

Reflecting on the knowledge-identity nexus in the learning design of an online postgraduate short course

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Postgraduate Education

Knowledge-Identity Nexus

NVivo

Chapter in brief

Learning design in higher education seeks to promote the development of learning experiences that enable students to meet the outcomes of a course while actively engaging in learning. The form that learning design takes should ideally differ depending on, among other reasons, who the learner is, the purpose of the course and where the learning will take place. In this chapter, I reflect on the development of a fully online Introduction to NVivo short course for postgraduate students at a university in South Africa. I draw on one of several distinguishing characteristics of postgraduate education – the knowledge-identity nexus – to frame the learning design of the course. My main argument is that postgraduate education poses a unique set of challenges for learning designers, and an awareness of these differences should ideally foreground learning design practices at this level.

Introduction

Postgraduate students at masters and doctoral level differ from undergraduate students in several fundamental ways. Two interrelated differences relate to knowledge and identity. Unlike undergraduate students who are introduced to foundational disciplinary principles and skills during their studies, education at postgraduate level is aimed at enabling students to access “powerful” disciplinary knowledge that enables them to see the world differently (Wheelahan, 2010). The acquisition of this knowledge contributes to the development of their disciplinary identities – identities which, consequently, enable them to eventually contribute to, and expand, disciplinary knowledge. As such, education at postgraduate level assumes that foundational principles and skills are already in place, and rather strives to provide

postgraduate students with pathways to disciplinary membership where they can become active and authoritative contributors to knowledge. Yet, there is strong evidence to suggest that postgraduate students face complex challenges in accessing and applying the requisite disciplinary knowledge as well as gaining membership into the relevant disciplinary communities (Inouye & McAlpine, 2017; Kwan, 2009; McAlpine, 2012; Tobbell et al., 2010). Consequently, there have been multiple explorations aimed at understanding how to better support postgraduate students in balancing this knowledge-identity nexus (Gardner, 2008; Kamler & Thomson, 2006; Lee & Boud, 2009; McKenna, 2017; Meschitti, 2019).

While there is acknowledgement that there are differences between the learning needs and approaches of undergraduate and postgraduate students, the design of learning activities and experiences does not always explicitly reflect this difference. This is particularly true in the educational technology space, although there are a few notable exceptions, two of which are briefly discussed below. Lamon and colleagues (2020) acknowledge the heterogeneity of their postgraduate cohort and explore how this impacts learning design decisions. It is interesting to note that their integration of self-directed active learning did not yield significant differences in terms of student marks or engagement. However, the student satisfaction ratings were high as were students' perceptions of how well the content and activities helped them meet the course's learning outcomes. As such, a lower interest in marks and performance potentially signals a different motivation for students' enrolment in this postgraduate course. Nolan-Grant (2019) evaluated and redesigned a postgraduate course based on the Community of Inquiry framework. Due to the initially low interactions in the course (social, cognitive and teacher interactions), the course redesign attempted to avoid surveillance while implementing strategies to encourage participation and interactions. While her approach acknowledges the self-directed nature of postgraduate students, it recognises that part-time students need motivation or encouragement to participate on time in order to meet the course requirements.

Following on from the examples above, the rest of this chapter seeks to reflect on the differences that postgraduate students pose for learning designers. I argue that the interplay between knowledge and identity is fundamental to our understanding of the postgraduate student learning experience, and consequently, how we could potentially frame postgraduate education and support. First, I outline the learning theory used to frame the design, followed by a discussion of the challenge of teaching similar courses. I then discuss the design considerations employed in the development of the course. The students' feedback is woven into these final discussions to share their experiences of the various design considerations.

Transformative learning as design framework

Transformative learning as conceptualised in Jack Mezirow's (2009) work provides a useful framing for a learning design approach that recognises the knowledge-identity nexus at postgraduate level. The theory was first proposed in 1978 and has survived criticisms and extensions from researchers in a range of fields. Transformative learning was originally understood as a theory of learning for adult education, with a specific focus on encouraging students to critically reflect on their assumptions and expectations in order to "transform problematic frames of reference (mindsets, habits of mind, meaning perspectives)" (Mezirow, 2009, p. 92). Questions about what this transformation actually entails at a practical level (Kegan, 2009) have been addressed by elaborating on transformative learning as reflected in changes in the learner's identity (Illeris, 2015) as well as epistemological changes, i.e., shifts in our frames of references – how we make meaning of the world (Kegan, 2009).

