Teaching Qualitative Research Methods in Media and Communication: The Benefits and Limitations of Digital Learning Objects

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Abstract

Teaching qualitative research is often hampered by student uncertainties around how to apply methodological knowledge in practice. Digital learning objects (DLOs) may offer a solution to this problem, although they also come with limitations. This study assessed the student perspective on the strengths and limitations of six qualitative analysis DLOs in the field of media and communication. Drawing from a thematic analysis of 527 written student reflections on the use of these DLOs in learning practices, this paper found that DLOs were helpful in clearing doubts and cementing knowledge. Furthermore, they motivated students by increasing self-regulation and by providing a new learning environment that was perceived as showcasing "learning how to learn." However, the DLOs also introduced new anxieties, destabilized the relationship between lecture and tutorial, and were not successful at fostering student reflexivity in relation to the research process. These findings provide practitioners with pedagogical insight into using DLOs to improve the learning experience of qualitative research.

Keywords

reusable learning objects, digital learning environments, online teaching and learning, student experience, teaching qualitative research

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Teaching qualitative research is often hampered by student uncertainties around how to apply methodological knowledge in practice. Digital learning objects (DLOs) may offer a solution to this problem, although they also come with limitations. This study assessed the student perspective on the strengths and limitations of six qualitative analysis DLOs in the field of media and communication. Drawing from a thematic analysis of 527 written student reflections on the use of these DLOs in learning practices, this paper found that DLOs were helpful in clearing doubts and cementing knowledge. Furthermore, they motivated students by increasing self-regulation and by providing a new learning environment that was perceived as showcasing "learning how to learn." However, the DLOs also introduced new anxieties, destabilized the relationship between lecture and tutorial, and were not successful at fostering student reflexivity in relation to the research process. These findings provide practitioners with pedagogical insight into using DLOs to improve the learning experience of qualitative research.

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Introduction

Teaching and learning qualitative research are often experienced as difficult. Faculty must manage and respond to students' feelings of uncertainty and anxiety surrounding the analysis process, which is further complicated because students are still building their knowledge of conceptual vocabulary and debates in the social sciences field (Raddon et al., 2009). Students struggle to reconcile prior understanding of scientific research as an "objective" process with the perceived subjectivity of qualitative analysis (Cox, 2012; Hein, 2004; Kalpokaite & Radivojevic, 2019; Locke, 2019; Roulston & Shelton, 2015). Whereas some find it difficult to start the analysis independently, others are confused by the interpretive nature of qualitative research, erroneously concluding that "anything goes."

On the teaching side, introducing students to the process of qualitative research is often achieved in the context of a course – which, as Delyser (2008) notes, is insufficient for achieving an in-depth understanding of the "how to's" of analysis. Furthermore, faculty remain epistemologically divided on the most suitable way of teaching qualitative methodology: where some prioritize systematicity and transparency in data collection and analysis (the "conventional social science" approach), others prioritize research as a form of breaking down the status quo, emphasizing critical and postmodern epistemologies (the "post-modern/ discursive" approach; Eisenhart & Jurrow, 2011). The general lack of empirical research shedding light on successful ways of tackling these difficulties in teaching and learning about qualitative methodology is not helping either. Existing literature on teaching qualitative

research often offers personal insights from practitioners at the expense of pedagogically informed approaches to empirical evidence (Drisko, 2016; Eisenhart & Jurrow, 2011).

This paper contributes a pedagogically informed approach to designing and using digital learning objects (DLOs) for the teaching of qualitative methods. Where previous research on the use of online tools in teaching qualitative research methods is scant (Snelson, 2019), this paper contributes the student perspective on the advantages and disadvantages of a pedagogical intervention reliant upon digital tools designed to facilitate course-based active learning (i.e., learning by doing; Drisko, 2016). This intervention consisted of six DLOs with built-in analysis tools integrated in an undergraduate qualitative research methods course in a media and communication program. After a brief review of the promises and limitations of DLOs, we outline the principles, structure, and context of our pedagogical intervention. Then, based on a thematic analysis of N=527 assignments discussing students' use of the DLOs in their learning practices, we answer the following research question: what are the advantages and limitations of DLOs as experienced by students during their learning process? Our findings indicate students found the design of our DLOs useful in moving from simple to more complex knowledge and skills, but also motivating (by improving their view of the learning environment and by fostering self-regulation). However, the DLOs also introduced new anxieties around doing qualitative research, destabilized the relation lecture/tutorial, and did not entirely succeed in fostering student reflexivity on the research process. Given the reusable nature of the DLO recipe, but also of the DLOs themselves, these findings provide faculty with pedagogically informed insights into the design and (re)use of such digital tools in teaching qualitative methods.

The Promises and Limitations of Digital Learning Objects

Part and parcel of the increased digitalization of education, DLOs are "small, self-contained, re-usable and pedagogically complete structure of learning content… attempting to deliver learning experiences" (Topali & Mikropolous, 2018, p. 257). While they may include lecture video clips and quizzes, DLOs vary greatly in terms of content and format. Clyde (2004) lists various types of items such as "lessons (a combination of 'text, graphics, animation, audio, questions, and exercises'), articles, case studies, mentored exercises, discussion boards, role-play simulations, software simulations, research projects, performance tests" (para. 4).

