Introduction to History, Theory, and Research in ODDE

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Towards an Informed Approach to ODDE

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Contents

Abstract

This introductory chapter explores the interrelationship and interplay between history, theory, and research in ODDE, demonstrating how they inform research and practice covered in the handbook. It is argued that lack of historical knowledge about ODDE, unawareness of ODDE theories, and negligence of the abundant research literature on ODDE have contributed to the marginalization of and prejudice against the field in the wider education eco-system, despite the fact that it has entered the "mainsteam" of education now. Compelling arguments are advanced for the relevance of history, importance of theories, and necessity of research to the sustainable growth of ODDE. The chapter then goes on to explain the structure of the section, drawing the readers' attention to issues worthy of further attention. It concludes with several implications from the other chapters in the section and a call for using them as a stepping stone to reimagining ODDE for the twenty-first century.

Keywords

ODDE · History · Theory · Research · Practice

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Introduction

Open, distance, and digital education (ODDE) has entered the "mainstream" of education (Xiao, 2018) and even becomes "normalized" during the COVID-19 pandemic (Bond, 2020; Bond, Bedenlier, Marín, & Händel, 2021). However, it has yet to be heartily embraced as a "normal" form of education in the way campus-based education is referred to, by default, as education. The bias against ODDE exists, whether we like it or not.

For years, the prejudice against ODDE is also embodied in its ownership. Education, including ODDE provided by conventional higher education institutions (HEIs), especially elite universities, tends to be more favorably perceived simply as a result of their high reputation as an academic institution, while ODDE offered by dedicated ODDE institutions continues to be questioned one way or another. The logic behind this prejudice is that conventional HEIs are inherently superior to ODDE institutions and that elite universities are the best in all fields, including areas where they do not have expertise. In the eye of many colleagues from conventional HEIs, ODDE is massive open online courses (MOOCs), and vice versa because they turn a blind eye to what ODDE institutions and researchers have been doing in the past decades. Due to this negligence and unfair treatment, even MOOCs or ODDE programs offered by elite universities leave much to be desired, a tendency which contributes to further stigmatization of ODDE by dedicated institutions (Bozkurt et al., 2020).

ODDE is a branch of the wider education sector with a much shorter history. However marginalized and stigmatized, ODDE has survived for over one century either as an alternative to "normal" education or as a "normal" model of education for many people. It will continue to "disrupt" education even if its Cinderella status remains unchanged. On the other hand, the role of ODDE as a savior during the COVID-19 pandemic is widely recognized (Bond, 2020; Bond et al., 2021) and its presence in campus-based education will be as robust in the post-COVID era as in the COVID-19 days, if not more deeply rooted. It will be here to stay and its value is unquestionable.

Nevertheless, it should be borne in mind that the presence of ODDE in the ecology of education does not ensure the realization of its affordances and fair treatment. To what extent can ODDE give full play to its value? How will it evolve in response to emerging situations? Will it be referred to as education rather than be distinctively labeled, as is the case of campus-based education? The answers to these questions depend on how much it is historically rooted, theoretically underpinned, and research-informed.

Relevance of ODDE History

Education is a social enterprise and does not exist in a vacuum. Learning from the history of ODDE enables us not only to avoid making the same mistakes occurring in the past (Moore, 2014) and/or new mistakes but also to revisit existing theories

and develop new theories when the situation so requires (Jung, 2019). Unfortunately, history is an under-researched topic in the literature of ODDE (Moore, 2008). Having paid heavy prices for this lesson, we have yet to learn from it and are continuing to repeat past mistakes and making new ones.

