

How does completing a dissertation transform undergraduate students' understandings of disciplinary knowledge?

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Abstract

Dissertations are positioned as the capstone of an undergraduate degree, bringing together what students have previously learned from their programmes through a piece of independent research. However, there is limited research into the ways in which engaging in a dissertation impacts on students' understandings of disciplinary knowledge. In this article, we explore the relations between students' accounts of sociological knowledge in their second and third year and how they engage with sociological knowledge in their dissertations. We argue that for the work of the dissertation to impact on students' understanding of sociological knowledge, students need to see their discipline as providing a way of answering their research questions. We explore the implications of this argument for both our understanding of the role of dissertations and research-based learning in universities more generally.

Introduction

Undergraduate dissertations occupy a strange position in higher education. They are positioned as the capstone of undergraduate experience, involving the integration of what students have previously learnt on their programmes and through which they gain entry to their disciplinary or professional communities (Meeus et al. 2004; Brew 2006; Gibbs 2010). Based on this, Gibbs (2010, p.7) argues that they are "amongst the most telling of all indicators of educational outcomes". Yet, despite representing the pinnacle of an undergraduate education, research into dissertations is remarkably sparse (Gibbs 2010).

In defining what counts as a 'dissertation', there are four key characteristics: the student defines the focus of the work; the work is carried out on an individual basis with tutor support; there is a research element that involves the analysis of primary or secondary data; and students have prolonged in-depth engagement with the piece of work (Todd et al. 2004). The limited literature

on dissertations tends to focus on the challenges that students face in engaging with the research methods needed to complete their dissertations (Sachs 2002; Todd et al. 2004; de Kleijn et al. 2012). This struggle is also reflected in the literature on students' engagement with research methods more generally (Murtonen and Lehtinen 2005; Wagner et al. 2011; Earley 2014) and on how students use evidence in their academic work (Head 2013; Head and Eisenberg 2010). The literature also highlights the crucial role of the supervisor in the dissertation process (Derounian 2011; de Kleijn et al. 2012, 2014).

One aspect that is missing from the literature is research into the learning process involved in undertaking a dissertation (de Kleijn et al. 2012). An associated literature that might shed some light on these processes is the literature on inquiry-based learning. Brew (2006) argues that dissertations are the most common and long-established form of inquiry-based learning in higher education. Spronken-Smith and Walker (2010), based on a review of research into inquiry-based learning, identify six core elements of inquiry-based learning. These are that students' learning is stimulated by inquiry into questions or problems; that this learning is based on the construction of knowledge; that it involves an active approach by the students; that the teacher acts as a facilitator in this process; students take increased responsibility for their learning; and that through this process students develop skills and mature intellectually.

Whilst these six elements provide a helpful summary of the learning processes that are intended to be engendered by dissertations, the account of the learning process it provides is a generic one. This is understandable given that Spronken-Smith and Walker's (2010) focus is on a range of disciplines and this generic approach is taken by many other advocates of research-based learning (for example, see Healey 2005). This is similar to research on dissertations that focuses on the

generic aspects of undertaking a dissertation such as the independent learning involved (Sachs 2002) or students' ownership of the process (Todd et al. 2004)

When considered from the perspective of a range of disciplines these processes can be meaningfully described in generic terms, by grouping together the processes that are shared across disciplines such as critically engaging with the literature, developing research questions and generating and analysing data. However, for particular students completing particular dissertations they are not generic because all of these processes involve engaging with particular forms of disciplinary and professional knowledge that mean that these processes involve different practices and ways of thinking in different disciplinary and professional settings (McCune and Entwistle 2011; McCune and Hounsell 2005). While some research into research-based learning has begun to foreground the forms of knowledge that students develop through inquiry-based learning (Levy and Petrulis 2012) and there are many examples of studies of inquiry-based learning that are focused on particular forms of disciplinary knowledge (for example, in Geography see Spronken-Smith et al. 2008; Mountrakis and Triantakonstantis 2012), studies of dissertations have not examined how students' understandings of their disciplines are affected by the work of completing a dissertation. In this conceptualisation of dissertation completion, students bring together their understanding of the ways of thinking in their disciplines and particular research methods. It is these processes that are the focus of the current article.

