

Implementing Commonwealth Digital Education Leadership Training in Action (C-DELTA) with Pre-service Teachers (PSTs) in New Zealand

Introduction

The proliferation of digital technologies (DT) has altered the landscape of education. With DT redefining traditional structures of information and knowledge dissemination, the challenge within the educational sector is to be sufficiently informed about practical and realistic ways that DT can be used to enhance the teaching and learning process. In this paper, we will explain how two university teacher educators (TE) implemented digital literacy (DL) courses with the intent of promoting digital education leadership (DEL) (Brown, Czerniewicz, Huang, and Mayisela, 2016). We define DEL as taking a leaderly stance towards digital education (DE) and advocate for individual as well as shared responsibility for digital practices. Through the notion of DEL, we are exploring the attitudinal influences of being knowledgeable, open-minded, critical, and ethical in the digital world. Our work allows us to expand ongoing discourse around DL and DE with the intention of promoting digital inclusion, equity and wellbeing.

The courses we will discuss in this paper is based on adapted elements from an open educational curriculum: Commonwealth Digital Education Leadership Training in Action (C-DELTA). C-DELTA was published by the Commonwealth of Learning with the intent of supporting the growth of DE within Commonwealth nations. This paper highlights the elements that we adapted to suit two different initial teacher education (ITE) programmes in a university setting. We believe this paper is informative because it attests to the versatility of the curriculum, encouraging others to consider its potential applicability to different contexts. As TE, we are working towards growing pre-service teachers' (PSTs) capacity for DEL by attending to potentially significant internal shifts that can help them to not only grow as teachers but also as digital leaders that promote the United Nations Sustainable Development Goals for digital inclusion, equitable access and participation. This intent is future-focused as we believe that teachers play an important role in promoting lifelong learning experiences in the digital world. By investigating and reflecting on our digital pedagogical practices, we highlight the need for continued and deeper understandings of digital educational experiences.

Literature Review

DEL lies at the core of the C-DELTA curriculum. It is a framework that positions teachers at front of DE with an understanding that DL influences how teachers use digital tools to produce DE in their contexts. With teachers at the helm, it becomes a priority to ensure that they understand their digital capacities, abilities and competencies. This means that teachers will need to know sufficient technical knowledge as well as adopt sustainable mental attitudes in order to lead educative digital experiences. We envision DEL as the social practice that helps to encourage productive and inclusive online and offline communities of practice and learning.

The C-DELTA curriculum is based on two components: DE and leadership in DE, with digital literacies as the basis for both. It is premised on the assumption that individuals need to develop their DL before they can become a DE leader. This assumes that leaders should be able to “walk their talk” and implies that leaders need to have sufficient knowledge, skills and capacity to lead the digital learning experience of others. While the concept of DEL lives within the C-DELTA curriculum, we posit that DEL is an individual and internal attribute that is not necessarily related to any position or role that individuals may hold. The C-DELTA curriculum is structured with a view of DL that is operational (i.e. the tools, techniques and skills needed), cultural (i.e. relevant to the particular context(s) in which participants are located and working) and critical (i.e. questioning of the role of the DT and what underlies it in socio-political terms).

In this study, we will explore online and blended ways of engaging PSTs with their learning. From a sociocultural lens, both forms of digital engagement complicates learners' commitment and depth of engagement because online learning removes the face-to-face or synchronous connections that enable educators

to organically mould conversations towards focused outcomes. As TE teaching digitally, we found ourselves re-evaluating the assumptions that we had about communication, learning engagement and motivation.

The online course was designed with constructivist learning intentions with anticipated learning outcomes described through action verbs such as describe, understand, demonstrate, consider and evaluate. These outcomes were selected to portray realistic applications of knowledge so that PSTs would be able to adapt the content to suit their learning needs, abilities and future teaching contexts. According to Duke, Harper and Johnston (2013), a constructivist and cognitivist approach to course design is subjective and focused on personal growth. Such an approach allows demonstrable shifts in thinking or outcomes to be discussed and represented within self-reflections and self-evaluations. While there were aspirations for more dialogue via forum discussions, which were motivated by social constructivist considerations, these were not possible due to high student workload, course timing and assessment expectations. This omission was not ideal given our vision of DEL as a social practice so we will highlight some of the questions that this raised in the discussion part of this paper.

