

Preface

Writing and editing this book has been in many ways an application of the practice of blending face-to-face interaction with the use of information and communication technologies (ICT) that blended learning involves. With two editors living in Australia and New Zealand respectively, face-to-face planning and discussion took place only twice with several days spent in the beginning developing the proposal for the book and again after chapters were approved by reviewers. In between these meetings, constant e-mails and phone calls, there was time allowed for periods of independent writing and reflection followed by electronic discussion, often about quite involved levels of cognitive thought and sharing of writing, much as we hope that students experience with blended learning. Face-to-face discussions inspired some good ideas, and visual and diagrammatic sharing, but the independent reading and writing that supported collaborative discussion was done alone at our desks though with online communication and resources always at hand. This blend of interaction through face-to-face and ICT was also the means of several collaborative chapters being written for the book and for the three-reviewer process that was established for submitted chapters. Such blended learning practice is becoming the basis for much of today's academic research, collaborative writing, and course design, as well as for professional learning through online communities interspersed with opportunities for synchronous communication and/or face-to-face meetings. Though the term *blended learning* has achieved widespread acceptance, its application to academic and professional practice has led to this book's title terminology of *blended learning practices* which brings a much wider scope of focus to this new field of ICT-facilitated education.

Over the last two decades with the development of new technologies with great potential for learning, ICT-facilitated education has been widely adopted while online learning has also transformed many adult learning contexts. The resulting integration of online technologies and practices into physical settings has transported online learning from predominantly distance contexts to that of campus, work- and community-based settings. Blended learning is now a widely-accepted term to describe the range of teaching and learning strategies which have arisen from the mixing of different physical or virtual environments in universities, communities and the corporate sector. As the capability of online learning technologies have expanded and new learning environments have become possible, new issues about pedagogic values and the role and shape of online communities and the professional learning for teachers have also arisen. The relative newness of online learning within blended environments means that there has been a need for research on which to base good teaching practice and this book addresses this issue.

The integration of online and ICT-facilitated practice within campus-based and face-to-face settings has resulted in a concept of blended learning which is now also used within distance contexts and workplace setting. This contemporary mix of physical and virtual learning environments is the foundational concept of this text and is explored from three different perspectives: blended university teaching and learning, communities of learning and practice, and teacher transitions and professional learning. The chapters of this book provide research perspectives on a range of blended learning issues and contexts

and discuss implications for teaching and learning. The book also links its research to practice through its discussion of pedagogy and recommendations for blended learning practices.

Many current texts about online learning have either presented an overview of the field or are anthologies of ICT-based pedagogic initiatives with a strong practitioner perspective. This text complements these approaches by adding substantive research-based commentaries about ICT-facilitated education in blended environments. The predominant use of qualitative approaches in the book means that the discussion is situated in educational and community settings and enables a grounded consideration of issues and outcomes which is also connected to theoretical and conceptual thinking in the area. The focus on ICT-facilitated communication provides new knowledge about the ways in which these environments support learning and development for a wide range of blended learning settings. The grounded nature of the research provides detailed information to enable readers to consider its applicability to their own research or teaching contexts. The emergence of blended learning signals a new conceptual way of considering E-Learning or online learning which spans the historically separated settings of learners who are distant from each other in place or time and learners who meet in face-to-face settings. Now, there are many other combinations of the use of virtual and physical spaces in learning and the blended concept has the potential to operate as a unifying force and provide new knowledge to both researchers and practitioners across these diverse settings.