It is notable that the research into inquiry-based learning has been criticised for focusing more on its purported benefits than the mechanisms by which it might achieve these benefits (Trowler and Wareham 2008). This omission is notable because these mechanisms are likely to lie in the relationships that that students develop with particular knowledge through inquiry-based

learning, generally and dissertations specifically. The importance of understanding the disciplinary aspects of dissertations and inquiry-based learning might also explain why, despite a long history, the literature underpinning inquiry-based learning is “at best patchy and diffuse” (Spronken-Smith and Walker, 2010: 726). In order to understand the mechanisms that lead to the educational benefits of completing a dissertation, it is necessary to focus on the ways that students engage with particular forms of disciplinary knowledge in their dissertations. Once these have been captured for a range of disciplines then it would be possible to examine the generic aspects of a dissertation providing there is awareness about the ways in which these change in relation to different forms of disciplinary knowledge. It is interesting that this has not been a focus of previous research into dissertations despite a number of studies taking place within single disciplinary areas (Sachs 2002; Meeus et al. 2004; Todd et al. 2004).

In this article, we explore the relationships between students’ understanding of sociology, their accounts of the process of completing their dissertations and the way they present sociology in the text of their dissertations. We take a phenomenographically-informed methodological approach and make these mechanisms explicit by focusing on undergraduate dissertations in sociology and the factors that appear to affect whether or not working on these dissertations changed students’ understanding of sociology.

Methods

The research project

The Pedagogic Quality and Inequality in University First Degrees Project was a three-year ESRC-funded investigation of sociology and related social science undergraduate degree programmes in four UK universities. All of the degree programmes were three year Bachelor of Arts degrees which required the completion of a 10-15,000 word dissertation, which began in the students

second year and was completed in their third year. The dissertation made up a quarter of the students' third year credits.

We gave the four institutions the pseudonyms Prestige, Selective, Community, and Diversity Universities in order to reflect their different reputations. The departments at Prestige and Selective have been regularly rated in the top third of UK higher education league tables for their research and teaching in Sociology, while those at Community and Diversity have been regularly rated in the bottom third. The degree programmes at Prestige and Selective had higher entry grades than Community and Diversity, who admitted a higher proportion of students from working class backgrounds (around half their intake compared to between a third and a fifth of the intake for Selective and Prestige). As its name suggests, the programme at Diversity admitted a much greater proportion of its students from ethnic minorities than the other three institutions.

Three years of intensive fieldwork produced rich data sets, including: in-depth interviews with 98 students eliciting biographical stories and their perceptions and experiences of higher education; 31 longitudinal case studies following students throughout the three years of their degree programmes; a survey of over 750 students; interviews with 16 staff; analysis of video recordings of teaching in each institution in each year of the degree (12 sessions); analysis of students' assessed work (examples from each year); a focus group discussion with tutors from all four institutions about students' assessed work; as well as documentary analysis and the collection of statistical data relating to the four departments. The fieldwork was ethically approved and all participants provided informed consent for their involvement in the project and the use of the data in subsequent publications.

This article is based on an analysis of second and third year interviews with the case study students, who provided us with a copy of their final dissertation, and an analysis of the text of their dissertation. The interviews were semi-structured with a common set of core questions and the interviewer then asking follow up questions based on students' initial responses. The second and third year interviews focused on students' sense of identity, their experiences of studying at university and their wider experiences outside of university. The third year interviews were all conducted during the time in which students were close to completing their dissertations. The third year interview schedule included questions about the students' experiences of their dissertation but did not specifically ask about the students' relationships with their supervisors. Thus it was left to the students to mention their relationship with their tutor if they felt this was a significant element of their dissertation experience

The participants

The case study students were self-selecting participants who responded to invitations to be involved in the project that were distributed to all first students studying criminology or sociology at each institution in the first year of the project (2008). They were given a £20 shopping voucher for their involvement in each interview and were interviewed by members of the project team who were from a different institution and therefore not involved in teaching or assessing them. All of the names used in the analysis are pseudonyms.