An important consideration in approaching DLOs is that pedagogical assumptions underpin their design and subsequent use, leading to different possible combinations. Krauss and Ally (2005) distinguish between instructivist (or behavioristic) models that regard learning as information/knowledge transmission, and constructivist ones in which learning is understood as a contextualized experience within which students actively transform their own understanding. DLOs informed by the instructivist model tend to focus on conveying information in an accessible and easily digestible format as well as on opportunities for student testing, where those informed by the constructivist model lean towards activities facilitating contextual learning through interaction and student engagement in the development of knowledge (Haughey & Muirhead, 2005). Where the instructivist model is often understood as a drill-and-practice approach, the constructivist model is viewed as enhancing transferrable skills, such as problem-solving (Papastergiou & Mastrogiannis, 2021). In their review of DLOs, Haughey and Muirhead (2005) found that most designers employed multiple strategies bringing together instructivist and constructivist elements, such as: direct instruction, scaffolding of knowledge and skill, extension (from online to offline, for example by printing something for later use), use of multimedia, use of storytelling, high interactivity and/or simulations, and, learner control (for example, through the use of buttons or the opportunity to redo certain steps).

Scholarship on DLOs outlines several advantages such as "reusability, granularity, discoverability, accessibility, interoperability, adaptability, durability, generativity, and manageability" (Mallidis-Malessas et al., 2021, p. 3). Some of these advantages have to do with the usefulness of DLOs in teaching. From a learning perspective, DLOs have been discussed in relation to increased engagement with course material through the use of things such as instructional videos (Gönül & Solano, 2012; le Roux & Nagel, 2018) or visualizations (e.g., diagrams, animations, images) that can be easily revisited or replayed (Henderson et al, 2017). This may be particularly important in the case of differently-abled students for whom multimedia simulations can facilitate the visualization of abstract phenomena (Mallidis-Malessas et al., 2021). DLOs can also be advantageous insofar as they offer students a possibility to track their learning progress, as well as more efficiently monitor and regulate their learning in innovative and engaging ways – for example, via gamification of the online learning environment (see Chen et al., 2019; also, Bovermann et al., 2018).

DLOs also prove beneficial to enhancing student comprehension and reinforcing classroom learning, particularly in cases where specific skill development is concerned. A study by McGuinness and Fulton (2019) revealed that when e-tutorials were incorporated into undergraduate and postgraduate digital literacy skills courses, students in fact preferred a blended learning model to face-to-face learning alone. The incorporation of DLOs into face-to-face courses provides an effective tool for students to learn the practical, step-by-step application of a discipline through a scaffolded learning process. Similarly, in a recent study by Bernacki et al. (2021), math and science undergraduate students who completed digital skills training not only outperformed a control group on final examinations, but also in their use of academic resources and application of self-regulation strategies (e.g., planning, self-monitoring). Digital learning, as a supplement to classroom-based learning, has also proven a more fruitful and productive method of preparation for face-to-face meetings, with postgraduate students reporting improved learning results and overall satisfaction with their learning experience (Westerlaken et al., 2019).

DLOs also come with diverse challenges. Some of the most common impediments for student learning include self-regulation challenges (e.g., procrastination, poor time management, diminished motivation due to isolation) and technological challenges (e.g., technological glitches and difficulties, varying degrees of digital literacy, poor understanding of instructions; Rasheed et al., 2019). In a similar vein, a sense of anxiety towards online learning in general may also pose a threat to the learning experience (Roulston et al., 2018), as well as undermine students' capacity for self-regulation, particularly where students are highly anxious about their performance (Broadbent & Fuller-Tyszkiewicz, 2018). From a learning perspective, DLOs may be perceived as superfluous or a burdensome supplement to an already demanding face-to-face course. Increased cognitive load could result in what Feldon et al. (2019) describe as a "motivational cost:" the higher the cognitive load, the more likely that students' willingness to engage with a learning task be diminished. It is thus crucial for students to be able to draw explicit connections between what they are learning in the virtual space and in the classroom and distinguish how the various components fit together (McGuinness & Fulton, 2019); in other words, the content should be thoughtfully integrated, complementary, and relevant rather than redundant.

Finally, the question of the impact of DLOs on teaching and learning is investigated by scholarship focused on evaluation practices (Papastergiou & Mastrogiannis, 2021). While assessing impact falls outside the scope of this paper, it is important to note that such an evaluation should not be limited to student learning (e.g., grades or perceptions of intellectual development), but should also include input from other stakeholders, such as educators or subject experts (Papastergiou & Mastrogiannis, 2021). This paper's contribution is thus restricted to the student perspective collected at a particular moment in time (i.e., during a

summative, student-centered evaluation where students who have used the DLOs were asked to comment on the perceived usefulness of these objects for their own learning practices).

The Design and Implementation of the Qualitative Research Methods DLOs

This section first outlines the context within which the DLOs were developed. It then presents their design and implementation. The DLOs discussed here have been developed by the first author in the Qualitative Methods in Media and Communication second-year undergraduate course in the International Bachelor of Communication and Media (IBCOM) at Erasmus University Rotterdam (EUR). The second author worked as the student research assistant in this project, facilitating the implementation of the modules within the learning management platform (Canvas) and the summative evaluation process.