There are three main sections to the book with an introductory chapter and a conclusion chapter. The sections focus on:

- Strategies for teaching and learning
- Establishing communities
- Teacher transitions and professional learning

The introductory chapter provides an overview of the complexity of blended learning both in the way it has been defined in the research literature so far and in the way this book extends this discussion. The first section of the book explores theoretical frameworks for blended learning while focusing on case studies of blended learning practice in universities around the world. The importance of curriculum design and assessment practices for effective blended learning is detailed and the integration of technological innovation into teaching and learning are examined critically with many ideas and recommendations for practice included. The second section explores both online communities and communities of practice and the blending of these virtual and physical aspects of community in a range of contexts internationally. Describing the explicit use of blended learning practices to establish more effective communities in workplaces and their intersection with online communities of learning both formal and informal is an important contribution of this book and provides a perspective that has not been clearly defined in the research literature so far. The final section provides a number of reports of research of teachers transitioning to blended learning practices with discussion of the pedagogical and institutional implications of this process. The final chapter draws together and synthesizes these issues and implications and provides detailed recommendations to provide an overall coherent approach for practitioners, course designers and institutional policy makers.

Elizabeth Stacey and Philippa Gerbic begin the book with an introduction to blended learning practices in ICT-facilitated education for supporting adult learners in different contexts. The concept of blended learning is introduced with a thorough discussion of the way the term is defined in the literature about the field. Generally blended learning has been considered as a requiring a combination of face-to-face interaction and online communication but their exploration of the literature finds a term ranging from being loosely defined as meaning any combination of learning modes to very specific categorized

combinations of technology use and traditional modes of learning even to a percentage based balance of online and face-to-face learning. This section also reviews the conceptual underpinnings and frameworks reported in a wide review of the international literature about blended learning and begins a comprehensive discussion of the field to date.

The literature about blended learning is then reviewed in relation to the three sections of the book with chapters about issues in teaching in learning the most commonly published aspect for discussion so far. As online learning has become pervasive throughout the higher education and training sector, the blending of modes has become more explicitly considered and the discussion in the distance education field about technology use and flexibility is included among the pedagogical issues reviewed in this section. Less explicit in the literature is the acknowledgement of blended learning practices for professional learning and for establishing communities of learning and practice but this is becoming important to institutions realizing their value and need and is analysed and discussed in the following two sections of the chapter. Through the literature review the introductory chapter provides a rationale for the research-based chapters that follow.

Section I: Strategies for Blended Teaching and Learning, provides research-based strategies for preparing to teach effectively through the mediation of ICT, contributing to the discussion on evidence-based pedagogy. It provides international perspectives on the blending of traditional face-to-face teaching with technological innovations with sound reflection on the pedagogical issues these practices raise. The authors provide researched cases of the application of blended learning with a greater range of examples of blended learning in undergraduate education which has been traditionally taught in a face-to-face mode in the international contexts described and which is the focus of research identifying the most effective blending of technologies into this learning environment.

Philippa Gerbic describes case study research through which she investigated online discussions within blended environments in an undergraduate campus-based business degree program in New Zealand. Theorising online learning from a constructivist perspective she researched important aspects of the online environment including its text-based nature, time flexibility and interaction opportunities. She gathered student perspectives of the blended learning processes they experienced and she provides insights into influential factors for undergraduate student learning, particularly through the design of the learning context, its learning activities and assessment and the role of the teachers in how effectively online learning is integrated into their blended learning approach. She describes how the online environment can be used in a complementary way to exploit the reflective nature of online learning while the face-to-face environment should be the place where the teacher prepares students to interact online with carefully designed discursive activities that use the potential of the online medium. The pedagogical aspects of such blended learning practices are analysed and its advantages for students in the study for whom English is a second language are discussed. Gerbic discusses the wider implications of her findings and provides evidence based practical recommendations for blended learning practices that will be of great use to teachers in many educational contexts.

Ruth Geer draws on a study of Australian undergraduate teacher education students whose on-campus interaction is complemented by both individual and collaborative group activities in an online environment. Geer, too, describes the strengths of text-based reflective learning through on interactive online community and reports the advantages of students' ability to establish social presence through face-to-face interaction though this too needs online design assistance. Through analysis of students' online postings, she interprets their learning from both cognitive and social constructivist perspectives and develops a pedagogical framework that helps to inform blended learning practices and outlines the relationship between pedagogies, technologies and their related learning outcomes. Geer aimed to explain students' learning processes in this learning environment and her findings enable her to recommend instructional

design attributes to assist teachers in achieving effective blended learning processes. Her framework for technology-mediated interactions (TMI) will help teachers designing blended learning environments through aligning learning outcomes they want to achieve with the interactive pedagogies enabled by a listing of interactive technologies available in universities today including learning management systems, social software tools and more innovative audiovisual technologies. Geer's detailed explanation of her research analysis tools will provide researchers with suggestions for ways of researching blended learning environments.