Mezirow (2009) suggests that a trigger sets off the process of transformation – what he terms a "disorienting dilemma". This is simply something that challenges our understanding of the world (frames of reference), and learning takes place when *how* we make sense of the world changes. It is interesting to note that our frames of reference are often implicit and subconscious, thus, we are not always aware of them and how they influence our understanding of the world. The result of the disorienting dilemma is that it forces us to make those frames of reference explicit to ourselves in relation to a particular concept – a process that is driven by critical reflection. Hence, the transformative learning process is quite personal. While the ideal is for the teacher to be able to observe – or the student demonstrate

— that transformation has taken place, this is not always possible. In effect, the impact of a transformative learning experience may be manifested after the course is complete when the student demonstrates a shift in their frames of reference (knowledge) or identity in practice.

It is also important to note that transformative learning cannot be taught (Illeris, 2015). Students may experience a transformative learning experience at varying points in a course, or may finish the course without experiencing this at all. The best that a teacher (and learning designer) can do is to design and build a safe learning environment where disorienting dilemmas are sufficiently scaffolded for transformation to take place.

The challenge of teaching QDAS

Teaching students how to use qualitative data analysis software (QDAS) like NVivo is a challenging endeavour because it goes beyond just equipping them with technical skills. Unfortunately, most published literature on teaching QDAS provides minimal guidance because of its focus on pragmatic approaches to teaching these applications (Deakin et al., 2012; Røddesnes et al., 2019). These approaches are often in the form of a methodological crash courses focusing on technical skills (Schmieder, 2019), and fail to provide students with enough time to immerse themselves in the software and experience its true power for their research (Johnston, 2006; Walsh, 2003). Basic code and retrieve which is said to be responsible for mechanistic and decontextualised coding (Jackson et al., 2018; Johnston, 2006) represents the core of what is covered in most of these courses.

Considering the challenges that students face with qualitative data analysis, this technicist approach to teaching QDAS is not ideal. While qualitative data can provide rich and contextualised representations of society and individuals, the sheer magnitude of possible research designs and theories available for qualitative researchers makes it difficult for postgraduate students to select a suitable approach. In addition, postgraduate students regularly underestimate the time they need to organise and immerse themselves in their data during analysis. They also struggle to find useful guidance in terms of how to approach the qualitative data analysis process while staying true to both their research designs and their conceptual/theoretical lenses. As such, the qualitative data analysis process has been described as the most obscure and complex of all the qualitative research processes.

While the use of technology to aid the qualitative data analysis process can help postgraduate students organise and manage their data analysis more effectively, the challenges mentioned above actually mean that the addition of technology to the analysis mix further complicates the process. In my experience of teaching an *Introduction to NVivo* course since 2018, I have observed that postgraduate students (and faculty) attending the course have initial misconceptions about the role of technology, NVivo in this instance, in aiding the analysis process. The general view is that using technology to aid analysis will ease the process as the technology automatically carries out the bulk of the data analysis function. Additionally, teaching QDAS like NVivo involves a consideration of the increasing complexity of these applications. New features are added with each upgrade to try to address the demands of a range of methodological approaches (Silver & Bulloch, 2017; Silver & Woolf, 2015). This results in a steep learning curve as students struggle to learn not only the complex functionality of the software, but also how it intersects with their methodological choices (Johnston, 2006; Salmona & Kaczynski, 2016; Swygart-Hobaugh, 2019).

My aim in this course was to provide a safe and scaffolded space where qualitative data analysis took centre stage. The introduction of the software was guided by what students had already decided to do with their analysis. I sought to ensure that their knowledge about qualitative data analysis and their conceptual/theoretical lenses was a key component to how they approached and understood the role of NVivo in their studies. As such, the design of the course placed the postgraduate student's research at the centre of the design and learning process.

