In search of a social science research methods pedagogy for the digital era: the story so far

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INTRODUCTION

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 NCRM-funded 'Pedagogy of Methodological Learning' project, which aims to support capacity building and facilitate methodological innovation. The paper I presented at the British Educational Research Association 2016 annual conference is one output from this research and is concerned with the use of digital technology in the teaching and learning of advanced research methods.

My presentation draws on findings from a rigorous thematic analysis of recent (post 2005) literature on the teaching and learning of ASRM within a range of contexts (undergraduate/post graduate, short courses, on-line, blended learning, traditional face-to-face) and disciplines within the social sciences, including education. A broad definition of 'technology use' is employed, including not only those technologies that come under the umbrella of digital enhanced learning (e.g. VLEs, social networking, online collaboration and assessment and publishing tools), but also digital tools used when undertaking research, such as data collection and analysis tools. Adopting this broad definition is, in part, a response to the paucity of literature on this topic, but it also allows for consideration of how research methods teaching and learning may change in response to the emergence of new software and online research tools.

This presentation describes the context within which digital technology is being used in the teaching of ASRM and considers two questions:

- Whether there is any evidence that technology is enhancing or changing the ways in which the teaching and learning of research methods are taking place, as authors such as (Laurillard 2013) have suggested?
- How technology is supporting / developing the learning of research methods?

IS DIGITAL TECHNOLOGY ENHANCING OR CHANGING THE WAYS IN WHICH ASRM IS BEING TAUGHT AND LEARNT?

Earlier work by (Kilburn et al. 2014) identified three overlapping pedagogical goals expressed by teachers of advanced social research methods: active learning; learning by doing and critical reflection. Examples of how digital technology is being used to support these pedagogical goals are found in the literature, see Figure 1.

Figure 1: How digital technology is being used to support pedagogic goals

Pedagogic goals	Use of digital technology
Active Learning - making the research process visible by actively engaging students in aspects of the research process and highlighting the connections between theory and practice (Keenan & Fontaine 2012)	Teachers and students use actual survey data to explore topical issues and make connections between theory and methodology (Buckley et al. 2015) Teacher uses an interactive white board to demonstrate quantitative analysis technique, then students and teacher work through an example together (students using analysis software on a computer) before the student does one on their own (Scott Jones & Goldring 2015)
Learning through doing - facilitating learning through the experience of conducting research (Aguado 2009; DeLyser 2008)	students undertake their own research project (individually and or as a group) using digital research tools, such as writing their own web questionnaire using software like SurveyMonkey, analysing qualitative data using a software package such at Nvivo, or creating a Wiki to support the writing up of a group research project (Buckley et al. 2015; Scott Jones & Goldring 2015; Silver & Woolf 2015; Gullion & Ellis 2014; Schulze 2009). Software may also be used so that students can experiment, e.g finding out what happens if they change the parameters of a statistical model. Students may develop their research proposal using online peer review software, where students gain experience in reviewing their peers' research proposals (Chen & Tsai 2009).
Critical reflection - encouraging critical reflection on research practice (DeLyser et al. 2013; Thien 2009)	Online peer review or online collaboration tools are used, with students reviewing their own research proposal in light of comments received from their peers and tutor (Chen & Tsai 2009). Students critique the data they collected as part of a group research project (Schulze 2009)

In addition, there is some albeit limited evidence of ASRM teachers and learners making use of particular affordances of digital technology. In my review I found examples of digital technology being used to support collective learning spaces, through use of a Wiki (Gullion & Ellis 2014) to support students in writing up their group research project, and a white board to facilitate a type of learning - . 'I do one, we do one, you do one' - to support the growth of a (new) collective learning space (Scott Jones & Goldring 2015).

HOW IS DIGITAL TECHNOLOGY SUPPORTING AND DEVELOPING ASRM PEDAGOGY?

In my presentation I consider what the evidence from my literature review tells us about how digital technology may support and develop pedagogical goals such as active learning, learning though doing and critical reflection. Figure 2 summarises the evidence.

Figure 2 Examples of how digital technology is supporting and developing pedagogic goals

Ways in which digital technology is supporting/ developing ASRM pedagogic goals	Activities & approaches
Builds students and teacher confidence	• developing students understanding of data analysis software architecture & skills in using its features (Silver & Woolf 2015) • creating web interfaces that allow students to explore survey data with minimal guidance (Buckley et al. 2015) • using interactive/collaborative tools to create collective, safe learning spaces (Scott Jones & Goldring 2015)
Helps students achieve their learning outcomes	• practising ASRM skills & exam technique through use of online quizzes (Gönül & Solano 2013) • receiving regular, fast feedback • identifying problematic threshold concepts
Facilitates communication	• between students, students & teachers, students and the outside world (Gullion & Ellis 2014; Schulze 2009)
Assists with breaking down barriers to learning	• facilitates access to learning resources (Buckley et al. 2015; Schulze 2009; Campbell et al. 2008) • can learn at a place and time of student's choosing (Chen & Tsai 2009; Schulze 2009)

Again the literature is limited and my doctoral research seeks to understand more about the role of digital technology in supporting pedagogical goals, exploring:

- whether different pedagogic strategies needed for different ASRM learning environments (completely online or blended)?
- What role can digital technology play in the teaching and learning of concepts and ideas that underpin ASRM?
- What role can digital technology play in ensuring ASRM students have threshold concepts in place?
- Is digital technology being used to facilitate students in becoming fluent in the language of ASRM? Does this fluency facilitate new ways of thinking and forms of practice?
- How is digital technology being used to facilitate ASRM critical thinking?
- How can digital technology support the learning through doing of ASRM?