Manipulating practices

A critical physiotherapy reader

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CHAPTER 11

A critical pedagogy for online learning in physiotherapy education

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Abstract

In order to graduate physiotherapy students who are able to thrive in increasingly complex health systems, professional educators must move away from instrumental, positivist ideologies that disempower both students and lecturers. Certain forms of knowledge are presented as objective, value-free, and legitimate, while others – including the personal lives and experiences of students – are moved to the periphery and regarded as irrelevant for professional education. This has the effect of silencing students' voices and sending the message that they are not in control of their own learning. While the integration of digital technology has been suggested as a means for developing transformative teaching and learning practices, it is more commonly used to control students through surveillance and measurement. This dominant use of technology does little more than increase the

cost-effectiveness and efficiency of information delivery, while also reinforcing the rigid structures of the classroom. Physiotherapy educators who adopt a critical pedagogy may use it to create personal learning environments (PLEs) that enable students to inform their own learning based on meaningful clinical experiences, democratic approaches to learning, and interaction with others beyond the professional programme. These PLEs enable exploration, inquiry and creation as part of the curriculum, and play a role in preparing students to engage with the complex and networked systems of the early 21st century. While the potential for pedagogical transformation via the integration of digital technology is significant, we must be critical of the idea that technology is neutral and be aware that our choices concerning tools and platforms have important implications for practice.

"Intellectual dead zones": Challenges in higher education

"*There is no such thing as a neutral educational process.*" *(Freire, 1970, p. 34)*

Health systems are increasingly being recognised as integrated, complex, and adaptive systems characterised by high levels of uncertainty and constant change (Bleakley, 2010). These features of complex systems make them inherently ambiguous and uncertain, with no clear boundaries and where predictable outcomes are lacking. The knowledge and skills required to work with the kinds of problems found in complex systems are so diverse that it is impossible for a single individual or profession to make any appreciable impact, which means that collaborative teams are essential for success (Bleakley, 2010; Frenk et al., 2010). The ability of these teams to drive change in complex systems is a function of their ability

to connect existing ideas, leading to the development and implementation of new ideas. Not only do these activities take time but they are also highly social, as success depends on how we interact with people and information in dynamic environments. Yet education for the health professions continues to follow traditional lines of thinking based on a pedagogical model that fails to consider the changing context of health systems (Frenk et al., 2010). Our pedagogies are instrumental and geared towards memorisation, conformity and high-stakes assessment, leading to classrooms that are what Giroux (2010) has called "intellectual dead zones". The positivist ideology in medical and health professions education (Swanwick, 2014) is evident in the way that teachers view knowledge, how it is mediated through teaching practices, and the way they teach students to engage with it (Rowe & Oltmann, 2016). In this paradigm of technical rationality where knowledge is presented as objective and bounded, physiotherapy students are not well prepared for the "messy" and ill-defined reality of clinical practice (Schön, 1987). When knowledge is seen as something that can be neatly packaged and delivered to students, it is necessarily also understood as an external body of information that is produced independently of human beings; universalised, ahistorical, and value-free (Giroux, 2011).

Educators working from a positivist perspective see teaching as an act of depositing information into the minds of students, where the sonority of words is emphasised rather than their transforming power and *teaching* becomes *talking*, an act of producing facts that are received, memorised and repeated by the student (Freire, 2005). This banking model of education cannot prepare students for the spontaneous and emergent learning seen in clinical practice, where the presence of a teacher is not even required for learning to take place (Boud, 2016). When classrooms limit the pedagogical space necessary for imagining what is possible, students are not prepared for the

relatively open-ended and complex learning environments provided by clinical placements (Trede & McEwen, 2016). hooks (1994)[1] suggested that teachers' power over students dulls their enthusiasm and cultivates an obedience to authority and in fact, classrooms seem designed and optimised to keep students under control. The classroom as a place of confinement (Illich, 1970) has not changed much since the emergence of universities about 500 years ago, with a layout ensuring that control and authority are vested in the lecturer – the "legitimate" source of knowledge – and impresses upon students the notion that their words and their personal experiences have no value in their own learning (Freire, 2005). In the context of a professional education that aims to develop within students the collaborative, thoughtful, and assertive dispositions that Trede and McEwen (2016) suggest are essential for responsible and deliberate clinical practice, we must consider alternatives to the dominant paradigm in physiotherapy education.

