORM (*Learners*)

Study title: Teaching and learning advanced social research methods online

Researcher name: Debbie Collins

Study reference: ASRMOL/CS1

Ethics reference: 25492

Please initial the box(es) if you agree with the statement(s):

	<i>Initial if agree</i>
I have read and understood the Research Information Sheet for Learners [version 1.0 dated 12/04/17] and have had the opportunity to ask questions about the study.	<input type="checkbox"/>
I agree to take part in this research project. Taking part will involve participating in research conversations with the researchers.	<input type="checkbox"/>
I am willing to take part in a focus group	<input type="checkbox"/>
I agree to the audio recording of research conversations and the focus group and for my data being used for the purposes of this research study	<input type="checkbox"/>
I agree to the research team being able use data on my use of and activity in the [COURSE NAME] VLE for this research project	<input type="checkbox"/>
I understand my participation is voluntary and I may withdraw at any time up until the analysis is complete without my legal rights being affected	<input type="checkbox"/>
I understand that anonymised transcripts from this research may be offered to the UK Data Archive	<input type="checkbox"/>

Your Name

Your Signature

Date.....

Appendix C Observations [extracts]

C.1 Case study 1 Observations and reflections on the course Moodle pages - extract

Time/Date	Observation/Record (Include screenshot)	Reflection (including whether a follow up research conversation would be helpful)
29/09/17	<p>Started the course today. I couldn't get the course to load in IE. Luckily my partner, who is a software developer suggested I try opening it up in Chrome and that worked. It has taken me an hour so far to get in.</p> <p>The landing page is busy: there is a lot of information, and it took me a while to work out how to load the first module.</p>	<p>In the Welcome section, by the end of the course list:</p> <p>2 Survey methods for systematically extracting quantitative data from text for social scientific purposes.</p> <p>What does 'survey methods' mean?</p> <p>'This course contains a lot of guided activities' – what I didn't realise until I had got to the 4th session of module 1 was that these activities are in R and that I need to load that onto my computer. I also discover at this stage that the course assumes some knowledge of R. I wonder whether other participants knew this before signing up.</p>
29/09/17	<p>Each module is divided into sessions, listed one under another. There is nothing to stop you doing them in any order: they are not numbered and there is no instruction telling you to work down the list (this is assumed). Cultural bias?</p> <p>Each session follows the same format:</p> <p>Video</p> <p>Quick Question</p> <p>Summary of what is said in the video, broken down into subheadings, with some additional text revealed on clicking on arrows/ +</p> <p>Text is broken up into boxes and expandable text is placed in purple boxes with white text.</p> <p>Knowledge check – several (between 1-3) quiz Qs check understanding of key terms/ theoretical concepts/ analysis software syntax.</p> <p>Guided activity</p>	<p>The format feels instructionist – is this a deliberate choice? Who made this decision: Tom or Will?</p> <p>There is no interaction with the teacher or other course participants: everything is done asynchronously – who made this decision? Why?</p> <p>I found the first few chunks of module 1 rather dull. I wanted to discuss some of the ideas (e.g., what are the benefits and limitations of the method).</p> <p>I wanted to get a sense of what the output from [analysis method] and start putting the theory into practice but there was no guided activity until the last session (and that was loading the R plug-in</p> <p>For each session there is a progress bar that shows me how far I have got. If I open the page for a session the bar shows 30%. I wonder how that percentage is calculated. It looks like it is some combination of the elements of the page I interact with and</p>

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Time/ Date	Observation/Record (Include screenshot)	Reflection (including whether a follow up research conversation would be helpful)
		whether I get the quiz questions right, but it's not clear.
29/09/17	At session 4 of module 1, I am trying to work out how to load R onto my computer when my computer crashes. I take it into Uni on 2/10 and it is taken away to be rebuilt. I get it back on the 6/10. I get R studio loaded on it. Its 5pm when I leave ISolutions with a working laptop and all the software I need.	
9/10/17	The version of R Studio I had installed doesn't appear to be the right version as when I try to load [plug in] I get a message saying that [plug in] was written using R 3.4.2. What does this mean? I spend several hours trying to work out what the problem is, checking the instructions provided at session 4 of module 1. I try Googling the problem, but I am overwhelmed by the volume of information I am presented with. I want to talk to someone but there isn't anyone. I am frustrated. I try to look up what version of R studio I have. It looks right – the course says you need v3.4.1, which I have but it won't load [plug in]. I am losing time. I take a break. I decide to download R3.4.2. It's not the studio version so no nice user interface. I type in the commands to download [plug in] and it installs! I can now get back to the course again over a week after I first signed in. This is hard going but I feel pleased that I overcame the problems and showed myself that I could get it to work.	Did other students have any problems with loading the software? Who did they turn to for help?
	Finish module 1	I complete module 1 but it doesn't say I have finished it. This is frustrating. Students get a message saying that some students have queried why this is happening. Module one – estimated time to complete is 1 hour. It takes me probably 2.5-3 hrs.
	Course forum	This was hard to find. I found it via the Welcome page, but it is buried away, and forum posts are not visible. I don't feel part of a community of learners. I feel alone. It turns out you only get to see what others have posted once you've completed exercises in module 2 and posted your answers.