ODDE was an innovation in education in the first place. Each generation of ODDE emerged and evolved out of specific contextual considerations. For example, in addition to the availability of new and emerging media, which is often deemed to be an essential characteristic of each generation of ODDE (Garrison, 1985), what was its value proposition? What was its mission? Who were its target beneficiaries? What pedagogy was advocated? What (learning) culture was it situated in? What role was expected of the institutions, teachers, and learners, respectively? What social support (e.g., infrastructure, government policy, funding opportunity, and so on) was available? How open and resilient was the "mainstream" education system? Things like these interact with each other and help define ODDE in a specific period of history and in a specific context, which in turn helps shape specific ODDE theories. It goes without saying that ODDE practice and theories are not uniform across time and context. Historical knowledge of a specific model of ODDE or a specific ODDE theory is essential for it to be used in another historical period and/or in another context. Only with historical knowledge can we make necessary adaptation, adjustment, and refinement in our own practice. What has proved to be effective in the past and/or in a certain context may not be equally effective at present and/or in another context. Similarly, what proved to be ineffective in the past in a specific context may turn out to be adequate today and/or in another context. This is the contextualization-generalization-recontextualization cycle of ODDE theory building and application as proposed by Jung (2020). And as more and more changes have taken place, new theories may be in need, hence, for example, the emergence of connectivism, rhizomatic learning, and heutagogy for contemporary networked learning (Blaschke, Bozkurt, & Cormier, 2021).

On the other hand, it is worth emphasizing that there are elements that are applicable to all contexts and in different historical periods. In fact, the core of an ODDE model or theory tends to be "universally true." Many lessons, both successes and failures, are relevant across time and context due to similarities in human learning patterns. For example, exclusive emphasis on learner-centered methods is doomed to be short of expectations despite the hype around this concept in recent decades. A typical case in point is the programmed learning advocated in the 1960s and 1970s which was designed to cater for learners' varying needs and enable learning in flexible sequences and at varying paces (Kay, Dodd, & Sime, 1968). Programmed learning did not survive in the ecology of education because of its lack of direct human interaction which is essential to successful education. Even the radical newer theory of connectivism acknowledges the necessity of some form of mediation (Downes, 2022). Similarly, over-emphasis on teacher-centered or lecture methods has led to failure of many technology-assisted innovations, from the 1926 Pressey Teaching Machine to the later computer-based teaching such as Computer-Aided Instruction (CAI), Computer-Based Training (CBT), and Intelligent Tutoring Systems (ITS) (Harasim, 2015). MOOCs are another case in point. Ignoring lessons

learnt from decades of online education research, researchers are still looking for answers to questions, some of which were already answered by educational television researchers in the 1960s to the 1980s according to Baggaley (2017) who lamented the time and effort wasted by MOOC researchers in failing to learn from previous literature. For example, the failure of American radio and television in education was attributed mainly to the commercial broadcasters' attempt to prioritize advertising in their programs and teachers' unwillingness to adapt their pedagogy to take advantage of the technology. This remains one of the root causes of the failure to benefit from subsequent technologies today (Moore, 2014). Therefore, it is not surprising that "there has been a clear pattern of technologies that were going to change and save education but never did—over-promising and then under-delivering. The pattern goes back decades, and yet we continue to make the same mistakes" (Baggaley, 2014, p. 130).

Technologization of education, among other things, is a key factor contributing to the widespread disregard for ODDE history and its relevance to current research and practice in that "the mere thought of digital technology compels many people to look forward rather than back," an ahistorical approach – "anticipating what is about to happen with technology rather than attempting to make sense of what has already happened" (Selwyn, 2012, p. 216). A simplified view of education has prevailed in the education community in recent years, taking education for an issue of transmission of content, hence merely a technological issue (Harasim, 2015). MOOCs are the ultimate in this narrative. Located in the historical context of ODDE, MOOCs, especially the so-called xMOOC, are not a new concept at all (Bates, 2013; Romiszowski, 2013), not to mention small private online courses (SPOCs) championed by Harvard University (Coughlan, 2013). As pointed out by Daniel (2013), massive open courses have existed for over four decades. Both MOOCs and SPOCs are the norm of open universities around the world. So are flipped classroom and blended learning. For example, with an enrolment of around four million students at the Open University of China, it is not uncommon that certain courses are studied by tens of thousands or even hundreds of thousands of students at the same time. Yet, even such a respectable figure as Hunter Ripley Rawlings III, the President of the Association of American Universities, was surprisingly ignorant of the abundance of literature on online education contributed by the ODDE community in the past decades. He was quoted as saying ". . .there is very little good research on the best forms of online learning, and . . . there are no good studies on what constitutes bad online pedagogy, of which there is a fair amount" (O'Neil, 2013).

