

Preface

ABSTRACT

This book is intended to enhance thinking in interprofessional and interdisciplinary learning by considering how such education might be approached differently, by capitalizing on the opportunities offered by technological advances. It showcases developments as well as stimulating ongoing debate about the practical, theoretical and pedagogical implications of technology enhanced interprofessional (IPL) and interdisciplinary learning. As such the target audience are educators, course designers and managers in academia, although large scale employers, particularly in the field of health and social care could benefit from insights with regard to workforce development.

Although sceptics might argue that there is no substitute for first-hand interaction with colleagues and learners from different professions and disciplines, it is clear from the discussions within this book that technology potentially offers a multitude of opportunities to interact and engage in dialogue that can mimic real time interaction in a relatively safe environment. Discussants can experiment with ideas, explore values and beliefs and even play with tentative identities online in ways that would not otherwise be possible. The debate is therefore more nuanced and concerned, with questioning the extent to which interprofessional or interdisciplinary learning can be mediated through information and communications technologies.

A distinguishing feature of the book is its international flavour. While to an extent it showcases the work of the Centre for Interprofessional e-Learning (CIPeL), based in the UK, the work of the Centre is placed in the context of global developments in the field. This has led to an international volume with contributors from Australia, New Zealand, Canada, Sweden and Norway, as well as from several higher education institutions in the United Kingdom.

A major challenge for the book is that it seeks to bring together three key concepts and attendant practices by exploring interprofessional learning, interdisciplinary learning and the use of e-learning. All are in some ways contested concepts; technology can be accused of tending to lead pedagogy if careful thought is not given to intended outcomes; interprofessional learning can reinforce negative stereotypical behaviour if not prudently managed; and interdisciplinary learning, because it is not 'owned' by the discipline, can be perceived as peripheral.

Any one of these aspects could fill a book in itself; and in attempting to capture this breadth, this book will inevitably disappoint some readers. However, the aim is to provide a snapshot of developments in interprofessional and interdisciplinary e-learning at the end of the first decade of the 21st century. Notwithstanding evidence of the use of Web 2.0 technologies, the approaches explored within this book tend to favour Virtual Learning Environments (VLEs) and Social Constructivist pedagogies.

Aside from these commonalities there is wide diversity, and no single definitive answer is suggested as the ‘best’ approach to facilitate online interprofessional or interdisciplinary learning. In bringing together these concepts, chapter authors have had leeway to use their own voices and present their own local meanings, with an emphasis on description or depiction. This allows insight into the constraints and affordances of the context in which they work, so the reader can appreciate some of the issues with which the authors have been confronted and consider these in relation to their own development and implementation plans.

BOOK STRUCTURE

The book is divided into five sections that broadly reflect the process of developing, implementing, storing and evaluating resources and approaches through a series of case studies. The first section is introductory, exploring the nature of interprofessional and interdisciplinary working and education, and setting it in the context of the recent history of computers in education and how people relate to virtual environments from the World Wide Web to 3-D worlds. These chapters challenge the reader to consider where their own practice might be located within this matrix. They also provide an overview of IPL and the technological base of education in the early 21st century, a lens through which to view the rest of the book.

The second section considers issues of curriculum design, providing insights drawn from empirical and theoretical or conceptual research and evaluation that might impact on curricula designed with the purpose of promoting IPL. It addresses a range of concerns, from the centrality of communication, the promotion of authenticity in learning resources, inextricable links between community and collaboration, student leadership and the relationship between interprofessionalism, attitudes and expertise. These chapters offer food for thought about overarching issues for academics who are developing an interprofessional curriculum.

Section three is concerned with implementing change and dealing with its consequences. It offers insight into challenges and opportunities in attempts to integrate e-learning and interprofessional or interdisciplinary learning. It presents a suite of honest accounts of issues encountered by academic staff at various stages of implementing curriculum change, and in some cases, research and evaluation into the impact of e-learning initiatives. Perspectives on cross sector collaboration, developing resources, institutional processes and structures, teaching approaches and interprofessional e-learning champions will be influential in helping others involved in implementing change reflect upon how they themselves might avoid pitfalls and take short cuts to optimizing success.