Time/ Date	Observation/Record (Include screenshot)	Reflection (including whether a follow up research conversation would be helpful)
		Not many students have used the forum so far, I wonder why?

C.2 Case study 2: Extract from my observations of a synchronous SPSS Skype session

Session is led by teacher, Peter. It is a session for students thinking of using quantitative methods for their research project. My notes are based on a recording of the synchronous session.

Five students appear visible on the Skype call with the tutor (Peter) at the start of the session.

Peter shares his screen with students and says he may use the whiteboard from time to time. If students can't see it let him know. The whiteboard is on the wall of the classroom Peter is in.

Peter tell students what to expect. The morning session will run from 10-12ish, Peter will introduce students to SPSS and talk about how to get their datasets ready. In the afternoon they will look at analysis. He acknowledges that students may not know what kind of analysis they want to do yet.

Peter checks all students can hear him. He suggests to students that they turn their camera on if they want to ask a question. All students have their cameras off.

Another student has joined and there are now 6 students on the call with Peter.

Peter says the session will be hands on. Students will go away with enough knowledge to get started and usually will come back to him with further questions and queries as they start to play around with their data. He will take a look and see "if it is all good or needs some amendments".

Peter to students: "On my screen you see the SPSS data file, yes?" Waits for students to verbally say they do.

There is a pause before someone says yes. Then other voices are heard confirming.

Visible on the Skype call is Peter's screen showing the first screen one sees when the analysis package SPSS opens. At the bottom Peter is visible, along with the Skype icons for the 6 students.

Peter starts with a question. "Imagine you have asked somehow satisfied with life they are, using 1-7 scale with 1 not at all and 7 extremely satisfied. How would you put this into SPSS?"

Appendix C

There is silence. He asks again. Andy answers but his sound quality is poor. He asks another student. At this point students report difficulties with hearing other students, the lecturer, and with losing their Skype connection. One student says she can only see one of the other students, another can only see Peter, not his screen. Peter tries to work out what the problem is and makes some suggestions of things the two students who can't see his screen could do. However, one says she can't even see the option he describes. After perhaps a minute one student says Peter should carry on and she will figure it out. Peter stresses that being able to see his screen is important and it's problematic if students can't see it. He checks whether the other students can see it and 4 students confirm they can. He carries on.

Peter shows students how to enter a survey question as a variable in SPSS. He walks students through entering the variable name, response option labels etc on the data entry sheet in SPSS. He does this by entering information into the data entry sheet and talking aloud as he does so.

As he goes, he provides tips/ his experience – e.g., when naming variables, it's better to use a label that describes what the question is asking about rather than Q1, Q2 etc, as this is more useful. Also, if the survey questionnaire changes e.g., a new question is added between Q1 and Q2, this change won't affect the SPSS data entry.

He highlights the most common variable types. He gives examples of different types of data based on his own research and survey questions he has asked.

He stresses the importance of saving regularly and suggests an interval. He demonstrates how to do it, but the save takes a long time and he expresses concern about it (maybe because Skype is running in the background, head in hands)

A student (one of those who couldn't see Peter's screen earlier) asks a question about why the question name is written the way it is (with a _ between each word). She suggests a reason, framed as a question. "Is that because...?" Peter confirms that she is right and says SPSS doesn't like a space left at the end of the name either.

Peter checks students are still with him.

He asks students for a second data item: one suggests Age and Peter adds this to the data entry sheet. He is still sharing his screen. He then enters a variable called Gender.

He says that if students use SurveyMonkey (an online survey platform) they can import data, but they will need to check how SPSS codes certain variables.

Peter to students: "Does that all make sense?" Students confirm verbally.

C.3 Case study 2: Extract from discussion forum

Post	Course week	Who posted	Where did they post	Intended recipients
<p>SEP18-MAY19:2 » Forums » Announcements » Qualitative research data collection methodologies - Slides</p> <p>Qualitative research data collection methodologies - Slides</p> <p>by Thea - Monday, 12 November 2018, 08:54</p> <p>Seminar 4 - 7 November Thea slides.pptx</p> <p>Dear students,</p> <p>During last week's tutorial, online student 1 and I talked about the difference between quantitative and qualitative research, and what a meaningful qualitative research contribution looks like in the kinds of fields in which [discipline] researchers tend to do research. For a number of reasons, for the online students the session that discusses qualitative data collection methodologies is relatively late in the semester, whereas the students on the [hybrid course] have already had a seminar on this. I have therefore uploaded the slides that I used for the [hybrid] students with this message. Although these slides are without audio, they will hopefully be able to point you in the right direction. Each methodology is also extensively discussed in [reference to course textbook].</p> <p>Best</p>	8	Thea	Announcement	Online students
<p>Forums>Learning > Discussion OT perspectives complete by [date] Induction - modernist/symbolic perspective 12/11/18 - online student 2</p>	8	Online student 2	Learning forum	Thea/Peter (visible to all online students)
<p>Forums>Learning > Discussion OT perspectives complete by 8/10 Induction - modernist/symbolic perspective 12/11/18 - online student 2</p>	8	Online student 2	Learning forum	Paul (visible to all online students)
<p>SEP18-MAY19:2 » Forums » Discussion what did you notice - complete by [date]</p> <p>Re: Discussion what did you notice - Paul</p> <p>by Thea- Wednesday, 14 November 2018, 09:16</p>	8	Thea	Learning forum	Paul (but visible to all online students)