The Course Context

We approached the design and implementation of DLOs from a mix of instructivist and constructivist orientations (Haughey & Muirhead, 2005; Krauss & Ally, 2005; Papastergiou & Mastrogiannis, 2021). While we sought to empower students as responsible, autonomous, and reflexive learners (Slevin, 2008), we also knew our students needed clear and accessible information on the analysis methods introduced in the course to enable them to further develop their own understanding. Furthermore, given the institutional culture of assessment and the constraints on the types of assessment possible in the course, we felt a drill-and-practice dimension was also necessary to prepare students for the final exam.

Six DLOs covering the most used methods of data analysis in the field of media and communication (i.e., rhetorical, semiotic, narrative, thematic and discourse analysis, and constructivist grounded theory coding) were designed for and implemented in a second-year mandatory course on qualitative research. The course consists of a combination of face-to-face weekly lectures and small-group tutorials. The undergraduate program is taught in English and brings together an international group of students and faculty. Diversity within the student population also pertains to different educational backgrounds, as the course also caters to the pre-master program designed for students who have followed a professional education track and need to upgrade their education to enroll in a master's program.

Despite differences in relevant knowledge, skills, and cultural competencies, students are familiar with the assessment culture of our program by the time they join the second-year course on qualitative research. This culture emphasizes the importance of graded assignments. In the context of our course, assessment is done across several assignments, including a written essay (15% of the grade), a group research proposal (20%), a mid-term quiz (15%), and a final exam (50%). Due to its weight and timing, the final exam (combining multiple-choice with a few open-ended questions) becomes an important driver of student learning. The structure of the term and of the course create another set of challenges: for students, the eight weeks-long terms (followed by an exam week) heighten the importance of planning and self-regulation. For lecturers, the short term means that fitting in the scope of the content (both data collection and data analysis) constrains the ability to practice qualitative analysis and interpretation. This means that faculty have only about three and a half weeks to go over the six most common qualitative analysis methods in our field and our programs.

Finally, by the time our students take the qualitative research course, they have already developed a positivist approach to scientific research. Scaffolding is an important aspect of our program's curriculum, ensuring students can deepen their research knowledge and skill across time (see Figure 1). In line with prior observations on this type of methodological scaffolding (Cox, 2012; Hein, 2004; Kalpokaite & Radivojevic, 2019; Roulston & Shelton, 2015), students

first learn about methodology through the prism of quantitative methods. This immersion in the positivist paradigm of scientific research orients them to regard qualitative research as subjective, potentially biased, and/or lacking objectivity.
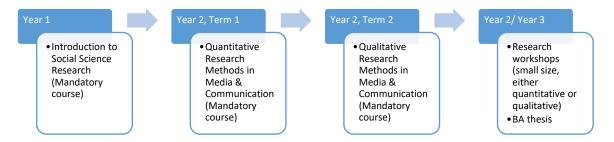

Figure 1
The scaffolding of methodological knowledge in the International Bachelor in Communication and Media (IBCoM), Erasmus University Rotterdam.

Design Considerations

Informed by the context outlined above, we conceptualized the DLOs as a pedagogic hook (Lewthwaite & Nind, 2016) to stimulate active learning about the method at hand and give faculty more time to address ambiguities and provide further opportunities for practical applications. Integrated within the weekly content as required preparation prior to the lecture and the tutorial, the DLOs were designed with four considerations (central to teaching qualitative research; see Drisko, 2016) in mind:

1. **Incremental scaffolding**, progressing from knowledge forming to practical application and reflection, thereby facilitating the mastery of tangible research skills (Kilburn et al., 2014).
2. **Simple and concise knowledge**, offered via an in-house produced reading and expert videos that were carefully scripted with an eye to consistency, length, and clarity (e.g., avoiding jargony language, making use of visuals to summarize key points, etc.).
3. **Interactive and practical learning**, whereby students first applied the knowledge gained in the course on their own, then compared their process to that of an expert. Moreover, the integration of expert videos served to consolidate and clarify the key points of the method, as covered in the readings, as well as exemplify a "real world" application of the method. Indeed, blending learning-by-doing and expert knowledge have been proven successful in previous studies by rendering the research process visible (Keenan & Fontaine 2012).
4. **Reflexivity**, as each DLO concluded with a personal reflection meant to prompt students to reflect on the experience but also to learn from their peers (the reflections were visible to students in the same group). This was assumed to orient students towards a deep approach to learning by encouraging comparisons and self-reflection (Biggs 1979; Cranton 2016; Cuthbert 2005; Kilburn et al. 2014).

The DLOs were designed to progressively move students from knowledge-gaining to practical activities, modeling examples, and moments of reflection (see Figure 2). This was

achieved by providing a learning-by-doing environment for students to practice the process of analysis independently (Nievelstein et al., 2013; van Gog & Rummel, 2010; van Gog et al., 2011; Wagner et al., 2019). After being instructed on how to navigate through the DLO (stage 1), students were provided with theoretical knowledge (stages 2-4) via a required reading written by the course coordinators and a short expert video (i.e., another faculty member or a PhD student within the faculty explaining how this method fit within the context of their own research project). The reading was broken into two separate sections, with students asked to watch the expert video in between. This was done to facilitate attention and engagement in an online environment by varying the formats (text/video) and the sources of expertise (course coordinators/expert). This part of the DLO was followed by a formative assessment moment (stage 5), where students were given the opportunity to test the knowledge thus gained via several multiple-choice questions.