The course: Introduction to NVivo

Introduction to NVivo is a four-week fully online short course for postgraduate students offered at a South African research-intensive university. The course introduces postgraduate students to the basics of using software to analyse qualitative data, including effective data management, coding, reflections, queries, visualisations and reporting. Initially (2018 and 2019), I ran the course face-to-face in five and six-day block sessions. As such, I was already relatively familiar with the heterogeneity of the students who enrolled in the course. This diversity was reflected in the range of disciplines represented in each course, approaches and theories employed in analysis, motivations for taking part in the course and relevant qualitative data analysis skills that the students had at the start of the course. With a small group of approximately 10 students per intake, the face-to-face sessions allowed me to provide individual support to students and provide spaces for interaction and peer learning. Rather than employing generic practice exercises, students built their NVivo projects based on their own data or literature and used their methodologies and theories to frame their analyses or literature reviews.

The course was moved online in 2020 and this prompted a rethink of the presentation format as well as the content of the course. There was also a sharp increase in the demand for the course as part-time postgraduate students now had access to it. The intake for the online course was initially capped at 40 participants. The learning design that I reflect on in the next section of this chapter focuses on the design of this online *Introduction to NVivo* course based on my experiences with the face-to-face course and the learning outcomes I wanted to achieve. As mentioned earlier, both transformative learning and an awareness of the knowledge-identity nexus guided the learning design approach.

Research design

Learning design for all levels of education calls for an understanding of who we are designing the learning for in order to design learning experiences that will enable engaged learning. The learning design for this course posed a unique challenge because of the rich diversity of the participants who signed up. The course caters mostly for masters and doctoral students, although there are always a few academic staff and sometimes even honours level students enrolling in the course. There is a mix of both full-time and part-time students, and each run of the course has students from at least four of the six faculties in the university. Additionally, there have been some indications in the course feedback that some of the students are older and have been out of the higher education system for years before pursuing their postgraduate studies. Again, there is also rich diversity in terms of approaches to analysis, theories and conceptual lenses, as well as students' understanding of the analysis process itself.

As both the facilitator and researcher in the course, there are potential power dynamics that I needed to consider which could potentially impact the collection, analysis and interpretation of the data. There were three specific approaches that I implemented to mitigate the inevitable power dynamics and be explicit about my own biases. First, I encouraged an open and collegial environment during the live sessions where participants discussed their research studies, theoretical and conceptual lenses and analysis approaches. I tried to position myself as facilitator rather than lecturer, and encouraged them to reflect and respond to each other's concerns. As discussed in the next section, I viewed the postgraduate students as adult learners who had prior knowledge of research and could work relatively independently. Second, there were multiple spaces for reflection throughout the course and while this process was difficult for many of the students at first, they gradually got used to sharing their learning journeys and reflecting on their challenges. I believe that this contributed to their honest feedback at the end of the course. Last, as the facilitator, I drew on literature, student feedback and discussions with colleagues to reflect on my positionality and biases in relation to the course and the data that I collected. Brookfields (1995) recommends this critically reflective process as an indispensable part of practitioner research, allowing us to interrogate our assumptions about our teaching and our students' learning – assumptions which may hinder the learning process.

Design considerations for postgraduate students

In this section, I outline the learning design considerations that guided the development of this fully online postgraduate short course. The discussion in this section will focus specifically on issues that relate to knowledge and identity, as well as transformative learning.

The learner

Learning design for all levels of education calls for an understanding of who we are designing the learning for to designing learning experiences that will enable engaged learning. The learning design for this course posed a unique challenge because of the rich diversity of the participants who signed up. The course caters mostly for masters and doctoral students, although there are always a few academic staff and sometimes even honours level students enrolling in the course. There is a mix of both full-time and part-time students, and each run of the course has students from at least four of the six faculties in the university. Additionally, there have been some indications in the course feedback that some of the students are older and have been out of the higher education system for years before pursuing their postgraduate studies. Again, there is also rich diversity in terms of approaches to analysis, theories and conceptual lenses, as well as students' understanding of the analysis process itself.