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Post	Course week	Who posted	Where did they post	Intended recipients
<p>Nice bit of writing, Paul, and good referencing (for your proposal do remember to put your refs in alphabetical order at the end, although I am sure you know this!). I like how you link your choice of article to your own experiences at [location]. And I agree with your observations that it is both 'interpretivist' and postmodern. I also like your final observation with regard as to how a positivist would assess the validity of the research. I suppose what makes it truly postmodern is that the three categories of believers, straddlers and cynics are better thought of as 'subject positions', i.e. they are not individuals but represent positions in discourses that individuals can take up. It is a very particular way of thinking about and organising data.</p>				
<p>SEP18-MAY19:2 » Forums » Announcements » [name] conference conference by Thea - Wednesday, 14 November 2018, 11:30 Hi all, This academic year's conference organised by the [name of organisation] will be in [name of city] in [month]. [Name of discipline] provides a social sciences perspective of the study of []. Research done within this discipline tends to be done from an interpretivist, qualitative perspective. I am pasting the link for the call for papers below because included on that page are the many strands under which one can submit a paper. Each of the strands includes a description of the topic (just click on the link). I thought you might find it interesting to see and consider the many different perspectives that exist - it might even give you ideas for the framing of your own project! https://www.[hyperlink] Best wishes,</p>	8	Thea	Announcement	Online students

C.4 Case Study 2: Observations on online tutorial

Date: 15/2/19 17:00

Skype one-to-one tutorial between Thea and Andy

Purpose – Mock qualitative interview [contributes to student's assessment]

Length of time - 1 hour

Skype with video enabled. I observe via audio, my video is turned off in an attempt to minimise the impact of me being there.

Thea starts by asking Andy what the plan is for today. The plan is to do the 1-2-1 interview. Thea says she will make notes and give feedback to Andy after the interview. Thea plays the role of the research participant. Andy is the interviewer, using an interview guide he has developed around the theme students have been asked to use for the exercise. He mentions he has revised the interview guide he developed and used at the hybrid face-to-face session 2 weeks ago. Thea says he should interview her for around 20 minutes and do a full introduction.

The role play lasts around 20 minutes. Thea reminds Andy of time and the need to wrap up.

During the role play there is shared laughter. Andy and Thea know each other and seem comfortable, although later Andy states that he does not like Skype. Towards the end of the role play Andy and Thea share a few jokes – a sign perhaps that Andy is relaxing as he knows the end is near!

Andy is clearly nervous as he starts the interview – he reads from his interview guide. Thea does not appear to notice or acknowledge this.

Andy takes the role play seriously. He goes through the full introduction. Thea adopts a character, having checked with Andy before the start, who she should be.

Thea makes notes on the questions Andy asks her and how Andy introduced and ends the interview, which she refers to when giving feedback. She lets Andy know that this is what she is going to do.

Thea gives Andy feedback. She starts by asking Andy to reflect on how the interview felt from his perspective. She prompts him to encourage further reflection.

She then offers her own reflections. She links these to what Andy will be doing in his dissertation to draw out the learning for Andy's own research project.

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Thea provides detailed feedback on Andy's introduction and models the interview introduction to illustrate what a good one looks like.

Thea analyses Andy's questioning approach. She highlights difficult questions and suggests ways to get at this information using different questioning tactics. Thea also provides feedback to Andy on how he ended the interview and models an approach.

There are some limitations to the role play. Thea acknowledges that her answers were "rubbish". She says towards the end that she might change the example for next year because it doesn't get people to think about quality in qualitative interviewing.

Andy makes notes throughout the tutorial. He reflects on his learning from the session. He doesn't articulate this – he is clearly processing what has gone on in the tutorial and the learning from it.

Andy says he needs to talk to Thea about his project. The session ends with Thea, who is also Andy's dissertation supervisor, offering Andy further supervision via Skype or place-based.

I follow up with Andy immediately after this tutorial by email.

Me 15/2/19 18:03

Thanks for letting me sit in on your tutorial session with Thea. I'd be interested in your reflections on how you found it, notwithstanding your dislike of Skype. I'd be interested in your reflections on what you felt you got out of the face-to-face [hybrid] session 2 weeks ago compared with what you got out of this session.

Andy 15/2/19 19:26

Hi Debbie,

I'm happy for you to listen in.