In stages 6-8, students were asked to apply this theoretical knowledge to analyze a snippet of data linked to the research project discussed by the video expert. Application was guided with a set of questions attached to specific element of the data snippet (e.g., words, phrases, images). For example, in the thematic analysis DLO, students were presented with a snippet of data from an economic report on the value of live music in Victoria, Australia. They were provided with the definitions of two sensitizing concepts and, for each paragraph, were instructed to come up with one to three codes that captured the values associated with live music in the data. Students submitted their codes, which other students could view for comparison and reflection. Once students had completed the activity, they watched a video of the expert explaining how they would analyze the same data snippet, thus allowing them to immediately compare and contrast their analysis with that of the expert. The last video of the DLO (stage 8) featured a couple of additional tips on the use of the method provided by the expert. In the end, students were asked to contribute their thoughts on the similarities and differences between their own analysis and that of the expert in a Discussion Forum (stage 9). A PDF of the readings was made available for download at the end of the DLO (stage 10).
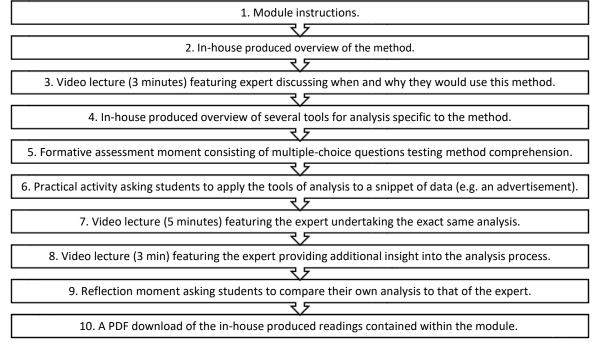
1. Module instructions.
2. In-house produced overview of the method.
3. Video lecture (3 minutes) featuring expert discussing when and why they would use this method.
4. In-house produced overview of several tools for analysis specific to the method.
5. Formative assessment moment consisting of multiple-choice questions testing method comprehension.
6. Practical activity asking students to apply the tools of analysis to a snippet of data (e.g. an advertisement).
7. Video lecture (5 minutes) featuring the expert undertaking the exact same analysis.
8. Video lecture (3 min) featuring the expert providing additional insight into the analysis process.
9. Reflection moment asking students to compare their own analysis to that of the expert.
10. A PDF download of the in-house produced readings contained within the module.

Figure 2
DLO structure

The instructivist ethos of the DLO (manifested primarily in stages 2-5 and 8, and focused on introducing the details of the method) was blended with a constructivist one (manifested primarily in stages 6-7 and 9). However, the mix of formats (text/videos) and stages within the DLO can also be understood as a form of interactivity, as students had to engage in different activities (read, watch, write, navigate online) and different cognitive processes (remember, understand, analyze, apply, evaluate). Each DLO mixed hands-on practice, expert knowledge, and self-reflection in an effort to elucidate abstract concepts and bring theoretical knowledge to life. In line with previous research suggesting the importance of active engagement with content in online environments (Blummer & Kritskava, 2009; Haughey & Muirhead, 2005), the DLOs made use of interactive techniques such as automated quizzes, interactive tools from the FeedbackFruits pedagogical tool suite for higher education (e.g., interactive document, interactive video), and discussion forums. These tools allowed us to elicit and archive student input. On average, each DLO took students around one hour to complete.

After successfully piloting one DLO, all six DLOs were incorporated into the course, with the lecture and the tutorial adjusted accordingly. The format of the tutorial was adjusted to start off with student input from the DLO. In class, students were provided with a similar but new data set and asked to analyze it, informed by what they had learned in the DLO. We announced the DLOs as "required preparation" and included them as material to be tested in the final exam.

Methodology

To answer the question of what advantages and limitations of DLOs were experienced by students during their learning process, we collected a set of N=527 student assignments in weeks six (278 assignments) and eight (249 assignments) of the term. The assignment, entitled "Reflective Response" (approx. 100 words), was part of the overall participation grade in this course. The course guide instructed students to summarize their learning practices up to that point in the course, assess their usefulness, and indicate what they could improve over the following weeks. In these two weeks, students were also explicitly asked to discuss the way in which they had integrated a set of digital modules into their learning routine.

Data collection was done ethically and approved by the faculty's ethical review board. To ensure an ethical data collection process, students were made aware via the course guide and assignment description, as well as during lectures and tutorials, that this course was the object of a research project focused on blended education. Students were informed of their right to withdraw their information from the data pool for whatever reason (no student withdrew) and that data analysis would only take place after final grades had been released. Assignments were anonymized before analysis and were not linked to individual biographies.