A higher education – regardless of discipline – should aim to cultivate "citizens who are critical, self-reflective, knowledgeable, willing to make moral judgments, and act in a socially responsible way." (Giroux, 2011, p. 3). Instead, we find teaching and learning practices that have become fragmented processes reduced to a series of predetermined steps, and utterly disconnected from their philosophical foundations. Educators and students become frustrated by the emphasis of assessment over engagement, management over creative exploration, content over community, and outcomes over discovery (Stommel, 2015). Physiotherapy departments around the world are exploring the use of technology to enable the development of the kinds of transformative and morally responsible curricula necessary to graduate clinicians who are capable of navigating the complexity of modern health systems. But rather than using

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1   bell hooks does not capitalize her first and last name

technology to create socially just spaces for undergraduate education, it is most often used to reinforce a system of authority and control over student learning (Martindale & Dowdy, 2016).

Command and control: The Learning Management System

"*We shape our tools and then our tools shape us*" *(McLuhan, 1994, p. xxi)*

The ubiquitous institutional Learning Management System (LMS) has become the de facto standard for online learning in almost all higher education institutions around the world (Wilson, et al., 2006). The integration of this technology into the classroom has enabled lecturers to enhance their lessons with shared online notes and presentations, encouraged the use of digital resources in institutional repositories, and enabled online forum discussion. These are positive but incremental improvements in the flexibility and efficiency of professional education but fall far short of being transformational (Laurillard, 2007). The LMS offers a set of features that facilitate student administration, content storage and dissemination, assessment submission, record keeping, grading, and student tracking (Sclater, 2008). While these features may enhance the management of students and content, it is difficult to see how they improve learning. The implementation of the LMS, often at enormous cost has, in most cases, been little more than a "digital facelift" that makes content distribution more cost-effective and efficient (Arvan, 2009; Campbell, 2009). The LMS is rooted in a teacher-centric model of learning where curricula are pre-determined, collaboration extends only to the boundaries of the institution, and participation is limited to paying students in isolated courses (Martindale & Dowdy, 2016). At its core, the LMS places the course behind a wall where

"The teachers are at the centre. The content is at the center. The learner is not at the center" (Watters, 2014).

In order to better understand the emergence of the LMS as the dominant paradigm of technology use in higher education, it is useful to reflect on the history of the Internet. Castells (2001) has argued that the social and cultural norms within which new technologies are created determine how the technology is used and understood. In other words, the culture of the Internet was derived from the culture of the creators of the Internet. As it grew from an unlikely collaboration between international university-based academics and students and the United States government, Castells (2001) describes the growth of community networks that reflected the culture of freedom and independent thinking that was flourishing across campuses throughout the 1960s and 70s. The Internet thus emerged as a tool of liberation, expressive of the individual freedom that was produced through the practice of openness in both its technical architecture and its social organisation (Castells, 2001). However, the technology was also being influenced by the contributions of government-based entities with an interest in controlling the nascent network, as well as entrepreneurs focused on commercialising it. These entities had little incentive to embrace the openness that was crucial for the Internet to be an instrument for freely acquiring information, sharing knowledge, aiding innovation, and encouraging democratic engagement. Today we see a tension between the historically and theoretically open architecture of the network, and the growth of software and services strongly influenced by capitalist and governmental concerns (Watters, 2014). The vision of the Internet as a democratic space that enabled the free spread of ideas is devolving into a centralised handful of walled gardens controlled by commercial entities that have sole authority to determine what is allowed (Leetaru, 2016). Watters (2014) notes that the open web is fast becoming the corporate web

and that despite the frequent invocation of the "personalisation" of learning, educational technology is increasingly developed by companies that aim to increase shareholder value rather than to enhance student learning.