I enjoyed the interview two weeks ago in class, I'm a bit frustrated as I had put significantly more effort into preparing ahead of the interview today, at least it will give me plenty of things to reflect on in my report.

In class, I was role playing a part in an organisation that I did not know, following a script that didn't really address the research objectives we had been given. I think most of us followed the interview guide we had come up with and the research participants co-operated the best they could. I received some useful feedback about my use of language.

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I feel the feedback and advice I got from Thea today will help me more than the role play I took part in with my colleagues on the blended course, however I now feel totally exhausted and a bit negative. I felt the character Thea constructed and her responses would have been totally implausible in [context]. It was difficult to get out of the affective domain after what felt like 20 mins being sat in a dentist's chair.

I am yet to speak to Peter about my SurveyMonkey questionnaire.

Kind regards

Andy

Appendix D Semi-structured interview guides

There were versions of the interview guides for case study course leaders, other teacher and other staff involved in the course, and a focus group topic guide for use with a teacher and learners. In addition, there was a version of the interview guide for the online SRM teachers. This Appendix includes examples of these.

D.1 Case study course leader interview guide



Course Leader Interview Schedule (Case Study)

Introduce self and study

1. Background

Interviewee

- Overview of involvement in the teaching research methods
 - Methods taught
 - Teaching approaches (e.g. flip, team teaching) and modes used (e.g. blended, online)
- How came to be involved in this ASRM course
 - Role in course- development, teaching

Institutional landscape

- How course fits into wider teaching at the institution/ department
- Use of digital technology in teaching (and ASRM specifically)
 - Institutional / departmental landscape
 - [How] is digital technology being used in ASRM teaching across the department

The course

- How long course has been running
- Choice of online course platform/VLE
- Additional technologies used
- Frequency of course
- Duration of course/ overview of structure
- Number of learners on course
- Characteristics of learners
- Number of staff involved in delivering it and their roles

2. Course origins

- How course came into being
- Why online
- Influence of any particular learning theory/personal theory/rationale with development of this course

3. Course pedagogy and design

- Approach(es) taken to teaching and learning ASRM
 - [How] have these changed over the life of the course



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- Influence/role of digital technology on course design/ pedagogy
 - Content
 - Strategies, Activities, tasks
 - Communication with and between learners
- How does the course support learning of ASRM

Reflections on

- Challenges of teaching ASRM online
- Strategies adopted to address these challenges and what they have achieved
 - Probe: role of digital technology
- Final reflections/ anything else want to say

END INTERVIEW

D.2 Case study visual stimulated recall & reflection focus group guide



Visual stimulated recall & reflection focus group with teachers and learners:

Teaching

Initial discussion

- Challenges in teaching this material/those skills
 - Explore the content challenges and the online challenges
- What guided your approach?
 - Explore role of digital technology
- Did you try anything different/new?
- Did the synchronous online nature of the session influence you? If so, how?

Visual stimulated reflection

- Is there a particular part of the session that you'd like to review and reflect upon?
 - Why have you chosen this?
- What was challenging here?
 - What happened?
- How do you feel about it?

- I found this part of the session interesting... What was your thinking here?
 - What are you thinking now?
- Is that style of teaching typical for you?
 - For all your methods teaching or your online methods teaching?

Learning

Initial discussion

- What was challenging to learn in that session?
 - Explore the content challenges and the online challenges
- What strategies were you using to learn?
- Did you try anything new?

Visual stimulated reflection

- Is there a particular part of the session that you'd like to review and reflect upon?
 - Why have you chosen this?
- What was challenging here?
 - How do you see what happened?
- How do you feel about it?

- I found this part of the session interesting... What was going on here for you?
- What are your reflections on this?

Discussion

Any other issues concerned with teaching and learning advanced social research methods in an online space

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D.3 Online SRM teacher topic guide



Online Advanced Social Research Methods Teacher Interview Guide

Introduce self and study

1. Background

Interviewee

- Overview of involvement in the teaching research methods
 - Methods taught
 - Teaching approaches (e.g. flip, team teaching) and modes used (e.g. blended, online)
- How came to be involved in this ASRM course
 - Role e.g. course development, teaching

Institutional landscape/ context

- How course fits into wider teaching at the institution/ department
- Use of digital technology in teaching (and ASRM specifically)
 - Institutional / departmental landscape
 - [How] is digital technology being used in ASRM teaching across the department

Specific named ASRM course

- How long course has been running
- Choice of online course platform/VLE
- Additional technologies used
- Frequency of course
- Duration of course/ overview of structure
- Number of learners on course
- Characteristics of learners
- Number of staff involved in delivering it and their roles

2. Course origins (Explore what knows of)

- How course came into being
- Why online
- Influence of any particular learning theory/personal theory/rationale with development of this course

3. Course pedagogy and design

- Approach(es) taken to teaching and learning ASRM
 - [How] have these changed over the life of the course