The process and pedagogical principles involved in redesigning traditional on campus and distance courses into a blended learning mode is described in a study from New Zealand by Mary Simpson and Bill Anderson. Rather than develop separate courses delivered by different modes to differing groups of students (usually younger on campus students and mature age students studying at a distance) the implementation of blended learning practices meant that these groups and modes could be integrated. Using survey data as their evidence of student perspectives, Simpson and Anderson draw on principles of adult learning and of online learning communities and designed a course and online learning environment that acknowledged learner independence and learner centredness as well providing as a non-course online gathering place for social student interaction and a staff development site of online resources. Their redesign blends a range of technological possibilities with audiovisual digital files contributed by students as well as teaching staff. The blending of student groups, the distance students more dependent on online interaction than the on campus, also meant there was the basis for a collaborative community also designed into the program with aspects of seminar participation and E-Portfolio development as assessable items in the courses. Simpson and Anderson recommend their model of a pedagogical basis for redesign rather than being driven by the potential of available technologies despite the importance of their role in the blend.

The international perspectives of this book are particularly captured in two chapters in this section that describe European responses to blended learning. In a chapter about the integration of innovative technologies into blended learning environments, Ana Carvalho reports on Portuguese research into the use of podcasts and Zdena Lustigova and Frantisek Lustig describe a project that enables the handling of real objects in science experiments by students at remote locations, a blending of real and virtual objects. Students in Carvalho's research study found the use of podcasts, delivered through the learning management system, Blackboard, were effective pedagogically and motivationally for students. The teacher recorded short podcasts to provide instruction about online discussions and feedback on their online postings and presentations. The personalized response of the teacher's voice provided a stronger teaching presence online than written text and provides an example of blending with simple available technologies. Carvalho's research contributes recommendations for teachers to effectively integrate podcasts into their blended learning practice. Lustigova and Lustig's electronic labs (E-Labs) may not be as accessible a technology for all practitioners but provide an example of how blended learning has already integrated a blend of the real and the virtual into education, similarly to the potential that newer technologies, such as Second Life, will be implemented in the future.

Continuing in another chapter on European perspectives on the responses of teachers and learners to blended learning, Guglielmo Trentin draws on a range of Italian research in reporting on blended learning solutions in university teaching. Trentin describes how corporate training in Italy has begun to commonly use a blending of media and interaction modes for professional development and how these practices are being researched as they are used in the professional learning of higher education teachers and in the design and delivery of their courses. In analyzing teachers' choices of technology enhanced learning a categorization of approaches show a gradual move to blended learning as an integration of technology into course delivery with 48% of teachers using these approaches in the current year. Tren-

tin gives a detailed analysis of reasons teachers give for introducing blended learning practices from the pedagogical and technological dimensions to economical, socio-cultural, organizational and other dimensions. He provides many practical recommendations for the introduction of blended learning into higher education particularly in advising about the institutional support and training needed as teaching and pedagogical issues are considered. Steve Wheeler highlights the student perspective in his critical commentary on the nature of blended learning uptake in higher education in the United Kingdom. He provides a detailed analysis of the students of today (and potentially tomorrow) who are becoming lifelong learners and for whom blended learning is the only option in what he calls their *portfolio careers* that are often changing and needing new skills and *nomadic* professional learning. As universities respond to student needs, he maintains they rarely consult them but impose institutional learning management systems on students as the technological solution for blended learning whereas students often prefer personal and mobile technologies and communicate via social networking. Wheeler analyses current research in the United Kingdom to develop his argument for more student-centred technological choices in blended learning and raises issues that are applicable to universities worldwide.