Only those case students who gave us a copy of their dissertation were included in the analysis for this article. This reduced the number of students from 31 to 15. These students were made up of four of the six case study students from Community, two of the nine from Diversity, four of the seven from Selective, five of the nine from Prestige. The differences in the numbers of students

from each of the institutions means that we do not compare them in this article but rather focus on the relations between students' accounts of sociology and working on their dissertations (from interviews) and the written texts of the students' dissertations.

The analysis

We describe the form of analysis that we undertook for this article as 'phenomenographically-informed'. We use this term because whilst this analysis was not in itself phenomenographic, it was both based on a phenomenographic approach to understanding the research process and the outcomes of a previous phenomenographic analysis. Phenomenographic analysis describes the qualitative variation in the ways that a group of people experience a phenomenon (Marton and Booth 1997). However, its underlying aim is to understand the structure of the relations between people and phenomena based on this qualitative variation (Marton and Booth 1997). It was this aim that informed the current analysis, which meant that the focus within data analysis was to use qualitative variation constituted within the data to form structures. Any individual quotations that are used are selected because they are illustrative of these structures of variation. For this reason, in this article, when reporting our research outcomes we first explain the structure of the relations and then provide an illustrative quotation. This underlying approach also means that we write in terms of 'research outcomes' rather than 'findings' or 'results'. This is because the outcomes are seen to be constituted through the relationship between the researchers and the data rather than existing 'out there', waiting to be found (Marton and Booth 1997).

Three forms of analysis were undertaken. First, in an earlier study (Ashwin et al. 2014), we generated a phenomenographic outcome space which expressed students' accounts of

sociological knowledge. The variation in students' accounts of sociological knowledge were expressed using five categories of description:

1. Sociology is about developing my opinions on a broad range of issues.
2. Sociology is the modules that I study.
3. Sociology is the study of societies/other people.
4. Sociology is the study of the relations between people and societies and includes me.
5. Sociology offers a number of different ways to study the relations between people and society each of which offers a different and partial picture of these relations.

These categories of description are related to each other in an inclusive hierarchy, which means that category 5 includes category 4 and so on. We returned to our analysis in the earlier article to identify which category in this hierarchy was most aligned to account of sociological knowledge that students gave in their second year and third year interviews. In doing so, it should be noted that identifying individuals in this way is not in itself phenomenographic. Phenomenographic outcome spaces reflect variation within the group of participants and thus the categories of description represent variation within the group as a whole rather than position of individual participants (Marton and Booth 1997; Åkerlind 2005). It is for this reason that we write in terms of 'alignment' with the categories of description.

In analysing the dissertations, we drew on the structure of the variation across these categories. There were two crucial elements to this. First in the move from category 2 to 3, there is a move to the discipline being systematic in studying societies. This is further developed in the move from category 4 to category 5, where there is recognition of the partial nature of this systematic study

that leads to the questioning of the completeness of any particular sociological concept. For this reason, we analysed the extent to which students took a systematic approach to their research in their dissertations and the extent to which they questioned the concepts that they used to underpin their research.

The second element is reflected the move from category 3 to category 4, where the student is implicated in the study of sociology. We examined two aspects of this. First the extent to which their dissertations expressed awareness of their impact as researchers on the objects that they were researching. Second, the extent to which their dissertations expressed reflexivity by turning their concepts on themselves to question their practices as researchers.

These moves were then related to the categories of description in the outcome space in the following ways:

- Where students expressed a systematic view of the object of their research in their dissertation, this was seen as aligned with Category of Description 3 from the phenomenographic outcome space. All of the dissertations we analysed met this criterion.
- Where students' accounts in their dissertations also showed that they were implicated in their research, this was seen as aligned with Category of Description 4.
- Where students then critically questioned the concepts they were using to underpin their research, this was seen as aligned to Category of Description 5.