In the context of higher education, the LMS is the manifestation of a teaching ideology that substitutes centralised control for democratic processes and goals, making both teachers and learners passive. Designed for observation and measurement – rather than learning – it resembles Jeremy Benthem's Panopticon, a circular prison structure with an observation tower in the middle, from which a guard can observe inmates without their knowledge (1843). The Panopticon is a representation of power in its ideal form, increasing the number of people who can be monitored, recorded, and controlled, while at the same time decreasing the number of people needed to operate it (Foucault, 1977). The LMS functions as an Information Panopticon; a form of centralised power that uses digital technology for observation, data gathering, and control mechanisms that do not rely on physical structures like classrooms and buildings (Berner, Graupner & Maedche, 2014). The software tracks and records students' online interactions, including the time it takes to complete a task, along with every click along the way. Based on the data that the process generates, a single teacher can monitor many students' performances and intervene when necessary, leading to a new domain of ethics considerations that educators need to be aware of (Prinsloo & Rowe, 2015). The most common use of technology in higher education is therefore not to enhance or transform learning, but to increase control over students through surveillance and measurement. New communication paradigms should change what can be imagined and expressed and not simply reproduce what has come before. The printing press did not lead to more efficient ways of producing illustrated manuscripts and

the web is not just a more efficient telegraph (Campbell, 2009). Online learning environments should be designed as spaces for students to communicate, create, and innovate without needing permission to challenge the status quo (Gillmor, 2014; Watters, 2014). Critically, we must recognise that technologies are not neutral and that our decisions about the tools and platforms we use have pedagogical implications.

Critical pedagogy: Teaching as the practice of freedom

"*The classroom, with all its limitations, remains a location of possibility.*" (hooks, 1994, p. 207)

If the integration of technology in physiotherapy education is to transform teaching and learning then educators must stop presenting the discipline as a "citadel of knowledge" guarded by experts (Barradell, 2017). In order to graduate clinicians who can navigate the uncertainty of complex clinical environments, we must move beyond the focus on knowledge, skills and competencies that have for so long been the focus of physiotherapy programmes. Educators must encourage the development of a community of practitioners that is inclusive of different perspectives, and where a wide range of knowledge, behaviors, and dispositions are valued (ibid.). Freire (2005) believed that education offered students the conditions for self-reflection, a self-managed life and critical agency but that these conditions could not be developed under conditions of oppression. Critical pedagogy is an approach to teaching and learning that offers students an opportunity to develop and assert their rights and responsibilities so that they are not simply being governed. They are encouraged to act on the knowledge, values, and social

relations they develop by being responsive to problems that they identify in their own lives (Giroux, 2011). Thus, a critical pedagogy connects learning to social change, challenging students to actively engage with the world in order to make a difference (Giroux, 2010). Under these circumstances, information is not simply delivered to students but is challenged and related to the self in order to produce new knowledge as they learn how to expand their own capacity to act. This could have radical implications for physiotherapy educators who aim to create dynamic and transformative learning spaces that lead to the development of critically reflective practitioners (Patton, Higgs & Smith, 2013). At its most ambitious, critical pedagogy helps students learn how to lead a meaningful life, hold power and authority accountable, and develop the skills, knowledge, and courage to challenge common sense assumptions while working towards a more socially just world (Giroux, 2011).

A critical pedagogy asks that lecturers connect learning tasks to the experiences, histories, and resources that students bring with them to the classroom, and to link these tasks to the goal of increasing students' capacity to be critical agents who are responsive to the social problems that they experience in their own lives (Coles, 2014). In this way, students become critical co-learners in dialogue with the teacher rather than passive learners of facts about the world. The role of the teacher is to thus to create *with students* the conditions under which new knowledge is constructed (Freire, 2005). Lecturers and clinical supervisors who provide students with opportunities to engage in a culture of questioning and inquiry, foreground the important issue of who is in control of the students' learning and of what counts as legitimate knowledge. When students see how specific modes of knowledge, identity and authority are constructed by their interactions, they learn to engage critically with others while at the same time

being accountable for their own views and actions (Giroux, 2010). Physiotherapy educators, clinical supervisors and clinicians must work with students to develop a critical perspective on practice that explores how knowledge, truth and power are inherently tied to professional discourse and that these concepts are not objective and value-free (Nicholls, 2012). These challenging interactions may be the impetus to develop within students the bravery and moral courage that are necessary to challenge the idea that the knowledge revealed to them during their studies may not be the only form of knowledge that is legitimate. A critical pedagogy in physiotherapy education sends the message that students' voices and lives are meaningful and powerful, and that by questioning the taken-for-granted assumptions that drive their education, they have the capacity to change it.