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- How teacher supports learning
 - How uses specific digital technology to support learning
- Probe
 - How motivates/ keeps learners motivated
 - Connects theory to practice
 - Develops critical thinking
 - Spots and deals with learner misunderstandings/ struggling with ideas/concepts
- Communication with learners
 - Purpose(s) of communication and channel(s) used (e.g. VLE, email, Twitter, Facebook)
- Teacher's role in synchronous and asynchronous sessions
 - How uses digital technology

4. Reflections on

- Challenges of teaching ASRM online
 - Explore nature of challenges – e.g. technological, institutional, ASRM content, own technical ability, other
- Strategies adopted to address these challenges
 - Probe: role of digital technology in strategies
 - What have these strategies achieved
- Innovations aware of in teaching ASRM online
 - Probe for details
- Final reflections/ anything else want to say

END INTERVIEW

Appendix E Examples of analytical steps

E.1 Example of annotation of interview transcripts

ASRM teacher interview Iona 15/09/17

339 IONA_ ONLINE SRM TEACHER
340 No, he's accessible to students if they want to contact him about any sort of
341 issue. But of course **when things come up and we have technical problems or**
342 **something like that that's not content related I'll get involved in those issues**
343 **and mediate between students and the administrative wing** and help them
344 navigate. But no, all of the teaching is me at the moment.

Teacher involvement in technical/ administrative issues of online course

345 INT: And from when [REDACTED] designed the course, has it evolved or been
346 tweaked in any way – the content of it or the order in which you cover things,
347 or any aspects of it since you've been involved?

348 IONA_ ONLINE SRM TEACHER
349 We haven't changed the order of things. I think **there's a logical sequence**
350 that he originally put together that makes a lot of sense. **And also, with the**
351 **case studies that is a reasonable thing to keep because each unit has this very**
352 **aligned case studies that do progress in the different stages that a research**
353 **project would progress, from that initial thinking about research to planning**
354 **and writing questions, to design, to implementation, to analysis, to write up. I**
355 did change the readings and we've made a change to the assignments and
356 the structure of that, which we didn't talk about but the assessment. There
357 **has been a formal assignment in the middle of the course and a formal**
358 **assignment at the end that were quite different things.** And we've tweaked it
359 a bit so that **now the middle one is going to be formative** because that's been
360 something that I've been nagging about since the beginning. **Just so students**
361 **can get more feedback on their writing and things like that.** So that's the
362 main big change recently, I think. Most of the standard readings that we have
363 I thought I'd do a bit of **updating on the readings and a bit of focusing on**
364 **what I saw students every term tended to want to focus on that we haven't**

Purpose of case studies in online course: bring to life stages of research project & decision making involved in research design, implementation, analysis and reporting/dissemination

Purpose of online course Assignments

- *Formative assessment*

Changes to the online course – student-centred approach

- *Changing assessment*
- *Updating reading material*

229 Interviewer: And did you get those animations made especially for you or were they things—

230 Katarina: Yes.

231 Interviewer: Yes. Okay.

232 Katarina: Yes. I think the digital [REDACTED] unit, I think they have some money input, but this was I
 233 think the most expensive part of the MOOC to pay the person to do the animations for
 234 us. Then later we used some of the [REDACTED] money I think to do more animations that I
 235 mentioned which are not a part of the MOOC but potentially because they were created
 236 after we did the MOOC, maybe in the second wave of the MOOC we can add them to this
 237 content to make it more, I don't know, exciting for people. I myself, when I do these
 238 kinds of online courses, sometimes I just start some to see how they are different from
 239 ours. I'm not a fan of videos because I don't like reading fast and seeing whether there is
 240 anything interesting but some people maybe they prefer to have a video explaining them
 241 something.

242 Interviewer: Okay. So when you were structuring your particular week's stuff, what was the process?
 243 Can you talk me through the process of how you worked out how you were going to
 244 structure the content and what articles you were going to use and so on?

245 Katarina: Yeah, so for me the process was I think a bit more difficult than for two of my other
 246 colleagues because when we started preparing MOOC, I still haven't been teaching at all
 247 at university because it was the first year and during the first year of [REDACTED] [Methods](#)
 248 we didn't have any students. So I started teaching my module at the same time the MOOC
 249 was actually released for the first time. So I was preparing for my module, thinking about
 250 the content of ten weeks, of 12 weeks for my class and then thinking what kind of things
 251 I could take for the MOOC, while I think two other of my colleagues were maybe had some



- Collins D.L. Institutional financing/ resource
- Collins D.L. Professionally made animation
- Collins D.L. Leveraging funding from national programme to fund further videos for F2F
- Collins D.L. Interaction between MOOC and F2F
- Collins D.L. Engagement strategy – using animation
- Collins D.L. Learning from other online courses
- Collins D.L. Tutor preference: influence of personal learning mode preferences on MOOC design
- Collins D.L. Developing MOOC content alongside developing F2F course content

E.2 Examples of memoing

Code Panel      

Strategy - include threshold concepts (evidence of building up from first principles _from underpinning theory/ logic)

- include chunking material, repetition in different formats, quizzes

Tactics - include demonstrating how to do something in the software



BUT DO TACTICS EXIST IN ONLINE ASYNCHRONOUS WHERE INTERACTION WITH STUDENT HAS BEEN PRESCRIBED? CAN THEY BE MORE IMMEDIATE AND RESPONSIVE TO FEEDBACK INSITU? OR DO TACTICS LOOK DIFFERENT IN THIS SITUATION? IF DO HOW DO THEY DIFFER TO OTHER TYPES OF ONLINE TEACHING - E.G. ASYNCHRONOUS INTERACTION WITH STUDENT, SYNCHRONOUS?