Section II: Establishing Communities, involves a topic that has been well researched particularly since the seminal work of Lave and Wenger (1991) identified the importance of communities of practice in situated learning contexts, extended through the writing of Wenger (1999), and since the research of Garrison and Anderson (2003) and others began to explore online communities and identify their attributes and advantages in higher education and professional learning. As Robin Mason, a researcher, practitioner and international expert in the field of online learning since its inception, has pointed out in this book's *Foreword*, the value of online communities as authentic communities has been considerably critiqued and this critique is further discussed in the introductory chapter. In compiling this section of the book, we found the research on the impact of blended learning practices in establishing these communities was rarely made explicit and consider this one of the particularly important contributions the book makes. This section includes a range of perspectives on research into establishing communities through blended learning practices and is perhaps the place where the definitional discussion of blended learning is most complex. Whereas many of the chapter authors have defined blended learning as a combination of face-to-face instruction and online learning, these chapters investigate the complexities of this blend. Advantages of multiple community memberships are explored, particularly whether potential tensions between face-to-face communities and online communities exist and how best to use the blending of face-to-face interaction and ICT-facilitated communities for professional learning.

Peter Smith, Elizabeth Stacey, and Tak Ha have supported their discussion about issues in establishing communities from several research projects located in both Australia and Hong Kong that they describe in the first chapter of this section. Their focus is on how formal learning communities can be blended with more informal and often naturally occurring workplace communities, and the interaction that can occur as they make a case for including this phenomenon in the definition of blended learning. They first report research that investigates the use of blended learning practices in organizations as a tool for human resource development for a range of organizational roles. A research study of the use of blended learning practices for information technology professionals who learn within their workplace, either independently, with colleagues or in teams, as well as by using ICT-facilitated resources and through both formal and informal online communities, provides evidence for the importance of such practices in environments where knowledge is changing rapidly and the new members of the workplace community are often the experts in new knowledge. A third focus of the research explored the establishment of formal online learning communities and their interaction with workplace-based communities. Evidence of the importance of teacher presence in establishing meaningful online communities was found though there was little evidence of tension between online and workplace communities and recommendations of ways of using this blending of communities as an advantage is included in the chapter. In discussing factors

that “spoil the blend” of online and face-to-face communities they discuss another study of a community based organization, analyzing the reasons their research outcomes and its implications for practice.

Terrie Lyn Thompson and Heather Kanuka investigate how blended learning practices can be used for the sustained professional learning of teachers in higher education through the establishing of communities of practice. They report an extensive review the literature about communities of practice and, as in Robin Mason’s comments, they raise the problematic issue of whether such communities only form naturally or can indeed be constructed and managed. They report extended advice available in the literature about forming online communities and question whether professional development centres are able to develop such communities. Through interview and analysis of current practice in such centres in North America they investigate how blended learning practices are being used to establish face-to-face professional learning with ongoing online communities. The use of such blended learning practices were less common than they had anticipated and they found tensions between what was occurring in such centres and what they would like to achieve. Difficulties encouraging academic staff to use blended learning and the role of professional development centres as the appropriate one for establishing ongoing online communities are discussed. They suggest implications of their study for institutional policy and recommend possible applications of blended learning practices to establish effective communities.

Julie Mackey explores the notion of multi-membership of communities through the interaction and intersection of online communities and workplace-based communities of practice that extends the definition of blended learning practices as suggested by Smith, Ha, and Stacey above. She researched a group of New Zealand teachers who were learning in a formal online postgraduate course while also interacting with their school based communities of practice. Through interviews with the participating teachers as well as members of their communities of practice and analysis of their learning communities’ online interaction records, she provides evidence of the importance of the application of contextual learning through the local communities of practice. She suggests a reconceptualisation in designing blended learning to include this blending of communities so that formal learning is more authentic and meaningful and reflects a blending of formal and informal learning. Mackey’s theoretical interpretation of her findings adds a valuable dimension to blended learning and identifies the central role of learners using technology as a tool for blending the social contexts of their learning.