The fourth section focuses on the nature and processes of creating and managing the use of e-learning resources that promote IPL, beginning with the notion of interprofessionalism as a design philosophy that can facilitate the creation of reusable e-learning objects. It progresses to discuss how these resources can be used and re-used across different educational contexts, the educational theories that academics consider when building e-learning objects, and their impact on both learners and tutors. These chapters offer a detailed grounding in the issues that one is likely to encounter when developing and deploying such resources in IPL.

The final section looks forward to explore future possibilities that take interprofessional e-learning (IPeL) and interdisciplinary e-learning (IDeL) beyond the physical university, and beyond the personal computer. In considering technologies already in use, it explores practical considerations when using

ICT to support interprofessional learning in the workplace, on mobile devices and in virtual worlds, and discusses the value of such learning to students. These chapters offer insights into the possibilities that e-learning offers, both now and in the near future. Indeed, the final chapter speculates on where technology in education can lead, and how emerging technologies might influence interprofessional e-learning over the next decade.

OUTLINE OF THE CHAPTERS

The introductory section of the book sets interprofessional learning and its mediation through e-learning into context. In Chapter 1, Lynn Clouder and Steve Smith analyse differences between a ‘profession’ and a discipline’, drawing on arguments in the literature claiming that ‘profession’ has connotations of ideology and carries a practice element, whereas ‘discipline’, ‘can be understood as ‘a field of study’. They argue that the challenges facing the promotion of collaboration, a concept of interest to both disciplines and professions, are similar. They discuss these challenges in terms of the nature of knowledge; structural challenges; issues of identity and practical and logistical issues. They conclude that mutual incomprehension across specialists from different subject domains is no longer tenable and that higher education institutions need to prepare graduates for the contemporary world of work.

In Chapter 2, Adrian Bromage argues that expertise in interprofessional working can be defined as effective team working, placing the client’s needs as paramount. He explores this in terms of literature about the nature of interprofessional education, interprofessional working and psychological literature on the development of expertise. He argues that interprofessional working can be regarded as both attitudinal in nature, and also as a particular model of problem-solving expertise. He suggests that viewing interprofessionalism as both an expertise and an attitude highlights and brings into focus the potential power of finding ways to link it to learners’ pre-existing beliefs and values, in particular shared professional values, and as such can address some of the challenges faced in developing interprofessional collaborative skills among different groups of learners.

Samuel Edelbring, in Chapter 3, focuses on the use of technology in learning. His chapter examines the challenges for educational institutions to not only make the best use of technology but also to keep abreast of technological change and the seemingly increasingly rapid rate of development and innovation. He considers the place of technology in interprofessional education in particular, employing the familiar ‘learn with, from and about’ mantra that is our interprofessional byword, but changing the order slightly to discuss learning from technology, with technology and about technology. He calls for plurality in researching technology in education and points to its importance to the education and practice of interprofessional care.

In Chapter 4, Martin Oliver reviews pedagogical developments around e-learning in interprofessional education focusing primarily on the UK and providing a context for the remainder of this book. He explores research approaches employed concerning relationships between technology and the curriculum, beginning with an orienting discussion of curriculum as a field of study. He discusses how both e-learning and interprofessional learning suffer from a lack of evidence for their value, and explores the opportunities and difficulties around how e-learning might contribute to solving pedagogical challenges of interprofessional education. He concludes that all involved in this area share the challenge to build understandings of the complexities that we face when using e-learning to deliver interprofessional education.

Chapter 5, by Mark Childs, provides a discussion of the use of technological platforms to support a range of activities used in online approaches to interprofessional education. He argues that the various technological platforms available for education can be best understood by considering them as grouped into two main types, those emphasising learning from content, and those emphasising learning with and from others. He acknowledges that this distinction is in some aspects artificial, but is a useful explanatory tool for those new to these technological approaches. He concludes with a discussion, from the perspective of interprofessional learning, of how different platforms might support social engagement, community and the development of professional identity.