Actions - include where student is asked a quiz question, to scroll through material, play video, load software,

Code Panel      

F2F course notes were condensed by removal of the math and extra examples. But also the spontaneous Qs students ask, the teacher's response to blank faces?

There is also something about the way Tom talks about the course design as being 'all Will'. Like the design of an online course requires skills he doesn't have.

 Generic affordances 

Edit Code Panel      

These perceived generic affordances of the MOOC - do these reflect the marketing of MOOC tech providers? Or perhaps reflect teacher's own research interests?

Something too perhaps about experience with teaching online. Do more experienced online teachers have a better sense of how the affordance of the technology help them achieve their pedagogic goals?

E.3 Analytical steps – from coding to thematic analysis

In this section I illustrate the different analytical steps I undertook, described in sections 3.9.3 and 3.9.4. Using the example of the code *adaptations*, I illustrate how the code was generated from line by line reading of, for this code, interview transcripts, and further refined and developed by bringing in the literature – in this case Shulman’s (1987) Model of Pedagogic Action and Reasoning (MoPRA). Finally, I present the main analytical themes I derived through deeper exploration of the data.

Adaptations: How teachers change their pedagogy in response to the online teaching and learning environment. Includes responses to student feedback, technology failure, and previous online teaching experience.

Coding transcripts

Online SRM teacher - Karen

Reference 4 - 8.84% Coverage

INT: You’d mentioned earlier that there were some changes that you made between year one and subsequent years to the course, what precipitated those changes?

Karen: We got the student feedback, and one was that we were asking them to do quite a lot, so we reduced the amount of reading we asked them to do. Also made it a bit more straightforward the online activities. So, we had various activities – look at this, write a review, post up, look at other people’s posts, write a response: quite a lot of iterative work. And I think, I think people found that too much. I don’t know whether it’s too much in volume or too many, you know, small tasks having to constantly remember to do. So, we streamlined it and as part of that we also moved to Skype rather than the [institutional] platform. Yep.

INT: And was the fact that you changed platform, did that have any impact on how you organised the course or the kind of activities you were getting people to do?

Karen: Yeah it did because, as I say, we couldn’t get people to upload anything onto Skype, so the seminars turned from more structured ...the initial plan was for more structured two-hour seminars, with people typing on the screen during them and dividing people into smaller groups and providing them with questions to answer and we’d come back and share their answers. I suppose the shift made the seminars much more like face-to-face seminars I suppose with everybody looking at their screens rather than the same room.

Reference 5 - 0.42% Coverage

... we gave them three readings. Initially we asked them to read all three but that went down to two of the three once we realised that that was quite demanding in the timescale.

Case study 2: Thea

Reference 1 - 6.19% Coverage

We wanted to run synchronous classrooms through Adobe Connect and that is just a terrible programme. And we just couldn't make that work. So, we took to speaking individually with students on Skype calls rather than do this as a class activity or do much more email contact, which you can do when there's low numbers but when it's in a class of 20, 25 it becomes unmanageable. We still haven't quite resolved that because we haven't got a new online forum to replace Adobe Connect. So that has to happen because otherwise; it's kind of an absolute prerequisite to be delivering an online programme to have good technology and that wasn't there. So that was a bit disappointing. The other thing that I've done, I've really changed, I've really simplified, really tried to make it more professional.

Reference 2 - 1.80% Coverage

I've tried to even, more also with the online students, maybe that's the point to make, than I do with face-to-face students. Even more with the online, I try to emphasize the personal because face to face have each other. I'm sure you hear that at the research conference, where people are seeing, where [student name] was showing this photograph of all the students. All the WhatsApp groups and the very close interactions that they had. That is really, really important. And the online students don't have that, and we have to artificially replace that. And we try and do that through our individual approach with students, and then also have these discussion forums where students can check their understanding and where they can have conversations with each other.