The assignments were analyzed thematically (Braun & Clarke, 2006). Given the large amount of data, we first analyzed a random sample of 10% of assignments in weeks six and eight respectively, by coding and clustering advantages and disadvantages of DLOs as discussed by students. The unit of analysis was an idea (meaning codes could be attached to different segments of text, from phrases to several sentences). We coded in-vivo (i.e., using terms and phrases chosen by students). For example, a reoccurring code was [the importance of] "being forced," which was captured variously in students' reflections as "[the modules] force you to read," "[the modules] force you to keep up," and "[the modules] force you to engage with the content," among others. Codes were recorded in a spreadsheet, then clustered in a table according to what students liked about the modules, what students did in relation to the modules, and what students found challenging or experienced as a barrier in relation to the

modules. This process led to the development of four primary themes: putting theory into practice, improved learning practices, facilitating learning, and anxieties and challenges.

After identifying these themes, we checked them against the remaining data to mitigate the possibility of overlooking possible outliers. By the end of this process, all 527 student assignments were used to strengthen the existing themes (no additional ones were identified during this close reading, but we identified additional codes nuancing existing themes).

Student Perceptions of the DLOs' Impact on Their Learning Practices

Students were enthusiastic about the pedagogical intervention, feeling that the DLOs helped them put theory into practice, forced them to engage with the course content more efficiently, and showcased a learning practice. Nevertheless, even though these aspects appeared to alleviate some of the anxieties surrounding engagement with the qualitative analysis process, the DLOs also introduced new ones.

Putting Theory into Practice: Clearing Doubts, Cementing Knowledge

Students perceived the DLOs as a more accessible means of opening up the analysis process. In that sense, the DLOs assuage students' "fear of the unknown" in approaching research methods (Balloo, 2019; Howard & Brady, 2015). Prior research has found that providing students with "step-by-step guidance" (Balloo, 2019) or "how-to guides" can clarify expectations and structure the research process, thereby reducing student anxieties and enhancing self-efficacy (McGrath et al., 2015).

Clarifying the process of analysis was one of the most cited benefits of completing the DLOs. The opportunity to practically apply theory and try one's hand at qualitative data analysis led to a deeper understanding of the various methods' particularities. As one student explained: "I feel like [the DLOs] help even further to learn concepts as you are required to apply them at the end of the readings onto concrete examples." Students also reported the combination of visual, written, and practical components – complemented by peer insights – as a formula for learning the method more concretely by approaching it from multiple angles. The expert videos were an oft-cited feature of the DLOs that increased students' confidence in their own analysis process by clarifying doubts and addressing lingering questions from the readings. As one student reflected:

> I believe the digital modules were a welcome addition to the way I study for this course, as they are much more consumable for our generation. I often have problems maintaining prolonged focus on the readings, and often get tired or lost in them. However, taught like this, the concepts felt much easier to grasp straight away, and I was also more motivated to complete the modules, due to the variety of tasks and the feeling that I am actually learning the concepts straight away, as I see them explained with examples and applied in a real-life context.

Indeed, students liked that they could practice data analysis and then immediately have an expert example against which to compare their own work, as this helped alleviate their anxieties concerning how to *do* qualitative research. Another student echoed this view, explaining that "[the digital modules] enable concepts to be applied as they are being learnt, allowing doubts and uncertainties to be cleared right away, and knowledge to be cemented."

One surprising student perception was that the DLOs were forms of pre-digested content, fleshing out the method in question and providing memorable content. One student

credited this to the combination of activities, videos, and visuals. Another student perceived the readings to be shorter altogether:

> Since the texts are shorter and immediately followed by an explanatory video, the content is much more clear from the start and it helps in understanding the concepts in a different way since another perspective is offered in the video.

From our perspective, this was not the case as we used exactly the same in-house produced texts and content that we had developed in the context of traditional lecture/ tutorial course format. Similarly, students with learning difficulties – most notably, a couple of students who identified themselves as dyslexic – felt the DLOs offered a reprieve from the usual studying-by-reading. Furthermore, even though the learning flow was sequenced into reading/taking a quiz/working with an example/writing a reflection, the DLOs still relied primarily on reading. Yet, the DLOs were, at the time, a novel practice. Indeed, the DLOs were variously described as "surprisingly fun," "refreshing," "interesting," and "enjoyable."

The convenience of the digital format and the sequence of elements primed students to feel better about their own comprehension of the content and they advanced various explanations for this: faster learning, independence in studying, and/or clear structure. Using the terms "active learning" (in relation to DLOs) versus "passive learning" in relation to the traditional lectures/seminars format, students felt the DLOs enabled a feeling of being "in control" of the learning process. This notion was most succinctly captured in the following reflection: "Qualitative Methods is one of the first courses where I actually felt like I was in control of everything, instead of the course 'controlling' me."