The second section of the book focuses on curriculum design issues. In Chapter 6, Marion Brown compares face-to-face and online delivery of critical diversity education for health and social care professionals in an interprofessional learning context in Canada. She concludes that diverse ‘classrooms’ challenge educators to utilise a range of approaches to teaching and learning, and suggests that rather than seeing online and face-to-face campus learning as dichotomous, mixing ‘methods, the media and the messages’ is advantageous.

In Chapter 7, Heather Mac Neill, Scott Reeves, Elizabeth Hanna and Steve Rankin focus on community and collaboration in an IPeL context, considering online learning through a social constructivist lens. They explore potential gains and limitations of delivering IPL online and theorise their thinking with respect to the ‘community of inquiry framework’. They discuss the novel “build-a-case” approach, and recommend its transferability to other health professional programmes.

Chapter 8, by Patricia Solomon and Sue Baptiste, presents evaluation findings on the extent to which students can learn the fundamental principles of interprofessional communication online. They authors conclude that while ‘ultimately students need to practice their communication skills face-to-face’, they acknowledge the benefits of an online approach to developing interprofessional awareness and communication skills, and advocate it as a useful component of an overall IPE curriculum.

Chapter 9, authored by Lynn Clouder, Marie Krumins and Bernie Davies, focuses on a curriculum innovation that involved students taking on the role of student facilitators for a large scale IPL initiative. Evaluation findings suggest that students make very capable online IPL facilitators, and offer some additional benefits to academic staff facilitators.

In Chapter 10, Helen Bradbury, Melissa Highton and Rebecca O’Rourke offer an honest and reflective account, in case study format, exploring the introduction of collaborative e-learning activities into an interprofessional teacher education programme, a Master of Education in Clinical Education (MEd CE). The findings, drawn from the design and implementation of an educational research methodology module, provide valuable insight to others interested in fostering collaborative and interprofessional learning.

The final two chapters in this section are both concerned with involving service users and carers in interprofessional learning. Chapter 11, written by Frances Gordon, Karen Booth and Helen Bywater provides insight into the ways in which technology can overcome many of the barriers to the effective engagement of service users and carers in interprofessional curricula. The authors share practical and theoretical ideas underpinning involvement, and provide several examples of how principles have been put into practice.

Chapter 12, by Tarsem Singh Cooner focuses again on overcoming barriers to involvement of service users and carers. This chapter explores the properties of Web 2.0 tools and processes to enable mental health service user and carer involvement. However, it advocates the need for the technology to be underpinned by a framework for communication, and collaboration and again recommends ‘the ‘community of inquiry’ model explored previously in Chapter 7.

Section three is concerned with implementing and dealing with the consequences of change. Pat Bluteau and Ann Jackson begin this section in Chapter 13, exploring the challenges of implementing interprofessional e-learning using a case study of the implementation of an interprofessional e-learning pathway (IPLP) shared across two universities. The IPLP was a CIPeL-driven curriculum development, commencing in 2005/2006, to bring together 1,800 students from 14 different health and social care disciplines. The authors' findings highlight the importance of strong leadership at key points within this process, in order to drive the change process through difficult periods.

In Chapter 14, Stephen Timmons, Heather Wharrad, Paraskevas Vezyridis, Jacqueline Randle, Joanne Lymn and Fiona Bath-Hextall report on a qualitative evaluation of the process of building and sustaining collaborative reusable e-learning object development across three educational sectors, Higher Education (HE), the UK National Health Service (NHS) and Further Education (FE) Colleges. The authors strongly recommend that development teams reflect upon their own interprofessional team working, ensuring that all team members are aware that Media Designers are not mere translators of ideas into a digital format, but have much expertise to offer, on an equal footing with other team members.

Dawn Foreman and Marion Jones emphasise in Chapter 14 the critical importance of learning facilitators' own understanding and knowledge of e-learning in the process of implementing interprofessional e-learning. When facilitators understand approaches to the development of positive e-learning environments, they can more readily understand how to overcome barriers to online interprofessional education. Thus the implementation of interprofessional e-learning can proceed more smoothly than would otherwise be the case.

