A Personal Introduction to *Rethinking Problem-based Learning for the Digital Age*

(Savin-Baden and Fraser, 2024)

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Abstract

This reflection provides an introduction to, and reflection on, the new text *Rethinking Problem-based Learning for the Digital Age* (Savin-Baden and Fraser, 2024). It begins by telling the story and rationale for the creation of the book and then provides an overview of the text of the whole. The next section discusses the purpose of the book, and the final section analyses the importance of the notion of the postdigital for PBLonline. It argues that the postdigital as a concept and an approach is important in PBLonline because it prompts a rethinking of learning and the impact of neoliberalism of the university worldwide.

Keywords: Problem-based learning, Problem-based learning online, Digital age, Postdigital, Neoliberalism

Introduction

This personal reflection will explain the rationale for producing this text which occurred post-COVID. Its construction was prompted by the shift towards online learning during the pandemic the ways in which this had an impact on how learning is seen and valued in online spaces. During the post-pandemic

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era it has become clear that students' experience of learning online has changed the educational landscape, with students expecting more fluidity to the learning spaces offered to them, with some students preferring online modalities to fit around other life/work commitments. Finally, this reflection will explore the impact of the postdigital and how this has an impact on problem-based learning.

The story

In 2020 during the COVID-19 pandemic, Heather Fraser and I were often asked about the current, new and future possibilities for PPLonline. We had a number of online meetings with academics in our own and other institutions to consider creative possibilities. As a result of these meetings and many discussions Heather and I realised that my original texts in this area (Savin-Baden, 2007; Savin-Baden & Wilkie, 2006) needed to be not just re-edited but rewritten. At the same time Heather, an experienced problem-based learning facilitator in online and offline settings, was completing her PhD. Heather kindly agreed to co-author this text and bring her own research and new insights to bear. The result is this new textbook *Rethinking Problem-based Learning for the Digital Age* (Savin-Baden & Fraser, 2024).

The overview

The book is divided into 3 parts. Part 1, Deciding how to implement Problem-based Learning Online begins in Chapter 1 by providing an overview of the current landscape of problem-based learning. It builds on and adapts constellations of problem-based learning and problem-based learning pedagogies for online settings. Chapter 2 then explores the many reasons why problem-based learning is being moved away from an onsite face-to-face mode of learning to a digital form. It presents the relevant literature and examines the new forms of online learning and their relationship with PBLonline. Chapter 3 explores four central assumptions about the state of learning in higher education, namely the learning context, curriculum design, pedagogy and quality and provides a section on assessment. It explores the mistakes that are often made, including the choice of scenarios, the approach to facilitation and assumptions about students' capabilities online.

Part 2, The Art of Facilitation comprises three chapters. Chapter 4 focuses on tutors and argues that different approaches to facilitation are required, depending on the form of PBL adopted. It discusses the need for conscious consideration to be given to tutors' move to facilitation and to their transfer to

online learning, offering some practical strategies to support this. Chapter 5 presents recent research but begins with a discussion around the notion of disciplinarity, highlighting some of the variances in teaching and learning practices across disciplines. It then focuses more specifically on PBL, detailing some key findings depicted in Fraser's (2022) multi-site research study which explored the influences on PBL facilitation across five different disciplines. The final chapter in this section, Chapter 6, considers PBL from the perspective of the students and offers some practical strategies to support them in maximizing the learning opportunities that they are offered.

The final section, Part 3, focuses on Designing Problem-based Learning Online. Chapter 7 analyses the tech and the platforms. It considers the impact of advances in technology and the increased use of synchronous online learning. It outlines some of the more commonly used online learning platforms, exploring their use in PBLonline. From here Chapter 8 presents the use of PBL in virtual worlds. It explores digital learning spaces such as virtual worlds and virtual and augmented reality, suggesting that understandings of these have an impact on the diverse ways in which PBL is implemented in virtual worlds, simulation and augmented reality. The final chapter, Chapter 9 presents the idea of the postdigital and then suggests why it is important to PBLonline. The final section offers a new model of PBLonline and argues that universities and tutors wishing to create effective PBLonline need to embrace and implement this model in order to harness PBL for a digital age.