Refining codes: the example of adaptation (extract) and linking to theory (Shulman's (1987) Model of Pedagogic Action and Reasoning

Shulman's MoPAR	Kind of adaptation	Description	Seen In	Notes
Transformation - adaptation	Reducing tasks	Reduced, streamlined course activities and tasks in response to student feedback for subsequent iterations of course	SRM online teacher Karen	Student feedback - asking students to do too much. Changes made ahead of next course iteration. Different to simplification - this is about responding to student feedback that there are too many activities to do in the time
Not covered	Change in synchronous (seminar) format	Format and structure of seminars changed e.g., became less or more structured, became one-to-one session between teacher and student	SRM online teacher Karen Case Study (CS) 2 teacher Thea	Int01 Change in technology meant teacher couldn't implement initial plan so changed the plan CS02 (Thea) Problems with software meant moved from group to 1-2-1 synchronous sessions with students
Transformation - adaptation	Change in synchronous (seminar) format	Format and structure of seminars changed in response to how students engaged with them	SRM online teacher Dana	Int07 Experimenting with more structured approach as students not attending synchronous session.

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Shulman's MoPAR	Kind of adaptation	Description	Seen In	Notes
Transformation - adaptation	Tailoring to the audience	Teacher thinks about how to tailor content to learners	SRM online teachers: Karen, Max, Rachel, Dana CS01 teacher Tom, educational technologist Will CS02 teacher Peter	Karen mentions this-but as a challenge Rachel thinks about this in terms of simplifying material, using non-academic sources Rachel changes an assessment used in F2F course to make it suitable for online audience, who will have less time CS01 (Tom) online audience won't have foundational knowledge e.g., maths) CS02 (Peter) students increasingly focused on assignments
Instruction	Change in content covered in synchronous sessions (seminars)	Content teacher planned to cover in synchronous seminar changed in response to learners. Results in teacher covering unanticipated (unwritten) content	SRM online teacher Iona	Reflects students' interests
Not covered	Online hours	Teacher sets specific time(s) when online and engaging with learners	SRM online teachers: Iona, Max CS02 (Thea)	Designed to manage time - create boundaries, manage learners' expectations about how available teacher is
Transformation - preparation & planning	Organisation	Keeping records of previous discussions, materials, references that can be readily accessed and shared with students	SRM online teacher Iona	Supports personalisation
Instruction	Interaction with students	How to communicate with students via text, e.g. tone, when to communicate, length	SRM online teacher Iona	Went on course to learn how to teach online
Transformation - preparation & planning	Multiple entry points	Creating multiple points in knowledge that learners will take breaks	SRM online teacher Iona	Response to learners

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Shulman's MoPAR	Kind of adaptation	Description	Seen In	Notes
Transformation - preparation & planning	Modularise	Shorten and chunk up place-based course material for online	SRM online teachers: Max, Rachel Int03 CS01 (Tom)	
New comprehensions	Impact on F2F teaching	Taking strategies and content from online teaching and applying to place-based teaching	SRM online teachers: Max, Katarina	
Transformation - preparation & planning	Simplifying	Simplifying, streamlining content in response to who the audience is	SRM online teachers: Max, Katarina, Meg Int03 CS01 (Tom) CS02 (Peter, Thea)	Assumption that online /MOOC audience will be different to F2F audience e.g., busier, greater task switching (as students will be older), not have foundational knowledge
Transformation - preparation & planning Instruction	Design of assessments/ activities	Teacher designs assessments in response to stakeholder requirements e.g., MOOC provider and/or pedagogy of ed tech being used e.g., use of multiple-choice quiz questions, and or peer assessment	SRM online teachers: Max, Meg, Rachel CS01 (Tom)	Int03 & 05 MOOCs
Transformation - preparation & planning	Use of different media	Consciously thinking about and discussing use of different media e.g., video, text, voice, animation	SRM online teacher Katarina	This is about what teachers want to do and them being active in decision-making. And out of these discussions they develop plans
Reflection	Using paradata to revise course design/content	Teacher uses paradata from VLE to revise course e.g. data on break off points	SRM online teacher Katarina	This links to affordances of Tech. This affordance supports adaptation

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Shulman's MoPAR	Kind of adaptation	Description	Seen In	Notes
Instruction	Providing more considered responses to students' questions	Teacher uses affordance of online discussion forum to take more time to consider and respond to student queries e.g., gathering references, providing more examples, providing a more structured response	SRM online teacher Katarina	This links to affordances of Tech. This affordance supports adaptation
Transformation - preparation & planning Instruction	Use of text-based resources	Greater use/ emphasis on text-based resources. Teacher writes scripts for what going to say when narrating slides	SRM online teachers: Katarina; Meg CS02 (Thea)	Teacher spends (more) time creating text-based resources
Evaluation	Use of discussion forum to check student's understanding	Teacher uses affordance of online discussion forum to check students' understanding in asynchronous environment	SRM Online teacher Katarina CS02 (Peter, Thea)	
New comprehensions	Teachers experiment with course design, making it more 'flexible', collaborative, open	Making course more accessible to a wider range of students. Allowing students to access SRM material earlier and multiple times. Creating public and private spaces for learning	SRM online teacher Meg	This is a step on from adaptation, to experimentation and reflects experience and confidence in teaching online