This rich diversity can potentially be a learning design nightmare, making it difficult for the learning designer to effectively cater for the needs of heterogeneous learners. As such, consideration of the knowledge-identity nexus led me to design multiple learning pathways that would enable me to support the disparate needs of the students. My approach ensured, as discussed later in this section, that each student gained the knowledge they needed for their research, and not just a general technicist approach to teaching QDAS. This last aspect was also important because I recognised that I was working with adult learners who had multiple responsibilities outside of their research studies and had to design the course so that it met their research needs. I also recognised that the course was not for degree requirements (unlike undergraduate programmes) and that participants had specific expectations for signing up. One participant expressed it as such:

I think for me the experience of any course is, did I learn something or waste my time? I can answer a definite yes I learned so much about the content but also so much more about my own approach to data analysis (and also with NVivo) (Academic staff, Education, April 2021)

In designing for these adult learners, I considered the following which align with the principles of adult learning (Merriam, 2017):

- Bite-sized resources with links to a wide range of free web resources for additional information. Each week included up to ten resources and activities, most of which the participants could easily complete in 5 to 10 minutes (besides the few readings and weekly reflections). This allowed them to dip into the course when their schedules allowed. For those who were interested in an in-depth coverage of specific concepts, links to web resources were included. While the resources were kept short, the activities that they had to complete in each section required more time (between four to eight hours a week), which some students found difficult to sustain over the four-week duration of the course. One participant (Academic staff, Commerce) indicated in the course feedback that the time commitment was more than he had expected it to be and found it difficult to balance the course with all the other work commitments.
- Working at their own pace throughout the week or catching up asynchronously when they had time. Several participants appreciated this approach as indicated by this student: "I enjoyed the fact that the course went as fast or [as] slow as I was" (Masters student, Accounting, August 2020). However, this approach made it difficult to build active and sustained interaction into the course. As such, the live sessions were the most interactive spaces, and some students preferred communicating directly with me rather than posting something on the course site. This was also influenced by the individual nature of the assessments which I will discuss later in this section.

Prior knowledge

Postgraduate students are considered adult learners and bring with them a wealth of knowledge and experiences into any course they take. It is therefore important that any new learning draws from what they already know about the subject (Merriam, 2017) as this rich prior knowledge is an important building block for the learning that will take place in the course. Fidishun (2012) explains: “Adults want to use what they know and want to be acknowledged for having that knowledge” (p. 4). The learning designer therefore has to embed into the course elements that allow course participants to be explicit about what they already know. At postgraduate level, this prior knowledge will be richly diverse, which poses an additional challenge for the learning designer: ensuring that students do not feel that their knowledge and experiences are inadequate for the course in comparison to others who may be more experienced. Since our knowledge and experiences are tied to our self-identity (Fidishun, 2012), any negative conceptions could be detrimental to the student’s progress through the course, and potentially to their postgraduate studies. This points to the importance of the knowledge-identity nexus for postgraduate students.

As elaborated in the section on authentic tasks below, another reason for teasing out their prior knowledge was to help them reflect on their “frames of reference” in relation to both qualitative data analysis and the use of NVivo. As elaborated earlier, our frames of reference – the way we make meaning of the world – are sometimes problematic and can hinder the learning process. Transformative triggers or “disorienting dilemmas” are an essential motivation for reflection towards transformative learning.

In the design of the *Introduction to NVivo* course, I attempted to draw participants out so that they could be explicit about what they already knew. Prior to the first week of the course, they completed a short survey about their research studies and what they wanted to use NVivo for. This survey allowed me to gauge their familiarity with qualitative data analysis and NVivo; this information was critical in guiding discussions during the weekly live sessions. Discussion forums also provided opportunities for them to share their knowledge either in response to questions from other participants, or in reflecting on readings and other learning on the course.