Methodology

In this qualitative study, two university-based TE implemented aspects of the C-DELTA curriculum into two different ITE courses. Both educators obtained ethical permission for practitioner self-study from the university's ethics committee. Our study was guided by this research question: "How can we prepare pre-service teachers to become digital education leaders?" because we wanted to examine how aspects of C-DELTA could be adapted to suit the needs of our PSTs. Since the C-DELTA curriculum is extensive and well beyond the workload and hours allocated to a single University course, we focused on utilising relevant aspects that would align with our course learning outcomes and workload. We employed a thematic approach to analyse our data because this enabled us to highlight interesting aspects within the course content as well as student work. Both were used to construct a holistic understanding of the effectiveness of course content and delivery. Since each course had unique traits, we have chosen to describe them separately in the descriptions below.

Online Course

There were twenty PSTs enrolled in a one-year, Masters-level, initial teacher education programme. Digital Literacy (DL) was presented as a compulsory subset of a five-month teaching practice course that was delivered through face-to-face workshops. The DL component was presented as an eight-week, online (via learning management system (LMS)) and self-paced section that was evaluated on a pass/fail criteria. To complete this course, students had to read a general explanation about DEL and a digital book that focused on developing digital identities (DI). Students' understanding of DI was built through a progressive approach where identity construction was explored through personal, professional and leadership motivations. This course focused primarily on unpacking key aspects of DI and social networks because these were deemed to be most applicable to PSTs, and they were designed to be foundational concepts for DEL. Through these foci, the course culminated in three forum postings that were designed to elicit different types of reflections in relation to the themes covered.

Blended Course

The Graduate Diploma in Teaching and Learning (Primary) is offered to university graduates with a bachelor's degree who are seeking to become primary school teachers. This diploma is offered on campus and in distance learning modes, with DL/Digital Citizenship (DC) being included within a course that is titled "Focused Education: Science, Technology and Digital Literacy/Citizenship". Both modes engage students in an eight-week, online course (LMS) that is supplemented with recorded lectures (which campus students attend) and pre-recorded video material (available to all students). This course adapted the Digital Civics framework (Youth Participatory Politics Research Network, 2018) to lead students through a process of participation, (re)searching, creating, adding their voice and acting in a digital world. The content used was adapted from both the C-DELTA and Rhebus Digital Citizenship Toolkit, both Open Educational Resources (OER) drawing particularly on aspects that were relevant to DI, information literacy and DC. In the assessment, students were asked to reflect on their approach to researching both scholarly and popular literature about their Science and Technology topic, and include a digital artefact to teach school children about the challenges of online information. They also had to describe a digital teaching and learning activity (TLA) which engaged students in taking on-going positive action about their topic.

Discussion

In this section, we will demonstrate how each course design offered PSTs different learning experiences. We begin by highlighting aspects of both courses to highlight the strengths, limitations and challenges experienced.

These insights can be beneficial for those who are interested in the practical considerations around developing DEL in different contexts.