Students' dissertations were assigned the highest category that was evident in their accounts of the research process. The analysis of each dissertation was first carried out independently by two of the authors. This initial analysis had an intercoder reliability of .87. In the two cases whether

there were differences in the category each dissertation was assigned to, these were discussed further and a categorisation agreed upon. The outcomes of this analysis were then compared with the highest category of description that students' account of sociology in their second year and third year interview aligned with.

The final element of our analysis was to examine students' accounts of their experiences of undertaking their dissertations in their third year interviews. The analysis of these interviews was carried out initially by the first author, which was then critically examined by the other authors to check and challenge the interpretation offered. This approach is common in phenomenographically-informed studies (see Åkerlind 2005; Trigwell 2006). The intention in analysing the third year interviews was to understand the factors that contributed to the ways in which students engaged with sociological knowledge in their dissertations.

Research Outcomes

In outlining the outcomes of our research, we first examine the variation in the accounts of sociology produced in the students' dissertations. We then examine how these relate to students' accounts of sociology in their second year and third year interviews and their accounts of their experiences of completing their dissertation in their third year interview.

Accounts of sociology in students' dissertations

Of the 15 dissertations analysed, eight appeared to be aligned with Category of Description 3, three to Category of Description 4, and four to Category of Description 5 outlined earlier. In eight of the dissertations, we judged that the students related the objects of their research to a systematic body of knowledge but found no evidence that they saw themselves as implicated in their research or explicitly questioned the concepts that they used in their dissertations. For

example, as the following excerpts from his dissertation indicate, Felix undertook an ethnographic study that he explicitly related to a body of literature. However, this appeared to be aligned to Category of Description 3 because when discussing his relations to his participants he only expressed concern that the participants might have seen him as working for their managers. There is no sense that he as a researcher might have impacted on the actions and accounts of his participants:

Although limited in its generalisability, the qualitative methods employed provided a firm foundation upon which to contribute to discourse of masculinities with reference to regulatory sexual discrimination and the acculturation process... All subjects were also made aware that I as the researcher was not working for their managers, and any observations made would be confidential to everybody within the organisation. These steps were taken to ensure that any behaviour observed was as natural as possible and that trust was established, ensuring the overall validity of findings. (Felix's Dissertation, Prestige).

In contrast Ethan's thesis, which appeared to be aligned with Category of Description 5 has an explicit discussion of the role of the researcher in constructing data through the interview process;

It is worth acknowledging that some level of reflexivity is unavoidable with regards to this particular mode of data collection, and indeed, many other qualitative research methodologies. Much qualitative research is quintessentially interactive and as such, the knowledge constructed during qualitative interviews is inherently

interpretive: the researcher constructs understandings of the topics covered through the questions they ask, the contexts they study, and their own personal biography (Ethan's Dissertation, Selective).

Similarly, in terms of questioning concepts, in some dissertations there was no evidence that students recognised that the concepts they used to explain their outcomes might be limited in some way. For example, in Fifi's dissertation on cluster bombs, which appeared to be aligned with Category of Description 3, there is an emphasis on how some information does not come to light but not a sense that the concepts available to explain human rights violations might be limited:

The drive for this project was the realisation that only a fraction of human rights violations that occur become part of general knowledge, and even then the exposure is often due to campaigns by NGOs and activist groups. It was also the realisation that even with exposure in mainstream media, it was possible not to know about the Sudanese genocide or the Ugandan child soldiers, and in this case, the investment by banks in cluster bombs, because it is such a niche area of news that is not always in the headlines. (Fifi's dissertation, Prestige)

In contrast, Esther's dissertation, which was aligned with Category of Description 5, has an explicit sense that the categories used to understand hair styles might not fully capture the subtlety of the relations between identity and social positioning. Thus hair styles can provide 'indications and clues' rather than anything more definite.

The way in which an individual shapes their hair and the relationship they maintain with it can betray their social positioning unless specific steps are taken to dissimulate where they are situated on the echelons of society. Nonetheless, throughout this dissertation, I have discovered that the differences in the conception of hair and its styles in between different social groups are quite subtle, if extreme ends of both spectrums are overlooked, and the physical manifestation of one's social positioning, through the hairstyle one chooses to wear, is not entirely obvious and unambiguous, requiring instead great attention to detail and a consideration of other physical aspects of one's appearance. In most instances, hair can, accordingly, not be isolated from other elements of an individual's physical appearance in order to determine their social positioning, although it can certainly offer indications and clues. (Ester's dissertation, Selective).