Importance of ODDE Theories

"There is nothing so practical as a good theory" (Lewin, 1952, p. 169). Unfortunately, theory is often associated with anything but practical and (even deliberately) neglected today. Theory is about how to "organize our knowledge... the reduction of our knowledge to the basic ideas, presented in a way that shows their underlying patterns and relationships" (Moore, 1991, p. 2). Good theories are applicable across

time although adaptation and extension and even new theory building may be necessary to respond to emerging circumstances. The practical value of theory is self-evident. Theory can inform practice, help us see where we are and what we need to do, and keep moving the field forward. Unless theoretically underpinned, practice cannot stand the test of time, even if it is seemingly effective at the moment, and neither can it feed and advance theory in return. Only when theory and practice are mutually informed can ODDE be quality-assured. It is absurd that the importance of theory to the development of ODDE needs to be discussed and reiterated among academics. Such discussion and reiteration is absolutely necessary today, though.

Despite "clear evidence of a strong theoretical underpinnings and considerations" in decades of ODDE research (Prinsloo, 2018, p. 8), the field has been under-theorized or a-theoretical in recent years, a concern supported by numerous large-scale systematic literature reviews (e.g., Bartolomé, Castañeda, & Adell, 2018; Bond, Zawacki-Richter, & Nichols, 2019; Hew, Lan, Tang, Jia, & Lo; 2019; Zawacki-Richter, Marín, Bond, & Gouverneur, 2019). This a-theoretical phenomenon is also echoed by responses from "research active" researchers in the field of educational technology and educational media (Bulfin, Henderson, & Johnson, 2013) and Prinsloo's (2018) observation of the 2017 World Conference on Online Learning.

Are we entering a post-theory age? ODDE is not short of theories. There are classic theories and newer theories which are the results of dedicated research by the ODDE community ever since the beginning of ODDE practice. There are even theories and models of technology adoption and acceptance because ODDE has always been technology-mediated one way or another and to varying degrees throughout its history. The a-theoretical syndrome may be attributed to various factors. Disrespect for or unwillingness to learn from the ODDE history and its theories may be a major factor. Historically, academics treated ODDE with contempt, refusing to accept ODDE as part and parcel of the educational ecology and acknowledge its significant contributions to socio-economic development of the global community. The "deficiency" theory proposed by Hunter Ripley Rawlings, as mentioned above, exemplifies this mindset. Another major factor may be the popularity and hence predominance of Silicon Valley solutionism (Morozov, 2013), or the above-mentioned technologization of education, which, often accompanied by commercial motives, preaches the omnipotence of technology. According to this ethos, all educational problems are technological in nature and can be fixed by technology. Moreover, the more advanced a technology is, the more powerful and effective it is in enhancing learning outcomes. This groundless assumption is particularly prevalent today.

Necessity of Rigorous Research

Is a pedagogical intervention effective? Can it deliver its intended objectives? Have its hypotheses been verified? How well does it align with a theory? How can it be improved? What lessons can be learnt from it? In what ways does it contribute to the

knowledge base of ODDE? How can it advance relevant ODDE theories? Such questions can only be answered through rigorous research. Nonetheless, it often happens that "the research we have is not the research we need," as this title of a journal article suggests (Reeves & Lin, 2020). Take the affordances of technology, for example. They have yet to be tested by rigorous research despite all the hype. For example, a review of 252 studies on learning analytics in higher education (2012–2018) indicates a paucity of evidence for large-scale deployment (6%), learning outcome improvement (9%), ethical use (18%), and learning and teaching support (35%) (Viberg, Hatakkab, Bältera, & Mavroudia, 2018). In addition to theory exemplification and advancement, rigorous research and practice inform and enhance each other. However, only when research is rigorously designed will this interplay ensue.