Learner expectations versus learner needs

The *Introduction to NVivo* course is an optional support course that provides postgraduate students with specific skills. As such, postgraduate students who sign up for this course do so because they expect it to meet a specific need related to their research studies. Those whose expectations are tightly aligned with the scope of the course often benefit the most from it. The inverse is also true. Two responses to the initial survey are presented below to illustrate this point:

I am currently completing [an undergraduate qualification] and am looking to start with my [postgraduate qualification], hoping that by doing this course it will help me with preparation for 2022 (Undergraduate student, Education, August 2021).

I am an honour's student who is doing empirical research for the first time ... Although I won't be using real data for this course, I believe that I can learn a lot about the analysis of qualitative data (Honours student, Management, August 2021).

Both students’ expectations were quite broad and indicated that they did not have a clear understanding of the purpose of the course and the need to have one’s own research data to use in the course. According to the course logs, both students did not make it beyond the first few activities in the first week. The course is designed in such a way that students use their own data or literature, without which it is difficult to progress beyond the first week. To manage student expectations, I incorporate a discussion into our first live session which aims to help them align their expectations with what the course seeks to achieve. I also highlight some of the problematic expectations shared during the orientation week survey and use these to prompt an open discussion about how these expectations could potentially hinder a students’ success in the course.

In addition to managing expectations, experience of teaching this course has shown that students do not always necessarily have a clear picture of what they will need from the course. I elaborate in the next point about how I attempted to address this by building the course around their research studies through authentic tasks.

Authentic tasks and disorienting dilemmas

As mentioned earlier, one of the issues with teaching software like NVivo is the technician approach which equips participants with technical skills that are not easily transferrable towards the effective analysis of their research data or literature. To counter this, the *Introduction to NVivo course* attempts to introduce the technical skills by using students' research data, analysis approaches and theoretical/conceptual lenses. Using authentic tasks, students are able to see how the software applies to their studies as they learn to use it. The design considerations I incorporated in building these initial "authentic" course activities were loosely based on Woolf and Silver's (2018) five-step method to teaching QDAS. The motivation for this structure was to help students harness the technology to meet their needs rather than learning the technology and then trying to figure out how its functionality could benefit their research studies.

In the first week of the course, the focus is on three activities: 1) understanding qualitative data analysis in general and the specific approach and theories/concepts the participants will be using for analysis; 2) scaffolding their development of an analysis strategy for their research data; and 3) translating the individual tasks in the analysis strategy to match NVivo's functionalities. In this first week, we do not use the software at all; we download and activate it in the second week. Student reflections and feedback during the live sessions in that first week indicated that this was a difficult process for them. The majority did not understand the purpose of this stage and were frustrated that they did not dive into NVivo immediately:

The first week on the NVIVO course has been very difficult for me. Not having access to the programme yet made it very difficult to internalise what has been shared in the online classes and I feel sort of lost. I don't learn well by attending classes without being able to make the learning my own and try out what I have learnt. To really understand the programme, I need to be able to play around and experiment with the different functions of the programme (PhD student, Education, August 2020).

This week was challenging, but more than that it was frustrating. The analysis strategy that we needed to complete as part of this week's assessment was really challenging for me, as I had literally never used the programme [NVivo] before. I felt that the introduction week and week one needed to have more information on the functions of NVivo and less explanations on qualitative data. ...I felt unarmed [and] out of my depth in conceptualising the functions for a strategy (Masters student, Psychology, August 2020).

The sentiments expressed by the two participants above are common in the first week of the course. As such, the activities in this first week functioned as the disorienting dilemma in transformative learning, although that had not been my original intention when I designed the course. A disorienting dilemma is a trigger that challenges our understanding of the world, pushing us towards critical reflection and learning. The source of the disorienting dilemma can be either internal or external, but it results in an internal crisis for the individual that should ideally lead to critical consciousness – an awareness of our problematic values, attitudes, the way we see and relate to the world (Mezirow, 2009) and then critical reflection. It is possible for students to get stuck in this disoriented and frustrated state without moving towards critical consciousness, where they begin to be open to learning. The facilitator's role is to provide a supportive and safe environment for the students to be open about these dilemmas and scaffold their critical reflection as they work towards a shift in their frames of reference (DeAngelis, 2021). As highlighted earlier, these frames of reference refer to changes both in the knowledge (qualitative data analysis, in this instance) and identity (as researchers-in-training).