In Chapter 16, Maggie Hutchings, Anne Quinney and Janet Scammell draw upon an evaluation of student and staff experiences of an interprofessional curriculum, incorporating health and social care users and carers as case scenarios in a web-based simulated community, Wessex Bay. The authors highlight congruent and disruptive factors in negotiating transformative learning and cultural change. They make recommendations for practice in interprofessional education, and suggest future research directions that can inform the substance (interprofessional case scenarios) and spaces (discussion boards, chat rooms, classroom) for collaborative interprofessional learning.

Chapter 17, by Karen Harrison and Lorraine McFarland, reports on a case study carried out in the context of a CIPeL-driven curriculum development that commenced in 2005/2006 to bring together 1,800 students from 14 different health and social care disciplines in an InterProfessional Learning Pathway (IPLP). The authors report the experience of two of the fourteen professional groups, dietetics and physiotherapy students. In general, both groups felt the IPLP learning experience had a positive impact on their awareness of other roles and interprofessional issues, and offered greater insight into the total clinical pathway of individual patients.

Section 4 of the book includes examples from Europe and further afield of the creation and management of e-learning resources that promote IPL, including reusable e-learning objects. Laurence Habib and Marit Fougner start the section in Chapter 18 with an analysis of the use of a video trigger as a pedagogical tool to facilitate interprofessional understanding in several professional courses in health sciences in Norway. Using actor-network theory as an analytical tool, the authors discuss the existence of a dichotomous relationship between technology and pedagogy, which is the source of major challenges in such work. They also recommend that senior management are involved in such projects to facilitate communication between project teams.

Chapter 19 moves back to the UK; Frances Gordon, Karen Booth and Helen Bywater of the Centre for Interprofessional e-Learning (CIPeL), provide new insights into the underpinning pedagogy

of e-learning that supports the development of collaborative skills in health and social care. Drawing on a qualitative case study undertaken by the authors, they explore the working theories employed by academics when creating e-learning materials to support interprofessional education initiatives in the context of undergraduate, pre-qualifying courses for health and social care.

In Chapter 20, Richard Windle and Heather Wharrad focus on the definition, development and characteristics of reusable learning objects (RLOs) and outline examples of how such objects are meeting the challenges of IPL. They conclude that RLOs represent an e-learning format with a great potential for use within the interprofessional setting, providing a community of practice model to harness and empower a range of stakeholders.

Chapter 21, also written by Heather Wharrad and Richard Windle, provides further case studies involving interprofessional RLOs, arguing that it is important to consider a development and evaluation framework, including technical expertise and quality control, at critical stages. They stress that the key to high quality materials is to bring the interprofessional community together during the design process, and to have a firm focus on underlying pedagogical design principles.

Helen Lynch and Kerry Trabinger concentrate in Chapter 22 on the customisation and interprofessional application of toolbox objects. They describe a class of pedagogically rich and sophisticated e-learning objects created for the Australian vocational education and training system. Their chapter focuses on the tools and techniques of customization, and presents a model of reuse that can be implemented elsewhere with any pedagogically rich web based e-learning object in inter-vocational and interprofessional settings.

In Chapter 23, Karen Ousey and Stephen White present a case study exploring a multi-disciplinary collaborative initiative that aims to meet the learning needs of fourteen different health and social care professionals. They stress that one benefit of online content is that learning can be undertaken when convenient for the mentor, with the facility to stop and restart as needed.

The team of Chris Dearnley, Melissa Owens, Pete Greasley and Caroline Plews describes in Chapter 24 an innovative interprofessional education (IPE) module delivered with a blended approach of face to face teaching and online problem based e-learning (PBeL) activities. They found significant differences in how different professions experienced the same curriculum, identifying several key issues, in particular the influence of module timing on student engagement, the development of IT skills and managing differences in professional epistemology and philosophy.