Rigorous research should be intended to solve meaningful problems, underpinned by a theoretical framework, grounded in relevant literature, and designed to be fit for the research purpose with proper data collection instruments and data analysis procedures to ensure the validity and reliability of the results. Unfortunately, it is not uncommon that research in ODDE lacks methodological rigor (Bulfin, Henderson, Johnson, & Selwyn, 2014; Panda, 1992; Simonson, Schlosser, & Orellana, 2011), is under-theorized (Jones & Czerniewicz, 2011; Markauskaite & Reimann, 2014; Saba, 2000), and/or concerns "isolated studies focused on new things rather than significant problems" (Reeves & Lin, 2020, p. 1999; also see Bulfin et al., 2013). For example, according to a systematic mapping review of 282 primary empirical studies on emergency remote teaching by HEIs during the COVID-19 pandemic (Bond et al., 2021), only 10.6% were built on a theoretical framework, 2.5% were designed as (quasi-)experiments, and 55.7% did not indicate even the time of data collection while 92.9% were cross-sectional studies. It should be noted, though, that these studies were mostly hasty in nature in an attempt to respond to the rapidly worsening COVID-19 crisis. However, this does not justify their lack of rigor. Results and conclusions from research of this kind beg the question of whether they are trustworthy and generalizable. These findings are shocking because what used to be the problems in ODDE research remain unsolved today or have deteriorated. For example, the reviews of Berge and Mrozowski (2001) and Lee, Driscoll, and Nelson (2004) show 6% and 12% of their samples ($n = 890$ and 383, respectively) adopted an experimental method. However, only 2.5 are found to be (quasi-) experimental in Bond et al. (2021). This phenomenon echoes Baggaley's (2017) argument that in online education, the problems of 10 years ago have grown worse today.

As an academic gatekeeper, I am fully aware of and deeply concerned about these counterproductive issues. The causes of this situation may be many and various. Still, I want to emphasize the imperative of fostering and enhancing research literacy among the academia. Only rigorous research can promote one's professional development both in terms of mastery and advancement of theory and improvement of practice; only rigorous research can add to the knowledge base of a field or discipline and advance theoretical evolution. Oftentimes, in my capacities as a regular reviewer of major journals and conferences as well as journal and book editor, I have the

impression that many researchers are keen to take a shortcut to "success." For example, instead of taking great but absolutely necessary pains to familiarize oneself with key theories and seminal works in a particular field of study and keep updated on new research outputs by regularly following publications through rigorous peer-reviewed venues, there is a tendency to make a last-minute effort to catch up on relevant knowledge, for example, by conveniently turning to blogs, un-vetted online publications and conference papers/presentations (Baggaley, 2014) for "theory" and "research findings," quoting from sources with no expertise in ODDE such as *Harvard Business Review* and *MIT Review* or authoritative figures in fields other than ODDE (Prinsloo, 2018). These people seem to take it for granted that everything needed for research is just a click away from the Internet.

Some 35 years ago, the founding father of distance education, Charles A. Wedemeyer commented that "without it [research], we cannot pick up our field, raise its level, and improve its practicality" (Moore, 1986, p. 62). The importance of rigorous research cannot be over-emphasized.

Structure of the Section

The section starts with Michael Grahame Moore's account of key developments, trends, and players of ODDE in the past one-and-a-half century. Readers should be aware that Moore's account is primarily situated in the United States of America and Great Britain. Following Moore's chapter is Marco Kalz's review of open education (OE) from the perspective of social movement theory and his argument for an alternative direction for the development of OE. Knowledge of the ODDE history may inform the interpretation of OE as a social movement. The point is to what extent and in what aspects OE is a social movement and can draw on the latter theory to promote future work. Instructional design and technology have gone hand in hand in ODDE ever since its initial days. Michael H. Molenda traces the origins and development of instructional technology and design. The history of this area is embedded in and shaped by the larger societal system and practice, a point to be borne in mind today. Given that education is increasingly digitalized, Martin Weller's chapter explores the way in which digital education overlaps with OE and illustrates this intersection with five popular educational technologies. Readers are advised to further explore the interplay between educational technologies and OE by transferring Weller's arguments to other and/or emerging technologies. The history part of this section is wrapped up by Benedict du Boulay's chapter on artificial intelligence (AI) in education and ethics (▶ Chap. 7, "Artificial Intelligence in Education and Ethics"). Readers are encouraged to explore the open questions raised in the chapter and in particular to tackle AI in ODDE by building on du Boulay's brief account of implications for ODDE.