Improving Learning Practices: The Importance of "Being Forced"

Self-regulated learning is particularly relevant to online learning contexts offering students higher degrees of autonomy in the consumption of content (Lehmann et al., 2014). While viewing learning as an activity that one can engage with proactively and in a self-regulated manner versus a discrete, instruction-led event can be an important motivator for students (Zimmerman, 2001), autonomy can also lead to procrastination and hamper self-regulation (Broadbent & Fuller-Tyszkiewicz, 2018). Our students were enthusiastic about the self-paced learning style of DLOs, often described as improving one's own learning routines, resulting in a greater sense of confidence in their ability to manage the course and its contents. However, a sense of "being forced" (or, from our view, of providing a reasonable structure for navigating the modules and timeline for completing them) was also perceived as helpful. This echoed prior suggestions that blended education often brings students logistical benefits (Selwyn & Aston, 2017). As one student explained:

> To be completely honest, my learning routines have not been the best. I usually skim through the material before a tutorial. My good intentions have not happened, sadly. The digital modules really helped, though! It kind of forces me to learn and understand the material. I would like it if we would do more of them, since my self-discipline is very low.

For some, the modules were an activator of the learning process, a complement to their study routine, and/or a consolidating tool for exam revision. This led to a perception of the modules as an efficient form of learning. In this context, the notion of being "forced" came up repeatedly, albeit from a positive perspective: completing the modules was described as

mitigating procrastination. The modules provided the impetus to actually do the readings before class, rather than put them off for later, or not do them at all:

> Not only that I am forced to read and study the materials for the upcoming week […] as an unorganized student, who works with random sparks and does not really work with routines, the online modules help create concrete agendas and organize my study schedule and materials, and hence, forces me to study. Ever since the online module started I have been able to keep up with the weekly materials and avoid being lost in tutorials.

The modules were also conceptualized as a preparation exercise for the week ahead, or what one student called "the core of my pre-study [routine]." Some felt the modules helped them better prepare for the exam, while others appreciated the weekly "forced" engagement with the course material. This meant students came to lectures far more prepared than they would have been otherwise, which resulted in enhanced ability to absorb material covered by the professor. In turn, this bolstered some students' orientation towards forming opinions and, as one student put it, "[being] more critical."

Facilitating Learning: Templates, Screenshots, and Paused Videos

While students may be aware that they are working inefficiently, they maintain the status quo due to comfort and/or lack of exposure to alternatives (Balloo, 2019). Research has shown that this is especially the case in highly autonomous online learning environments, where self-regulated learning skills are essential (Pedrotti & Nistor, 2019; Wandler & Imbriale, 2017). Unsurprisingly, it is thus crucial that students are motivated to actively participate in their learning process (Zimmerman, 2001). In our pedagogical interventions, students saw the DLOs as a value-added tool helping them to structure and streamline their learning. As one student explained: "I was able to digest the information slowly and more in-depth. […] Overall, I believe I have enhanced my learning routines with the modules and learned more than by just reading an article and going to a lecture." This sentiment was echoed by others who felt that completing the modules had made them more active (rather than passive) learners. Indeed, learning how to learn *efficiently* is an ongoing and occasionally nebulous process, and students felt DLOs provided some guidelines for this.

The expert videos in the DLOs used key concepts or bullet point lists as visual support, priming students to focus on distilling the main ideas. As one student reflected: "[The] digital modules contain bullet points and important information, that breaks all the course load down into smaller chunks." To this end, some reported using the DLOs as a template for taking notes and writing summaries. They felt the bolded key concepts in the layout of the readings, graphics, text boxes, bullet point lists, and expert videos with embedded slides proved conducive to gleaning the "most important" information from the modules. Others took screenshots, saving them for final exam preparation. The ability to pause and re-watch videos was a welcome benefit, with many students remarking on the appeal of revisiting the videos, pausing them to take notes, and using them later in preparation for the final exam.

On a meta level, the DLOs thus guided the study process. Students felt more comfortable in understanding what was salient in terms of the content. The DLOs' scaffolding was also noticed by students who felt this made the content more memorable, with the DLOs facilitating recall at a later date:

> The digital modules have now become an important way to recall theory. When doing class activities, I often find myself thinking back to the modules to

remember a specific definition or method of analysis. Especially the activities, which for example included the practicalities of coding, have helped me during the class activity. In addition, I find myself being more comfortable reading the entire literature prior to starting a module instead of during the module. I suppose that it gives me a full picture of the theory and helps me to focus on the concepts that are unclear to me with the help of the videos.

Furthermore, the scaffolding of knowledge/skill undertaken by the modules was also conceptualized by students as a barometer of their own progress and understanding of the course material. Reflecting on their performance on the analysis activities and multiple-choice quiz allowed students to use the modules as a tool for testing themselves and gauging their level of comprehension. As one student enthused:

The modules integrated well in the learning process since it clearly explains how to use certain analysis. It was great to be able to practice the analysis and then to test myself. For example, now I know that I have to focus more on [discourse analysis] since what was my weakest quiz!

Finally, some students remarked on the added benefit of being able to read and reflect upon other students' comments and reflections. As one student put it: "the sense of community is very important when learning new theories/concepts because it helps me acquire new perspectives and understand things that were still blurry in my mind."

Challenges and Barriers: Anxiety Returns

In spite of the overwhelming perception that the DLOs enhanced the learning of qualitative methods, anxiety still creeped in. While some students were not comfortable with being asked to apply knowledge before the lecture, for others, the DLOs were simply too difficult. As one student explained:

Most of the digital modules are great, but the overall difficulty of them is still a bit high for me. I'm glad that there are practical activities in the modules for me to practice those analysis methods, which I couldn't fully understand only through those conceptual languages in the reading. However, after I finished the whole course, I still don't feel confident to conduct qualitative research by myself, and I even still haven't read many classic cases about different types of qualitative research.