A traditional physiotherapy course is a well-defined container for outcomes, learning tasks, assessment and content, and the configuration of these courses determines largely the nature of the interactions that are possible within them. When students and lecturers believe that knowledge is static, stable and something that exists "out there", apart from human beings, teaching and learning take place through the controlled transmission of information from authorities into the minds of passive learners (Giroux, 2011). Within this paradigm, an online learning environment serves only as a container for the components of a course, and facilitates the movement of information from lecturers to students. It is not surprising therefore, to find that the most common use of technology in higher education – the LMS – is to define courses in digital space, where they are used to develop compliance and conformity via the limited number and types of interactions that are allowed. But these centralised, authoritarian and hierarchical structures cannot adapt quickly to change (Cabrera, 2016) and do not enable the learning encounters that develop the characteristics of health

professionals necessary to thrive in the 21st century (Frenk, et al., 2010). Nor do they encourage students and teachers to question the positivist paradigm that promotes a conception of knowledge that is objective and value-free, and upon which much of physiotherapy education is based (Higgs, Richardson & Dahlgren, 2004). If we aim to graduate capable students who are successful in modern clinical practice, we cannot use online learning environments that simply reproduce the rigid, centralised control found in the classroom. We are therefore beginning to see a shift from vertical communication structures that privilege hierarchies of control, to horizontal structures – like networks – that embody coordination, cooperation and collaboration (Bleakley, Bligh, Browne & Brice Browne. 2011). In open and networked learning environments, participants can negotiate the structure of a course, in the context of their own life experiences, values and beliefs. This framework enables content to be built around the critical examination of concepts, hierarchies and assumptions that exist within individuals and the group (Morris & Stommel, 2015). If learning is personal and knowledge is constructed in the context of our own life experiences, then we need online learning environments that not only acknowledge this but are built around it.

A personal learning environment: Creating space for the student's voice

"*The truly creative changes and the big shifts occur right at the edge of chaos*" *(Bilder, in Schwartz, 2014).*

Recognising the personalised nature of learning requires an approach to online environments that position the learner at the centre of the process, enabling them to support learning directed at educational goals that they determine for themselves (Wilson

et al., 2006; Martindale & Dowdy, 2016). While some discussions of personal learning environments (PLEs) focus on specific tools and services, the term includes all of the resources that a student uses to answer relevant questions, provide personal context, and illustrate processes that are an inherent part of meaningful learning. In this context, a PLE does not refer to a collection of services or applications but is rather a conceptual framework that describes how students approach the task of learning in online environments (Martindale & Dowdy, 2016). There are no single technology platforms that constitute a PLE and no set framework that describes how they work because they are unique to each individual, emerging as part of the learning experience. Downes (2009) has suggested that a PLE should incorporate a diversity of perspectives, enable student autonomy with respect to guiding the direction of learning, produce new knowledge through the interaction with others, and provide open boundaries that allow new perspectives into the environment. While it is possible for a PLE to be integrated with an LMS, it is also clear that as far as learning within the PLE is concerned, connection is more important than compliance, which creates a tension in the way that the two systems are configured (Wilson, et al., 2006). A PLE may therefore be achieved "using a combination of devices (laptops, mobile phones, portable media devices), applications (newsreaders, instant messaging clients, browsers, calendars) and services (social bookmark services, weblogs, wikis) within what may be thought of as the practice of personal learning using technology" (Wilson et al., 2006, p. 36).