Since the 1960s, several ODDE theories have been well established in the field. Terry Evans and Viktor Jakupec analyze the contexts in which Otto Peters, Börje Holmberg, and Michael Grahame Moore built their theories and recent scholars validated, interpreted, and developed these theories. A key thread woven throughout

the chapter is the interplay between theory and (contextualized) practice. With increasing popularity of digital learning, new theories have been built. This is what the chapter by Stephen Downes is about (▶ Chap. 9, "Newer Theories for Digital Learning Spaces"). Anchored to the historical context of ODDE development, Jon Dron and Terry Anderson analyze three pedagogical paradigms – objectivist, subjectivist, and complexivist – in the field and discuss three emerging paradigms – theory-free, cultural, and theory-agnostic. This is evidence of how theory shapes and is shaped by evolutions in practice. Given that motivation is essential to the success of ODDE, a chapter is devoted to motivation theories in which Clarence Ng introduces key theoretical perspectives on motivation, namely sociocognitive theories, sociocultural theories, and the concept of perezhivanie and discusses how each of them can inform understanding of ODDE and its practice. Ng's new insights into the interrelationship between motivation, empowerment, and ODDE can lead to new directions for research and practice. Like motivation theories, technology acceptance theories and models play an instrumental role in research and practice of ODDE. Andrina Granić gives a brief account of basic concepts and identifies major research themes and findings. Of particular value to readers may be the future research directions suggested.

The remaining two chapters focus on research trends in ODDE and research tools and methods. Olaf Zawacki-Richter and Aras Bozkurt use various bibliographic analyses to identify research trends. Their observation of the impact of COVID-19 on ODDE research and practice is worth further exploring. The last chapter by Heather Kanuka discusses research tools and methods from the perspectives of big science and little science (▶ Chap. 14, "Big Science and Little Science in Open and Distance Digital Education"). Given the emerging nature, these new tools and methods need to be validated, improved, or adapted through continuing empirical research.

Conclusions and Implications for Theory, Practice, and Research

This section aims to expound on the relevance of history, the necessity of theory, and the imperative of research to ODDE researchers and practitioners. By providing comprehensive, up-to-date overviews of the topics involved, the authors also draw on their expertise as renowned experts in their respective area of research to suggest directions for further research and practice.

Several implications can be drawn from this section. First, ODDE has a rich history, the lessons learnt from which are valuable to policy-makers, researchers, practitioners, and administrators alike. An adequate knowledge of this history enables us not only to avoid making mistakes, both old and new, but also to put theory into better use and enhance practice more effectively. Second, ODDE has developed its own theories and borrowed theories from other disciplines. There will be new theories to cater for the changing landscape. A-theoretical research is not research at all and a-theoretical practice is at most a one-off attempt. Third, ODDE is contextualized in terms of theory, research, and practice as well as in historical sense.

When adopting a theory, drawing on previous research findings, and/or following proven practice, contextual factors need to be taken into account. This contextualized nature also requires continuous innovation in theory enhancement/building, research, and practice in order to keep moving the field forward. Finally, research needs to be rigorously designed and conducted to inform practice while practice needs to build on relevant research to inform research. In summary, any improvisation of ODDE is doomed to failure.

Now is the best of all time for ODDE. ODDE has an unshakeable presence in the so-called mainstream education ecosystem. Moreover, pedagogically, it fits in with an increasingly technology-enhanced/mediated reality better than the traditional face-to-face mode of education. That said, there are and will be new issues to be addressed. For example, ODDE involves far more stakeholders, including micro-, meso-, and macrolevel actors, than it used to; the context in which it is implemented is far more digitalized and "intelligent" than in the past; it targets a whole spectrum of learners from K-12 to higher education instead of only those "nontraditional" learners; ODDE skills are a must to all instructional staff; newer technologies may be developed and used in education; new research findings from other fields may contribute to a better understanding of ODDE; national education policies may change to stimulate the expansion of ODDE scale and reach. The list can go on and on. It is time to reimagine ODDE. Each aspect of ODDE needs rethinking and re-inquiring to see whether it remains adequate or how it can evolve and adapt to the dynamic new context. The chapters in this section can serve as the starting points for ODDE's new journey in the twenty-first century.

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