The purpose

The purpose of the book is to provide highly grounded research-based ways for those wanting to change problem-based learning modules and programmes from face-to-face to online approaches. It is also useful for those who have developed online learning modules but who want to change to problem-based approaches. Using online and blended approaches to learning has developed exponentially in recent years, and there is a need for an up-to-date compendium on curriculum making for all disciplinary areas. In this text the following arguments are made:
- The shift towards online learning during the pandemic has had an impact on how learning is seen and valued in online spaces (Dhawan, 2020; Jones & Sharma, 2020).
- The changing learning practice in online and blended learning has resulted in a renewed interest in active learning online, particularly in PBL (Bouilheres et al., 2020; Haslam et al., 2021).
- Students' experience of learning online has changed the educational landscape, with students expecting more fluidity to the learning spaces

> offered to them, with some students preferring online modalities to fit around other life/work commitments (Dhawan, 2020; Dost et al., 2020).
> - Learning has become postdigital and the academy needs to respond to this (Savin-Baden, 2021).

The book is designed to do the following to help readers consider how to implement problem-based learning online effectively in the changing climate of higher education and illustrate grounded models and examples of the ways in which problem-based learning has been implemented. It begins by describing the theoretical foundations of problem-based learning and linking it with the literature on diverse forms of e-learning. The text also suggests ways of implementing problem-based learning online, which will include a consideration of the use of different components such as blended forms of problem-based learning, the use of simulations, virtual reality, and multimedia resources. It then provides concrete examples of how different models of problem-based learning can be integrated with online learning. In short, it is a book whose purpose is to serve as a practical source for readers by addressing the complexity of virtual learning environments and new online learning spaces such as augmented and virtual reality.

The importance of the postdigital for PBLonline

The postdigital is defined here as a stance towards the digital which seeks to challenge the educational, economic and ethical impact of digital technology on humanity and the environment. For example, whilst learning at universities through digital technology in the past has been seen as largely supplemental, it now takes centre stage. What I mean here is that although virtual learning environments were developed and became popular in the 1990s, online learning was still seen as additional to onsite face-to-face learning. The growth of PBLonline has been relatively slow but the COVID-19 pandemic has resulted in increasing interest and adoption in this area.

We live in a postdigital world, and this is having an impact on problem-based learning. The postdigital is seen as a stance which merges the old and the new, it is not seen as an event or temporal position, rather it is a critical perspective, a philosophy, that can be summarized as a collection of stances (Jandric, 2019; Peters et al., 2021a, 2021b). The postdigital then is not just about positions or spaces inhabited just for a time, it is essentially ungraspable (Savin-Baden, 2021). Postdigital humans are located in liquid spaces; people are both central to the postdigital and key players in its formulation. Until now this area has not been explored in relation to problem-based learning online.

The postdigital as a concept and a practice is important in PBLonline because it prompts a rethinking of learning and the impact of neoliberalism of the university worldwide. This neoliberal stance highlights the belief in competitive individualism and the maximisation of the market. The notion of the postdigital includes disenchantment with current information systems and media, and a tendency to focus on the experiential rather than the conceptual. The postdigital might be perceived by some authors as signalling a period of change (Fuller & Jandrić, 2019); here it is seen as a liminal and disruptive space in which to untangle the impact of the digital on diverse systems (economic, sociological, political and ethical) and relationships.

Why is postdigital learning important for PBLonline?

Postdigital learning encourages students to stand at the borders of knowledge and to question and critique. Such questioning and critique mean that students will be encouraged to explore the knowledge put before them and, indeed, the way it is presented to them. Thus, it is political, because it seeks to interrupt and disrupt through a stance that is always querying the *status quo*. Yet this form of learning and the teaching that prompts this kind of critique is not comfortable. To learn and teach in the postdigital is to continually experience conscientisation and disjunction. Freire (1974) explored how deeply embedded values affect dialogue, adopting the term 'conscientization' to describe the process whereby people come to understand that their view of the world and their place in it is shaped by social and historical forces that work against their own interests. Students need to engage with complex issues and experience consciousness raising as well as realising the value of getting stuck in learning