Relations between accounts of sociology and dissertations

Table 1 shows that in 12 out of 15 cases students' representation of knowledge in their dissertation was more inclusive than their accounts of sociology in their second year interview. In two cases students' accounts of Sociology in their dissertation appeared to be the same as the account given in their second year interview and in one case the account given in the dissertation appeared to be less inclusive than that provided in their second year interview.

TABLE 1 ABOUT HERE

There are three potential explanations for most students' accounts of sociological knowledge being more inclusive in their dissertation than their second year interview. First, students' understanding of sociology may have become more inclusive. Second, the students might express

a different account of sociology in writing than in an interview situation. Third, the students' dissertation supervisor may have coached the students to provide a more inclusive account of sociology in their written dissertation but without changing the students' understanding of sociology. In order to decide which of these explanations appeared to be the most convincing, we examined the relations between students' accounts of sociology in their dissertation and in their third year interview. If students' understanding had become more inclusive then we would expect a closer match between students' accounts of sociology in their third year interviews and their dissertations than between their second year interviews and their dissertations. If the second or third explanation were correct then we would expect the match to be about the same.

TABLE 2 ABOUT HERE

Table 2 shows the relations between students' accounts of sociology in their third year interview and their dissertation. This shows that in six cases the account of sociology in the third year interview is the same as in the dissertation and in 13 out of 15 cases there is a difference of one or less in the category of description in the third year interview and the dissertation. In contrast, Table 1 shows that in only two cases the account of sociology was the same in the second year interview and the dissertation and in eight out of 15 cases there was a difference of one or less. This provides strong evidence that the differences in students' accounts of sociology were due to changes in their understanding rather than the differences between the spoken and written forms of the interviews and dissertations or due to the editing suggestions of the students' dissertation tutors.

Why did completing a dissertation not appear to change some students' accounts of sociology?

In order to examine why the experience of completing a dissertation did not appear to lead to some students' developing more inclusive accounts of sociology, we examined students' accounts of the experiences of working on their dissertation in their third year interview. These interviews were conducted when students were engaged in the process of writing-up their dissertations. This analysis suggested that while all students were interested in their dissertation topic, changes occurred when students saw sociological concepts as providing a way of addressing a topic they were interested in. In some cases, tutors played a key role in helping students to see their topics sociologically.

In the ten out of 12 cases where students' views of sociology was more inclusive in their dissertation than their second year most student interviews we detected that, while they were very personally interested in the topic of their dissertation, they saw sociology as providing tools and concepts that could allow them to explore these topics in greater depth. For example, Elliot explained how 'the normalisation thesis' helped him to frame his dissertation topic:

It's based on the normalisation thesis and it's to do with, what I found interesting, just speaking to people, just generally, before I even started thinking about a dissertation, was that you get a lot of people that come to university and they've led quite straight lives, they come from nice, middle-class families... They come to university and they just go nuts and it's this massive liberated experience for them and, you know, they start sleeping with loads of different people, they drink all the time, they take drugs which is something that was quite alien to them. So it's to do

with trying to look into university as a context, as an environment and how it provokes the changes in attitudes and behaviours. (Elliot, Year 3 Interview, Selective).

Similarly Lauren explained how her use of Judith Butler's work framed her examination of women's experiences of polycystic ovarian syndrome:

Polycystic ovarian syndrome, it's a disorder that happens with women and it's about one in five women in the UK that have polycystic ovaries and the syndrome is basically you have more male hormones than normal, so you get a lot of symptoms such as hair, like on your face and all over your body.... I'm trying to investigate in terms of gender, using Butler's Theory and Queer Theory, how the people experience that because there's a lot of women being affected and the symptoms are very non-feminine. (Lauren, Diversity, Year 3 Interview).