In addition to persisting anxiety concerning how to independently conduct qualitative research, some students worried about the extra work that the DLOs entailed. As one student admitted: "The fact that these modules are mandatory is both a push to study for the course material as well as an impulse for stress, as there are so many things we have to fit into our schedule." The anxiety of having to deal with yet another course element is not surprising, as during their first university years, students often have to deal with competing requests on their time (Nathan, 2005). Furthermore, time management is an important challenge to self-regulation (Rasheed et al., 2019). Thus, the perception that the DLOs add yet another thing to do for a course can understandably increase feelings of anxiety around time management.

This time management-related anxiety was compounded by week seven of the course when students had to go through three DLOs in one week. This sentiment was aptly captured by one student who explained: "The digital modules were helpful at first, but at one point there

were three modules to do, which was too much and made it boring." By the end of the course, the similar structure of the DLOs had also led some to believe they were a tad repetitive, which compounded the burden of having to complete multiple modules in one week.

Somewhat related to this, another criticism was that the DLOs made the lecture/tutorial seem redundant. To this end, one student surmised that completing the modules might lead to paying less attention in lecture due to being overprepared, while another admitted to feeling no need to attend lecture altogether:

> [B]ecause I have done my reading and also have my practical experience with the digital module, I no longer feel the need to attend lecture anymore, as I see the lecture is rather overlapping with the reading and the practical activity we did for the digital modules.

While several students shared this sentiment, others appreciated the opportunity to clarify and sediment knowledge and skill during lecture and tutorial activities. Indeed, while some students acknowledged that repetition is fundamental to recall in the learning process, there is a fine line between repetition and redundancy. This feedback thus underscores the point that blended learning components should be neatly imbricated in a manner that is complementary (McGuinness & Fulton, 2019).

The sequencing of knowledge-gaining and problem-solving was also a potential source of anxiety. Echoing the theory that being shown an example first, and then being provided with a problem to solve is an optimal path to learning (van Gog et al., 2011), some students resented being asked to engage in a practical activity before the lecture. This, they felt, meant they had insufficient knowledge to tackle the practical activity in the DLOs. Being asked to do an activity somewhat "blindly" (i.e., before viewing the expert's analysis of the same data) was not a comfortable request for all. Some students suggested that they would have liked to attempt the analysis again after watching the expert's example:

> I think the digital modules do contribute to learning in this course. Only I doubt whether it helps to have to complete the assignments that are included in them before the lecture. I found the assignment for semiotic analysis quite difficult. I think it would have been easier if it had already been explained.

In other cases, anxiety crept in when students felt they did not understand, either because they did not have sufficient context for understanding the data or because the level of difficulty was too high. For instance, an excerpt of data dealt with the Bosnian War; students complained that analysing such data without knowing about this war was challenging. Other students felt that concepts were still fuzzy and sometimes distinguishing between different concepts was difficult, particularly in light of how many methods students must learn about in the span of eight weeks. As one student explained: "I am starting to feel a bit confused and overwhelmed because there are many methods to collect and analyze data. It is becoming difficult to keep these concepts apart and [apply] them in a sensical way."

Finally, reflection is germane to learning research methods; being able to critically reflect on one's learning goes hand-in-hand with competency (Kilburn et al., 2014). Yet, the reflection piece of the DLOs proved to be the weakest component from the students' point-of-view. At the end of each DLO, students were asked to identify one difference between their analysis and that of the expert, as well as the source of this difference. Some common critiques of the reflection were that it was repetitive or redundant, with some students feeling that they were somewhat superficially regurgitating the same reflection week after week. Others felt that there were few differences between their own analysis and that of the expert and therefore did

not understand the need to reflect about this experience. In contrast, when differences did arise, some felt that reflecting on them was simply unfair: "I'm a student! I mean, I just heard about this [method] for the first time and [the experts] have been working on it for years probably." At the same time, students appreciated that the reflection was *guided*, meaning they were given specific instructions on what to reflect upon. This was described as preferred to simply being left to reflect without any prompt, thus alleviating the anxiety of figuring out how to go about the reflection.