Tutors need to embrace the idea that PBLonline is a flexible pedagogy, as mentioned in chapter 1. If flexible pedagogies are to be adopted, that focus on human becoming rather than just human beings, then the use of behavioural objectives needs to be dismissed in favour of Stenhouse's (1975) learning intentions. The idea of conditions of flexibility is a challenge in the face of claims by tutors that students remain entrenched and still want to be given lectures and write essays, despite little reflection from academics about how students may have become quite so entrenched in the first place. Some of the questions that need to be asked in the context of a desire for flexible pedagogies are as follows:

- Why are objectives still useful?
- What are the boundaries and borders of a discipline and who decides?
- To what extent does credit transfer and modularity result in flexibility?
- What are the most effective ways of ensuring quality?

- How can shifts be made away from quality standards and professional bodies that are risk-averse?
- To what extent are disciplinary norms and learning outcomes useful in the 21st Century?
- How can institutions become 'unmanaged' by bureaucratic administrators?

A PBLonline curriculum should be a creation and a composition, a thinking space that is complex and multi-layered.

Reflections on why we wrote this book

The COVID-19 pandemic precipitated an abrupt shift from online teaching being considered optional, to being considered necessary (Dhawan, 2020). However, this radical and imposed change happened within an educational context that already had an increasing focus on blended and online learning, with growing interest in synchronous models of delivery (Wu, 2016). This is concurrent with a growth in the use of problem-based learning, yet there is still relatively little information about the theory and practice of using problem-based learning online. There is global interest in using problem-based learning online; however, experiences of these are only just beginning to emerge. With ongoing pressures for physical classroom spaces (Oude Vrielink et al., 2019), it is envisaged that higher education institutions will seek to preserve and develop the online learning approaches that have proved most valuable.

Even prior to the COVID-19 pandemic, it was argued that any discussions about face-to-face problem-based learning transforming into online problem-based learning should be about 'how best to', rather than 'whether to' (Kek & Huijser, 2017). The nature and processes of online learning have changed considerably over the last few years, during the COVID-19 pandemic, when pedagogic change was more reactive than considered (Dhawan, 2020). There also continues to be debate at both local and global levels about what counts as problem-based learning and what does not. Yet there remain difficulties in attempting to marry diverse types of problem-based learning with online learning, because some problem-based approaches become overly managed through the online environments. The result is that in some cases, undertaking problem-based learning online becomes more about managing knowledge and information and developing a virtual space to deposit such knowledge, than actually engaging students in a collaborative online process. This book engages with these dilemmas and offers possible solutions.

Problem-based learning as a learning approach relies heavily on effective team collaboration; a skill deemed invaluable for graduate employment (Martin et al., 2008). To date, many universities still use virtual learning environments (VLEs) for learning as they are seen as safe learning spaces (Farrelly et al., 2020), yet such spaces do not always facilitate effective team learning. The success of collaborative working often centres around the meaningful interactions within these spaces and the ways in which they are facilitated (Saqr et al., 2020; Wu, 2016). There is a need to explore the kinds of technologies that support problem-based learning most effectively and how collaborative learning can be supported therein. This book explores new environments, suggesting some practical ways to improve online collaboration for effective teamwork.

Conclusion

Problem-based learning remains a contested area of pedagogy, practice and research. While problem-based learning is still undergoing a process of change worldwide, such change has been analyzed by few in the field of higher education. This book brings together new research and ideas about how PBLonline might be rethought for the 21st-century university.

References

Bouilheres, F., Le, L. T. V. H., McDonald, S., Nkhoma, C., & Jandug-Montera, L. (2020). Defining student learning experience through blended learning. *Education and Information Technologies*, *25*(4), 3049–3069. https://doi.org/10.1007/s10639-020-10100-y

Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, *49*(1), 5–22. https://doi.org/10.1177/0047239520934018

Dost, S., Hossain, A., Shehab, M., Abdelwahed, A., & Al-Nusair, L. (2020). Perceptions of medical students towards online teaching during the COVID-19 pandemic: A national cross-sectional survey of 2721 UK medical students. *BMJ Open*, *10*(11). https://doi.org/10.1136/bmjopen-2020-042378

Farrelly, T., Costello, E., & Donlon, E. (2020). VLEs: A Metaphorical History from Sharks to Limpets. *Journal of Interactive Media in Education*, *2020*(1), 1–10. https://doi.org/10.5334/jime.575

Fraser, H. M. (2022). *The influence of structure and agency on tutor approaches to facilitating problem-based learning across disciplines.* [Doctoral thesis, University of Worcester]. https://eprints.worc.ac.uk/12626/

Freire, P. (1974). *Education: the practice of freedom.* Writers and Readers Ltd.