Online Course

As mentioned earlier, there were three sections within the online DL course. In the first section, PSTs were asked to explore the concept of personal and professional DI with the intention of understanding how these could and would overlap for teachers. PSTs were asked to reflect on three case-studies that contained challenging situations that teachers could face in reality. Overall, we found that most PSTs identified superficial and technical remedies to these scenarios easily but the majority missed larger, overarching concerns around DI. To explicate this in detail, we will use one Facebook example for discussion. PSTs were asked to consider their position as emergent teachers in terms of being tagged to drunk FB photos, and comments about drinking and partying. Most PSTs identified technical solutions such as “untagging” and making conversations private in FB. Some PSTs cited a commitment to upholding professional teacher standards as their benchmark for acceptable online behaviour by stating that “being drunk or drinking publically” being professionally unacceptable or categorising drinking as a socially acceptable but private responsibility. Our analysis of these themes brought forth opportunities for deeper discussion and development of future content areas around digital privacy and responsibility. The analysis of these tasks also reiterated the differences between face-to-face and online courses. While we can be fluid, responsive and adaptive pedagogically in face-to-face teaching situations, online pedagogy demands pre-determined clarity, challenge and depth to guide independent thinking.

The second section was designed to challenge PSTs thinking and pedagogical orientation towards DT. Content around DE was explored to illuminate the benefits and drawbacks of using DT in their teaching contexts. For this activity, they were asked to investigate the implications of online filter bubbles and develop an understanding as well as an emergent position on how this digital phenomenon could influence their teaching practices. Most PSTs identified how it could limit people’s views on reality and some questioned the notion of reliable sources of knowledge, skewed opinions and marketing and political biases. The pedagogical link enabled most PSTs to make speculative plans to implement online and offline approaches to countering the impact of filter bubbles. While most responses were thoughtful, in future versions of this course content, we want to extend thinking by juxtaposing filter bubbles alongside echo chambers. This could stimulate or provoke further thinking around the changing nature of information and knowledge through DT, and may lead to more questions around the destabilisation of knowledge in this digital age.

We made an explicit connection to DEL in the final section by asking PSTs to imagine how they could be leaderly in their future teaching contexts. Through thinking points around digital privacy, internet safety, digital communication, digital licenses and copyright, and several learning theories that supported digital pedagogical approaches, this section revisited the range of content covered previously in greater depth. This “spiral” approach was influenced by Bruner’s (1977, p. 52) notion of scaffolding, where content areas are revisited because they are designed to gradually increase in complexity. There were wide variations in how PSTs responded to reflective DEL questions with the majority describing ambitious preventative measures that emphasised the importance of developing technical competencies. One factor that stood out in the second and third module is the lack of teaching experiences that PSTs possessed when they took the course. Hence, their DEL reflections were either abstract or contained narrow views of contextual factors that could influence and shape their potential as digital leaders in schools. Upon reflection, we think that Gibbs’s (2014) suggestion of “descaffolding”, which can be understood as attaching clear expectations that align with scaffolded content to be a helpful way forward in future courses. Including case-studies with hypothetical teaching contexts, as adopted in the first section, could be a more productive approach because it will enable us to descaffolding and guide PSTs towards more holistic and realistic visions of digital leadership.

Blended Course

Each week students had online activities and resources to engage with around various topics. These were voluntary but many activities were designed to lead towards the assignment. PSTs started by thinking about their digital self and creating an image to represent this. This was followed by exploring their digital footprint and reflecting on the view of themselves others see online. They then started to develop their strategies for assessing information by playing fake news games and using Caulfield (2017) or McGill (2017)’s questions to learn to be critical of online information.

One of the struggles which we battled to overcome was to get students to acknowledge that despite the technical “know how” they possessed, they needed to adopt a different framing in order to be critical. The assessment (which asked students to search for different types of information around a topic and use criteria to explain concepts of reliability and validity) demonstrated that very few PSTs were successful in being reflective of their own practices. Instead they fell back on tried and tested strategies that included decisions about which websites

were trusted as opposed to thinking about and being critical of the information they read. For example, social media was viewed as opinion based and should not be seen as reliable whereas any resource they could access via a University library database was reliable.