Analytical themes

Codebook extract

Theme	Description	Inclusion criteria
Teaching approach	Anything that describes how the teacher goes about their pedagogic task, which coheres around a theory, a set of values, principles, aspirations or identify as a particular kind of teacher	May be a personal approach or recognisable to others e.g. active learning. Approach may be named or unnamed.
Strategy	Goal directed planning for implementing an approach or pedagogic goals	Planned design actions to engage, motivate, manage cognitive load, facilitate dialogue and reflection, manage temporal and physical separation of students and teacher. There is a rationale or purpose for the action.
Tactics	Teacher actions that involve implementing strategy or responding to feedback in situ	Context-specific
Tasks	What learners are required to do or actually do	Specified activities, in which the activity is clearly specified e.g. read x and consider y rather than 'complete the course reading'
Teacher Challenges	Anything that describes or signals what is challenging about teaching SRM online or more generally	Includes reference to the content, the students, the environment (institution, stakeholders, economic conditions), technology, teacher qualities
Student Challenges	Anything that describes or signals what is challenging about learning SRM online or more generally	Includes reference to the content, the environment (home, work, institution), technology, expectations, features of the course (synchronous, asynchronous, assessment)

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Adaptation	Reference to how own pedagogy is modified in response to the context	Context includes online teaching and learning environment, institution, students and others involved in the online course. Includes responses to student feedback, technology failure, and previous online teaching experience
Enabling factors	Any reference to factors that are essential to pedagogic action/ implementation of pedagogic goals	
Supporting factors	Reference to factors that are helpful but not essential in achieving pedagogic action or goals, that move actions/achievement of goals forward	
Barriers	Reference to factors that limit or block pedagogic action/ achievement of pedagogic goals	
Roles of technology	Reference to/ evidence of role digital technology plays in the teaching and learning of SRM online	Includes functionality and affordances of digital technologies

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Theme	Sub-theme	Includes	Exemplars
Approach	Active learning	Learning by doing Application of knowledge Teaching through data	CS01, CS02, Rachel
	Collaboration	Valuing bringing students together to generate ideas, knowledge, understanding	Karen, Meg
	Experiential	Valuing authentic experience Students undertake own research project	CS02
	Problem-based	Valuing benefits to students of having to solve problems for themselves	CS01
	Student-centred	Thing about what students need/ learning challenges “Personalising” “Student first”	CS01, CS02, Iona, Dana
Strategy	Generic strategies that can be used irrespective mode of teaching but may take on greater significance online	Chunking	CS01, CS02, Max
		Simplifying	CS01, CS02 (Peter)
		Use of examples, case studies	CS02 (Thea), Iona
		Discussion (group), stimulating dialogue	CS02 (Thea), Karen, Iona, Meg

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		Linking theory to practice	CS01, CS02, Rachel
		Modelling	CS01, CS02
		Motivating, encouraging students	CS01, CS02, Iona, Dana
		Peer learning	
		Providing opportunities for practice	CS01, CS02
		Scaffolding, including repetition	CS01, CS02, Iona, Dana
		Signposting	CS02 (Thea), Iona
	Specific strategies for teaching online	Providing immediate feedback to learners on e.g. their understanding of a concept, their learning progress	CS01
		Highly directive/ step-by-step instructions	CS01, CS02
		Highly structured/ careful sequencing	CS01, CS02
		Organisation for the teaching environment, including archiving, templates to save time	Iona
		Preparation for online teaching, including synchronous sessions, discussion forum, peer assessment	CS02, Karen, Max
	Tactics	Acknowledging student difficulties/challenges	CS02
Alternative explanations		CS02	

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What teacher does in situ, in response to what students are doing online	Checking in with how students are feeling	CS02 (Thea)
	Clarifying	CS01, CS02
	Encouraging reflection	CS02
	Explaining further, in a different way	CS02, Katarina
	Modelling thinking - how to respond to a problem or answers	CS01, CS02
	Motivating students	CS01, CS02, Dana
	Personalising - tailoring content to individual students, “in your case”	CS02
	Reminders	CS02 (Thea)
	Responding to student queries	CS01, CS02, Iona, Katarina, Rachel
	Shares own experience	CS02
	Screen shares	CS02 (Peter)
	Checking discussion forum/ timely response to student posts	Iona, Dana
	Checking students’ understanding	CS01 (Will), CS02
	Demonstrates/ walks through	CS01 (Tom). CS02
Encouraging students to ask questions/raise issues	CS02, Dana	

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<p>What teacher does when as part of online course design implementation. These tactics can also be used in-situ</p>	<p>Leaving space for students (to respond to each other in discussions)</p>	<p>Iona</p>
	<p>Modelling ways of talking about SRM</p>	<p>CS01 (Tom), CS02</p>
	<p>Narrating a process/ talking aloud</p>	<p>CS02 (Peter), Dana</p>
	<p>Providing (additional) practice data</p>	<p>CS02 (Peter)</p>
	<p>Providing feedback/ correcting misunderstanding</p>	<p>CS01 (Hannah), CS02</p>
	<p>Providing students with analysis code</p>	<p>CS01 (Hannah), CS02 (Peter)</p>