Discussion

The student perspective on the DLOs provided us with the opportunity to evaluate our initial design principles. Our findings support existing pedagogical advice of blending instructivist and constructivist approaches to learning in the design of learning environments (Haughey & Muirhead, 2005; Krauss & Ally, 2005; Papastergiou & Mastrogniannis, 2021). The incremental scaffolding of our DLOs, the practical learning approach, and the explicit drive to keep the content simple and concise were mirrored in the benefits outlined by our students. Not only did students explicitly identify these design principles, but they also felt these aspects of the DLOs supported their own learning practices. Our findings show that the sequencing of our DLOs (from reading to video expert to formative assessment to practical activity etc., see Figure 2) was perceived by students as a means of unpacking the black box of doing qualitative analysis and making methods more concrete. Confirming prior findings suggesting a blended integration of DLOs into courses is particularly useful for skill development (Bernacki et al., 2021; McGuiness & Fulton, 2019; Westerlaken et al., 2019); our study demonstrates that this is also possible in the context of teaching qualitative research. Against the background of epistemological differences between conventional and postmodern/discursive approaches in teaching qualitative research (Eisenhart & Jurrow, 2011), our DLOs and the recipe behind them demonstrate that systematicity and transparency in research (a signpost of the conventional approaches) can be combined with a postmodern/discursive interpretation whose "pedagogical intent is not to produce answers to the questions but to explore them for what they teach about the limits of research practice and the multiple ways of producing and being produced by research" (Eisenhart & Jurrow, 2011, p. 702). Our DLOs provided step-by-step instructions for students to apply the method on their own, but then to also understand why and how a particular expert would do it. It is the variety of experts in our DLOs and the explanations they provide that showcases this postmodern/discursive interpretation ethos in our view. Whether student feelings about what helped them learn also resulted in a better understanding of the process of qualitative analysis is a different matter – and outside the scope of the empirical data reported in this paper.

However, a positive view of the learning environment matters: student perceptions of support and workload impact student engagement (Xerri et al., 2018). The DLOs were perceived as a form of support, as students often pointed out how they made the material "easier" and allowed them to revisit the course content. Our teaching team constantly emphasized in their communication with students that the goal behind the DLOs was to help our students better understand the course content. In line with prior research, our findings confirmed that students perceived well-designed DLOs as more efficient and convenient forms of learning. In turn, such feelings have been linked with higher satisfaction in a learning context (Fisher et al., 2021). Indeed, students in our study commented on the "refreshing" and "surprisingly fun" aspects of working with the DLOs. Furthermore, our findings show that the DLOs also taught students how to approach learning, leaving them feeling not only more "efficient" but also more "in control" of their own practices. These findings show that DLOs

can foster a positive learning environment when combining web-adapted content with convenience and novelty.

Our last design principle – reflexivity – proved more troublesome. Although reflexivity is a cornerstone in research methods (Kilburn et al., 2014), students found the reflection component of the DLO to be redundant or useless. This is not to say they did not engage in reflection but that being explicitly asked to do so repeatedly became rather boring. Our initial assumption that an open discussion forum would orient students towards learning from peers and self-reflection (Biggs, 1979; Cranton, 2016; Cuthbert, 2005) did not work, and students seemed to invest the least amount of effort in this component. This may relate to the assessment-oriented culture in our program, prompting students to value understanding of course content in relation to applying it in assignments. In that sense, the course assignments did not provide much room for self-reflection. Furthermore, the perceived clarity of the DLOs, often described (to our surprise) as offering "pre-digested" content and step-by-step instructions for applying it, could actually work against the uncertainties entailed in reflexivity. This could be alleviated by better connecting these moments of solicited self-reflection in the DLO with the learning goals of the lecture/tutorial, showcasing when and how reflexivity enhances analysis and interpretation.

The student perspective provides valuable insight into how the DLOs addressed the problems prompting the pedagogical intervention; namely, to counter the perception of qualitative analysis as subjective and unsystematic, and insufficient opportunities for knowledge sedimentation and application. The recipe behind our DLOs facilitated both understanding and application, while also bringing about some unexpected benefits, such as learning how to learn and helping student self-regulation processes. Importantly, modelled examples during the learning phase for our novice students resulted in the perception of improved outcomes, with less cognitive effort involved in learning key concepts and their practical application. However, anxiety about qualitative analysis remained, suggesting that such anxiety may have to do not just with the process of qualitative analysis itself, but also with other factors, such as the desire to perform well and to be perceived as smart by faculty and peers alike, the juggling of work/life balance, and/or insufficient cognitive skills for this type of course content. In particular, the relationship between the DLOs and the lecture/tutorial and the usefulness of researcher reflexivity requires further attention. Explicitly centering the lecture/ tutorial on shifting student attention from subjectivity/objectivity in analysis to the importance of systematicity and transparency could help our DLOs better respond to the drivers of our pedagogical intervention.

Conclusion

This study has introduced a recipe for designing DLOs for teaching qualitative research, then presented evidence on the student perception of the advantages and disadvantages of these DLOs. Based on this evidence, our formula appears to have worked successfully – with some caveats. This evidence confirms that well-designed DLOs need to balance learning as information with learning as contextualized experience. We found that such DLOs increase engagement with course material, help students unpack the "black box" of practical application, and help students learn how to learn. Inevitably, not all is rosy about DLOs, as they can also introduce new problems and anxieties. For faculty, the most important challenge is that of rethinking the relationship between lecture, tutorial, and DLO. Furthermore, DLOs risk being perceived by students as "extra work" or as encouraging procrastination (with students delaying going through them because they remain available until the end of the course). An important logistical barrier here is the tension between, on one hand, the cost of these DLOs (which remain labour-intensive) and, on the other hand, their perceived novelty

(the "cool" effect) and shelf-life (no matter how well-designed, the fast-changing "digital aesthetic" of the day will inevitably affect the way students perceive them). Despite these caveats, our formula for DLOs – sequencing, simplicity, and practical application – worked. The combined practical activity/expert explanation of the same data set proved useful for clarifying the application of method-specific tools during the process of analysis.

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