Finally Gerard Wood and Song Wu provide in Chapter 25 a case study of the development and implementation of an interdisciplinary e-learning module for students from five different disciplines. Overall, students responded positively to the module and academic tutors and visiting practitioners were also positive about student performance; however, the study highlights the challenging nature of implementing interdisciplinary working within the built environment context. The greatest challenges concern managing large numbers of students in teams, and composing clear requirements with associated assessment criteria.

The final section of the book explores possibilities that can take interprofessional e-learning (IPeL) and interdisciplinary e-learning (IDeL) beyond the physical university, and beyond the desktop and laptop PC to hand-held mobile computing. Chapter 26, by Nina Godson and Adrian Bromage, reports a small-scale feasibility study into the use of mobile devices, personal digital assistants (PDAs) to support student nurses' learning on clinical practice placements. The study focuses on the practicalities, including selecting suitable devices, training and supporting learners in using the devices, and 'usability' of the devices in a clinical setting.

The use of such devices is also explored by Christine Dearnley, Stuart Walker and John Fairhall in Chapter 27. The authors explore the use of hand-held mobile ICT to increase the accessibility of learn-

ing for students with disabilities. In this case, they demonstrate how the features of mobile devices were used to support the organisational, memory and writing needs of students with dyslexia. The authors make recommendations for implementing mobile assessment for practice learning that are based on a theory of mobile learning designed for accessibility

In chapter 28, Elinor Clarke documents a small-scale pilot action research study of the use of a 3-D multi-user virtual world in interprofessional education. Such virtual worlds have in recent years been recognised as a space in which learners in diverse physical locations can potentially meet simultaneously to role-play in scenarios, which have an authentic look and feel to them, as if a ‘virtual movie set’. The chapter brings home the practicalities, both in terms of the necessary physical infrastructure to support such learning, and the challenges it presents to both facilitators and learners, and makes suggestions for future research in this emerging area.

In Chapter 29, the final of the book, Andrew Brooks, learning technologist at CIPeL, writes a more speculative chapter that outlines recent and developing innovations in information and communications technologies, with an emphasis on getting education out of the classroom and into a world that is itself increasingly becoming integrated with digital environments. In doing so, he challenges the reader to speculate on where the adoption of these innovations in education could lead, and to reflect on how this might further influence interprofessional e-learning over the next decade.

FINAL WORDS

How can one summarise the themes emerging within this book as a whole? While acknowledging that e-learning is not a panacea, and must be approached critically, it is clear that relying on face-to-face learning activities only can be limiting, and in fact is no longer necessary, as information and communications technologies (ICT) are embraced increasingly in the academy, and indeed, the workplace. It can be argued that by encouraging collaboration online, we mirror the demands and working practices that are becoming typical of the contemporary workplace. Furthermore, as curricula are adapted to take into account interprofessional or interdisciplinary concerns, it becomes clear that logistical problems are a major barrier if the aspiration is to achieve learning on any reasonable scale. This is where interprofessional e-learning comes into its own; its ability to transcend boundaries of time, location and academic discipline are persuasive.

We encourage the reader to reflect upon the overlap between the chapters; these areas of commonality are indicative of common themes and concerns for those who would seek to develop interprofessional and interdisciplinary e-learning. These overlaps also serve to reinforce the fact that curriculum development is an holistic activity, and should be approached as such if lasting and embedded change is desired at an educational institution. Indeed, CIPeL’s approach was to develop and pilot e-learning innovations at Coventry and Sheffield Hallam Universities, and then to disseminate what was learned to the wider community of interprofessional and interdisciplinary educators across the United Kingdom.

It is worth reiterating that the book does not seek to give a single definitive answer for finding the ‘best’ approach to facilitate online interprofessional or interdisciplinary learning. The book offers a broad and diverse picture of how e-learning is beginning to impact on interprofessional and interdisciplinary learning at the end of the first decade of the 21st Century. It is the editors’ hope that this will help individuals and teams to progress their existing practices to the next meaningful developmental step, given their own needs and local context, and contemporary pressures on higher education.