However, when five of the students discussed their dissertation in their third year interviews, there was no indication that they saw sociology as providing useful concepts or ideas that would allow them to engage with these topics in more depth. This was despite their high levels of interest in their topics. For example, Fifi explained her interest in cluster bomb investments without any use of sociological concepts:

I'm analysing why some stories get covered and some don't. I started off on why some human rights violations get covered and some don't. I just decided to focus on cluster bomb investments by banks and I'm quite interested in the media so I decided to do that... For example, the other day I found out that one of the non-executive chairmen of the BBC is from Barclays and Barclays is the number one

investor in cluster bombs in the UK. So that kind of connection, so those sorts of things, I'm just looking into. (Fifi, Prestige, Year 3)

Similarly Elmira's account of her dissertation demonstrated her interest in the topic but did not use sociological concepts to frame it:

So I am basically going to write about the censorship laws that exist... I am going to criticize censorship throughout the whole essay, but at the end what I am going to point out is that if censorship was not there, society as we know it would collapse. Because not everybody can handle reality. There are some things that need to be kept away from everyone. (Elmira, Selective, Year 3 interview)

In three of these five cases these students accounts of sociological knowledge in their dissertation was not more inclusive than in their second year interviews. However, there were two exceptions. In these cases, whilst there was not a clear sense that they saw the ideas of sociology as a way of answering their questions, in the students' accounts of writing their dissertations they identified their tutors as playing a key role in advising them. For example, Fiona explained the importance of her relationship with her tutor:

My dissertation tutor advised me to take a kind of specific genre within blogging, so I'm going down the fashion blogging route and particularly girls who create plus size fashion blogs, 'cos I think that goes against quite a few social norms...I think I've been really lucky, like with the relationship I've got with my tutor... I really trust what she's saying and what she suggests to me, because a lot of my friends have

tutors and they're not very proactive, they just leave you a lot. So to know that she knows what she's on about is really reassuring. (Fiona, Prestige, Year 3).

Similarly, Maurice explained how his tutor encouraged him to focus on morality within his study of street prostitution:

I was speaking with my tutor and I'd seen a report beforehand on prostitution and it interested me, sort of shocked me at the same time. So I said to her, I'd like to do something in the area and we had a bit of discussion and she sort of mentioned morality as one area. (Maurice, Community, Year 3)

Interestingly, there was only one other student in our sample who talked about their tutor playing an active role in helping them to conceptualise their study through the supervision process. As we did not ask students explicitly about their relationships with their supervisors, it would be wrong to conclude that other supervisors did not do this. Rather it appears that for other students this did not appear to be something that was at the forefront of their dissertation experience. This outcome does however suggest that for students who do not see their discipline as providing a way of answering their research question, their supervisor can play a crucial role in helping them to see their research in disciplinary terms. This conclusion is supported by the finding that the three students who did not give more inclusive accounts in their dissertation than their second year interview, also did not give more inclusive accounts in their third year interview whereas Fiona and Maurice did.

Discussion

In this study we have examined the experiences of a small number of students as they completed their dissertations. Whilst we have rich longitudinal data about these experiences and have drawn on evidence from both the text of their dissertations and interviews in their second and third years of study, the partiality of the account we have offered needs to be recognised in discussing the implications of our outcomes. In particular, given our small sample, we need to be careful in drawing conclusions about how the patterns we established might play out in a wider population of sociology students as well as amongst students completing dissertations in other disciplinary and professional settings. However, our outcomes about the factors that appeared to shape whether or not the experience of completing a dissertation led to changes in students' understanding of sociology do have a number of important implications for the literature.

First, the outcomes of this research emphasise the importance of students seeing sociology as providing a way of framing an answer to their research questions. All of the students were personally interested in the topics of their research but a change in their understanding of sociology appeared to occur only when they saw their discipline as providing a framework that allowed them to answer the questions they were investigating in their research.