Whilst learning to be critical was clearly one aspect of DL we wanted to impart, another was a more active engagement with online content and a movement from being a consumer to producer of content. Students were introduced to the concept of creating their own content through discussion of OER's, open licensing, shared resources and tools that they found useful as teachers. Using their knowledge of licensing to explore the reusability and adaptability, we led students towards creating their own online content through development of an infographic. The intention was to encourage students towards more active participation in the digital world. To encourage them to start to become active members of a community of practice, the activities were regarded as "fun" and "interesting" but few PSTs drew on these aspects in their assignments. Instead, they preferred to locate existing resources and proposed using these in the classroom, rather contextualising them via their teaching during a lesson.

Finally, in endeavouring to make the connection to DEL explicit, PSTs had to begin to think about ways they could take digital action (even if they did not become digital activists). We led PSTs through activities which considered issues of equity and voice, bias and representation so that they were aware that they operated in a global context and that access to the internet did not equate to equality of representation. In their assignment, PSTs had to propose a TLA which developed their students (primary aged children) as digital citizens by using DT to take on-going positive action around their science and technology topic. Whilst the majority of PST's proposed strategies like blogging to communicate their message, others were more creative and proactive in their design by drawing in community input and sharing findings about why their topic mattered.

Summary and Conclusion

Whilst PSTs did appear to develop their DL through both courses, we felt that this was superficial because there was a lack of depth in critical thinking. This conclusion led us to reconsider how we could better develop and realise our vision of DEL through our courses. These two different approaches and learning environments exposed some of the challenges of applying constructivist or social constructivist aspirations to DEL. These philosophies place an emphasis on personal construction of knowledge, growth and subjectivity alongside static and pre-planned content (in relation to static, online content). This vision of DEL requires PSTs to engage in internal reflection in order to activate individual action, which is realistic but ambitious in the context of short courses. Despite the self-directed reflective task design, challenging students' preconceived ideas and practices were harder to facilitate in the online context.

As mentioned previously, both groups of PSTs were generally lacking in teaching experiences and as such, they had limited understandings of digital educational practices. This will remain one of our main focus areas in future courses; developing ways to aid PSTs to better understand the concept of DEL and the practical implication of enacting DEL in schooling contexts. We have also considered an inquiry-based approach to exploring DEL, which could render it more practical and potentially engage PSTs in realistic learning experiences. Another aspiration within DEL that we have yet to fully realise in our courses is the desire to promote provocative opportunities to engage PSTs in challenging intellectual discussions around their existing digital behaviour and practices. Whilst we deem this to be important, we are, as yet, still developing ways to shape these learning risks into useful learning experiences.

Whilst we were applied constructive alignment, which can be described as salient links between learning outcomes, content, and assessments (Biggs and Tang, 2007), we concluded that our vision for DEL would require continuous content updates. We believe that fluidity is needed within digital pedagogy due to the rapid pace of technological change and the ensuing impact that these changes have in the digital world. Thus, in order to realise a vision of DEL that promotes the leaderly capacity of individual teachers, there must be versatility in course design, which translates into continued re-evaluation of content and engagement.

Our argument for versatility is embedded within the level of nuanced differentiation needed to move students (with different experiences and knowledge) along the continuum of DEL. Our socially situated view of DEL is premised on contextual differences but enacted in an online/blended environment over a short period of time. Aspiring for depth within reflection and engagement is already challenging in face-to-face settings, and this challenge is multiplied within online and blended environments. With students having different starting points and needs, each will require differentiated guidance to realise their capacity to be digital leaders. In addition, the nebulous nature of the digital world adds to the complexity of envisioning DEL for us as educators. We remain open-minded about the concept of DEL because there is still much to develop in terms of enacting this concept in (digital) reality. Thus, as we seek to explore and expand upon the meaning and implications of enacting

leaderly qualities such as resilience, criticality and versatility, we remain cognisant that our understanding of DEL is still evolving. From this study, we concluded that versatility and open-mindedness were useful attitudes to adopt as digital educators. We regards DEL as an important notion to develop in future teachers because we want teachers to lead desirable changes in digital inclusion, equity and participation. Educating teachers to take a leaderly stance can help to ensure that their students become more informed and critical digital citizens.

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