Fuller, S., & Jandrić, P. (2019). The postdigital human: Making the history of the future. *Postdigital Science and Education*, *1*(1), 190–217. https://doi.org/10.1007/s42438-018-0003-x

Haslam, C. R., Madsen, S., & Nielsen, J. A. (2021). Problem-based learning during the covid-19 pandemic: Can project groups save the day? *Communications of the Association for Information Systems*, *48*(21), 161–168. https://doi.org/10.17705/1CAIS.04821

Jandric, P. (2019). The postdigital challenge of critical media literacy. *The International Journal of Critical Media Literacy*, *1*(1), 26–37. https://doi.org/10.1163/25900110-00101002

Jones, K., & Sharma, R. S. (2020). On Reimagining a Future for Online Learning in the Post-COVID Era. *Social Science Research Network*. https://doi.org/https://doi.org/10.2139/ssrn.3578310

Kek, M. Y. C. A., & Huijser, H. (2017). *Problem-based learning into the future: Imagining an agile PBL ecology for learning*. Springer. https://doi.org/10.1007/978-981-10-2454-2

Martin, L., West, J., & Bill, K. (2008). Incorporating Problem-Based Learning Strategies to Develop Learner Autonomy and Employability Skills in Sports Science Undergraduates. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *7*(1), 18–30. https://doi.org/10.3794/johlste.71.169

Oude Vrielink, R. A., Jansen, E. A., Hans, E. W., & van Hillegersberg, J. (2019). Practices in timetabling in higher education institutions: a systematic review. *Annals of Operations Research*, *275*(1), 145–160. https://doi.org/10.1007/s10479-017-2688-8

Peters, M. A., Jandrić, P., & Hayes, S. (2021a). Biodigital Philosophy, Technological Convergence, and Postdigital Knowledge Ecologies. *Postdigital Science and Education*, *3*(2), 370–388. https://doi.org/10.1007/s42438-020-00211-7

Peters, M. A., Jandrić, P., & Hayes, S. (2021b). Biodigital technologies and the bioeconomy: The Global New Green Deal? *Educational Philosophy and Theory*. https://doi.org/10.1080/00131857.2020.1861938

Saqr, M., Nouri, J., Vartiainen, H., & Malmberg, J. (2020). What makes an online problem-based group successful? A learning analytics study using social network analysis. *BMC Medical Education*, *20*(1). https://doi.org/10.1186/s12909-020-01997-7

Savin-Baden, M. (2007). *A practical guide to problem-based learning online*. Routledge. https://doi.org/10.4324/9780203938140

Savin-Baden, M. (2021a). *Postdigital humans: Transitions, transformations and transcendence*. Springer Nature. https://doi.org/10.1007/978-3-030-65592-1

Savin-Baden, M. (2021b). *Postdigital humans: Transitions, transformations and transcendence*. Springer Nature.

Savin-Baden, M., & Fraser, H. (2024). Rethinking Problem-based Learning for the Digital Age: A Practical Guide for Online Settings. In *Rethinking Problem-based Learning for the Digital Age: A Practical Guide for Online Settings*. https://doi.org/10.4324/9781003258322

Savin-Baden, M., & Wilkie, K. (2006). *Problem-based learning online*. McGraw-Hill Education (UK).

Stenhouse, L. (1975). *An introduction to curriculum research and development*. Heinemann.

Wu, Y. (2016). Factors impacting students' online learning experience in a learner-centred course. *Journal of Computer Assisted Learning, 32*(5), 416–429. https://doi.org/10.1111/jcal.12142