This means that despite the focus on research methods in the literature on dissertations (Sachs 2002; Todd et al. 2004; Murtonen and Lehtinen 2005; Wagner et al. 2011; de Kleijn et al. 2012; Earley 2013; Head 2013) what appears to be crucial is that students see their dissertation as piece of disciplinary research rather than simply piece of research. This interpretation chimes with the finding that students are unclear of what to expect in undertaking the work for their dissertations. (Head 2013; Head and Eisenberg 2010). This is because it is the intersection of research and

disciplinary knowledge that is the challenge in undertaking a dissertation. It also suggests, in response to those who argue that there is a lack of understanding of the learning processes involved in undertaking a dissertation (de Kleijn et al. 2012), that these learning processes are characterised by working at this intersection. Indeed it is this intersection that positions dissertations as the capstone of undergraduate experience (Meeus et al. 2004; Brew 2006; Gibbs 2010).

The current research, in line with previous research (Derounian, 2011), suggests the crucial role that university teachers play in helping students to take a disciplinary lens to their research. Where students struggle to see their research as focused on taking a disciplinary approach to exploring their research questions, it is tutors who are in the position to help them to understand this as the purpose of the dissertation. Our analysis suggests that students can be helped by their dissertation tutors providing advice about how to frame their research in disciplinary terms. This needs to recognise the aspect of the topic that is of interest to the student but help them to frame it in such a way that it is something that can be analysed in sociological terms.

Conclusion

In conclusion, we want to move beyond sociology to consider the potential implications of our study for dissertations and inquiry-based learning more generally. In relation to the wider research-based learning literature, our findings suggest the importance of students relating their research to their disciplines or fields of study. It is interesting that this focus on academic knowledge is not an explicit focus of Spronken- Smith and Walker's (2010) six core elements of inquiry-based learning. Whilst they highlight the construction of knowledge, there is no discussion of what this knowledge is. Our outcomes suggest that in terms of subject-based gains of research-based learning, it is those approaches that focus on knowledge (Levy and Petruilis 2012) rather

than the generic aspects of inquiry-based learning (Healey 2005; Spronken-Smith and Walker 2010) that offer the greatest insight into the way it operates. In response to Trowler and Wareham's (2008) challenge, it seems that students' engagement with disciplinary knowledge through research is a key mechanism for the subject-based benefits that are provided through research-based learning. The implications of this are that these benefits are not likely to be derived from students doing any form of research. Unless they see their disciplinary ways of thinking and practising (McCune and Entwistle 2011; McCune and Hounsell 2005) as providing a way of answering their questions then engagement in inquiry-based learning is unlikely to lead to changes in students' understanding of academic knowledge. There clearly might be other benefits of undertaking non-disciplinary based research but it needs to be recognised that these are benefits of a different kind.

Finally, this article shows the importance of understanding undergraduate dissertations as an engagement with disciplinary knowledge. The powerful nature of the dissertation learning experience comes from the combination of students having a personal interest in a topic, which they draw upon disciplinary knowledge to explore, and in which they are supported by a knowledgeable tutor who can help them to relate their personal interest and disciplinary knowledge. Generic descriptions of the dissertation process and of inquiry-based learning more generally obscure the key role that is played by disciplinary knowledge in shaping what students gain from the research process.

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Tables

Table 1: The relations between students' account of sociology in their second year interview and their final dissertation

Category of Description in 2 nd year Interview	Category of Description in Dissertation		
	3	4	5
1. Sociology is about developing my opinions on a broad range of issues.	2	1	2
2. Sociology is the modules that I study.	3	2	0
3. Sociology is the study of societies/other people.	2	0	0
4. Sociology is the study of the relations between people and societies and includes me.	1	0	2
5. Sociology offers a number of different ways to study the relations between people and society each of which offers a different and partial picture of these relations	0	0	0

Table 2: The relations between students' account of sociology in their third year interview and their final dissertation

Category of Description in 3 rd year Interview	Category of Description in Dissertation		
	3	4	5
1. Sociology is about developing my opinions on a broad range of issues.	0	1	0
2. Sociology is the modules that I study.	2	0	0
3. Sociology is the study of societies/other people.	4	2	0
4. Sociology is the study of the relations between people and societies and includes me.	1	0	2
5. Sociology offers a number of different ways to study the relations between people and society each of which offers a different and partial picture of these relations	1	0	2