Therefore, scaffolding was a critical element for the success of the fully online course, and the type of scaffolding required depended on student needs and included technical and access issues, qualitative data analysis and NVivo. I designed some of the scaffolding into the live sessions but also used discussion forums to prompt participants to

share their challenges with different aspects of the course. Students were also encouraged to reach out and ask questions, and I fostered this through the kind of environment I built in the live sessions and the online course:

The teacher was calm and eager to answer even the most absurd questions and always patient to explain for the class participants' understanding (External participant, Natural sciences, August 2020).

I like the fact that she was not moving fast. She was moving with our pace, and this was being considerate to some of us who never did or used the program before (Masters student, Economics, August 2021).

The facilitator was patient and supportive which helped put us at ease especially those of us who usually feel intimidated as soon as technology or new ways of doing is involved. It also helped that Nompilo shared her expertise and knowledge which made the examples she used very authentic. She was able to scaffold the learning for those who were novices and expertly guided those who were more advanced in using NVivo (PhD Student, Education, August 2020).

To scaffold the critical reflection for the learning stage of transformative learning in this first week, I had an additional live session with the students. The purpose of the live session was to guide the students towards critical consciousness and an acknowledgement of the importance of the initial stage – putting in place an analysis strategy before using the software for analysis. The session was also designed to encourage and support critical reflection as students shifted from their initial assumptions and expectations about NVivo and focused rather on what they wanted to accomplish with their qualitative data analysis. However, these week one activities were not experienced as dilemmas by all students which is typical of all disorienting dilemmas in transformative learning. After the first week, there was a shift in terms of the reflections shared by the students regarding their experience of the analysis tasks:

I was sceptical in the first week but after getting into the work of week 2 onwards it makes complete sense to have week 1 (Academic staff, Education, April 2021).

It was extremely beneficial to me to play around with my analysis strategy and see how it works. So much so that my analysis strategy is probably going to change because it does not fit well (PhD Student, Psychology, April 2021).

I was grateful that the tasks for this week were scaffolded in a clear and structured manner because it allowed us to move from the known to the unknown in a logical and pleasant manner (PhD student, Education, August 2020).

My learning this week is that my current strategy, data sources and possible analysis are not in alignment. This could be because I am tackling two separate issues in one study, or because I have not found the thread between these issues. Either way, I will need to address this fissure and find a manner in which to resolve it (PhD student, Journalism and Media Studies, August 2020).

I have been stuck for a while in the abstract theory and unable to connect with my data through the theory, except in the most general way. I think the four stages identified by Creswell provided a calming structure and a practical way forward, then the presentation on Zoom allowed me to imagine doing something with my data, i.e. even if it was just deciding how to upload and organise it in NVivo. This was when I realised I actually have two main sets of data - historical and current, which was the missing link all this time (PhD student, Education, August 2020).

It is important to note that the teaching approach followed in this course (Woolf & Silver, 2018) is contradicted by other leading authors in the field who posit that the analysis strategy and the technical skills should inform each other and progress simultaneously (Bazeley & Jackson, 2013). Drawing on my experience of using NVivo in my own research and teaching it over several years, I found that the first approach better represented how expert users employed NVivo tools, hence my selection of Woolf and Silver's (2018) approach.

Conclusion

The design of the *Introduction to NVivo* course discussed in this chapter is framed by my understanding of the knowledge-identity nexus and its role in the postgraduate researcher's experience. The goal of the learning activities was to create an enabling environment where the course participants could not only gain the requisite knowledge but make an identity shift because of this knowledge. This is why the focus of this course went beyond equipping students with technical software skills and was designed to support the application of the skills to their research projects. Additionally, elements of transformative learning have been useful in structuring the learning journey and designing the learning content. This was done by drawing out the course participants' prior knowledge and expectations, which gave me (as the facilitator) an insight into their frames of reference. The authentic tasks were experienced as disorienting dilemmas which prompted participants' critical reflection about their research studies and the role of the software in their data analysis.

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