In a PLE, the goal for the student shifts from a need to collect information to a need to draw connections from it – to acquire it, disseminate it and collaborate in its application to their own lives. The student therefore takes responsibility for organising his or her own learning environment instead of operating within one that is

determined by the teacher or the institution (Martindale & Dowdy, 2016). An example of a PLE for a physiotherapy student might include a collaborative workspace in the form of a personal blog where they reflect on meaningful clinical experiences. They should then be able to find and aggregate relevant information from a variety of both formal and informal sources, including clinical supervisors, lecturers, peer reviewed publications and textbooks, as well as practitioner blogs, YouTube and Physiopedia. The PLE should enable the student to reinterpret, combine and edit those resources using their own personal insights derived from clinical practice and then publish these new artefacts that can themselves be integrated as resources into the learning of others (Kop, 2010). In this way, students are not unquestioningly receiving information from authority figures but are actively engaged in a process of creating new knowledge where it is transformed, challenged, and personally relevant (Rowe, 2016). Unlike historical approaches to learning that see students as the recipients of objective and value-free information, the learner-centred nature of PLEs emphasises "participation over presentation, encourages focused conversation…and facilitates innovative explorations, experimentations, and purposeful tinkerings that often form the basis of a situated understanding emerging from action." (Seely Brown & Adler, 2008). Learning, in this context, is not separated from learning how to change one's personal reality (Giroux, 2010).

The implementation of PLEs as part of undergraduate physiotherapy programmes is not unproblematic. Because every student's PLE is different, the provision of training and support is more complex and expensive than providing support for an LMS with its vertically integrated stack of common tools. In addition, the public nature of PLEs brings with it concerns over patient privacy and the exposure of student data (Martindale & Dowdy, 2016). However, instead of choosing systems that "protect" students from these

issues, a critical pedagogy could help them learn how to manage the risks associated with public online practices by, for example, developing professional online identities and ensuring that discussions of clinical interactions protect patient, private and institutional information. Educators interested in online learning would also need to confront the challenges of helping students avoid information overload, making effective use of the digital tools embedded in a PLE, and designing a learning environment that supports self-directed learning (Kop, Fournier & Mak, 2011). This puts more responsibility on students to engage with verifiability and credibility of information, tasks that were previously performed by the teacher but which are increasingly relevant for a profession that emphasises the importance of an evidence base for clinical decision-making. Physiotherapy educators will need to grapple with the tensions that now exist between the traditional, linear, and bounded models that define current educational contexts, and the fluid, unstable and collaborative learning environments that are emerging as technology advances. While the implementation of PLEs in physiotherapy programmes will introduce new challenges, current approaches to professional education may be inadequate to develop the attributes necessary for graduates to thrive in the uncertain clinical environments of modern health systems.

Conclusion

It is easy to convince ourselves that the world in which we find ourselves in is inevitable; that history progresses in a regular, stepwise fashion leading from one rational outcome to another. This may lead us to accept things as they are without considering the possibility that alternatives may even exist. This chapter has suggested a rationale for why we struggle to graduate students who are capable of addressing the problems that arise in complex health systems.

Physiotherapy education traditionally positions knowledge as being independent and objective, separate from the reality of our personal lives and experience, which has implications for teaching and learning practices. This perspective not only informs our classroom activities but also the choices we make with respect to the development of online and digital learning environments. Rather than using the Internet to create a democratic space for learning, we have seen the emergence of a teacher-centric technology that prioritises content and administration above student learning. The LMS is just one example of the idea that technologies are not neutral and that our decisions about tools and platforms in teaching and learning have pedagogical implications.

Critical pedagogy is a pedagogical approach that offers students an opportunity to develop and assert their right to not simply be governed, and may help to create an environment in which they are able to respond to the problems that they experience in their own clinical practice. This integration of professional knowledge, new information, and personally relevant learning helps students develop the capacity to hold power and authority accountable, while working towards a more socially just world. A critical pedagogy in physiotherapy education highlights for students that their lives are meaningful and powerful, and that by questioning the taken-for-granted assumptions that drive their education, they have the capacity to change it. Adopting a technology that serves to reinforce the status quo rather than empower students with the necessary characteristics to challenge it does little to prepare them for the challenges of health care in the 21st century. While the concept of the PLE is a new and evolving construct that is not yet fully understood, it has the potential to disrupt online and digital learning practices in ways that are difficult to imagine, mainly because we have so few examples to draw from. By giving students the chance to explore, question and create as part of the curriculum

we not only provide them with the technical skills to thrive in a digital, networked society, but also demonstrate that professional education includes more than the development of knowledge, skills and competencies. The combination of a critical pedagogy with technology platforms that enable open and networked learning environments may offer exciting opportunities for a professional education that encourages students to develop a healthy disregard for the status quo.

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