In a research study of a long-term professional learning community of Canadian teachers, Suzanne Riverin describes the blended learning processes of an online community established by the provincial education authorities of Ontario for the professional learning of teachers. There were some face-to-face meetings before teachers began communicating online to discuss classroom ICT applications and reflect on their local community of practice. The blending of both online communication and face-to face meeting established a social presence and cohesion in this community and this continued with a blending of asynchronous and synchronous communication to establish a community for collaboration with ICT projects, curriculum resources and professional development through online courses. Riverin analyses the components of the blended learning practices that were effective in establishing the community and describes factors of difficulty experienced by some participants joining the online community. Describing the community’s successful achievement of its objectives for professional learning and support, Riverin discusses the implications of this model of blended learning and recommends aspects of these practices for future online collaborative environments.

Section III: Teacher Transitions and Professional Learning, reports research that has been undertaken as universities realize the potential of integrating online learning and ICT-facilitated education into all courses and particularly into traditional campus-based institutions. Though online learning has been increasingly introduced into distance education programs over the last two decades, the flexibility of study that this way of learning provides is becoming more and more attractive to the new generation of technologically literate students as well as more mature students needing new professional learning even

if they are studying on campus. In the design for both on and off campus courses the blend of online with face-to face modes or at least with ICT-facilitated forms of audiovisual or synchronous communication is being found to be a most effective and flexible way of learning. However, as Mason reinforces in the *Foreword* of the book, teachers are not always ready to teach to these new modes of learning and they need effective support and professional development based on sound evidence of outcomes of as they transition to blended learning practices. The chapters in this section include research into cases studies of teachers and institutions undergoing this transition. It also includes frameworks and innovative models for designing blended learning courses and for providing professional learning for teachers.

In a study comparing the experiences and philosophies of two groups of university teachers in Canada and Australia who had made the transition to teaching in both face-to-face and online modes, Faye Wiesenbergh and Elizabeth Stacey found that the teachers had begun to blend their teaching approaches through using the best aspects of both these modes as they became more confident with ICT-facilitated education and reflected on the differences that their new professional learning was making to their teaching philosophies and practice. In this chapter, Wiesenbergh and Stacey compare university and course contexts as well as the teachers' perspectives and practices using methods and validated tools to identify similarity and differences between modes and then relate findings to a model of blended learning to interpret teacher transition to blended learning practices. From their findings they recommend support and professional development for teachers undergoing this transition from traditional university teaching to a blended learning mode to ensure that they have the opportunity to reflect on their teaching philosophies and pedagogical design to achieve the best aspects of both modes in their blended learning practice.

Gayani Samarickrema researched the institutional perspective of the transitional process of teachers adopting ICT-facilitated education and developing blended learning practices. Through an insider case study she interviewed academic staff at an Australian university about their reasons for adopting blended learning approaches and identified the supporting and constraining factors in their experiences as well as their motivations for adopting these practices. Though academic staff essentially wanted to teach students in the most effective and engaging way, they were driven by a range of reasons from voluntary adoption to policy driven directives to increase student numbers and course marketability as well as by student demand for ICT use. Samarawickrema identifies important factors for institutions to consider in a move to blended learning such as time and workload allowances supported by funding, rewards and acknowledgement schemes and particularly effective models of professional development and ongoing learning support. The vision and leadership of the institution with supportive infrastructure and policy need to be adjusted for the new blended learning practices to be most effectively adopted.

Gail Wilson reports a collective study of research-based evidence of experiences of academic staff adopting ICT-facilitated education and transitioning to blended learning practices in a regional Australian university. She analyses seven dimensions of blended learning environments that these teachers create and provides a valuable framework for practitioners, researchers and policy makers seeking to understand the transition to blended learning. Her framework centres on the teacher and their reasons for the transition, the nature of their blend and pedagogical approach, their perspectives on their role and challenges they encounter. The online dimension includes the media and activities used, online assessment and teacher support and the self-study dimension describes the independent student learning within the blended learning environment. She details the face-to-face dimension, the resource-based learning dimension and the institutional support and organizational context dimensions which all factor in teachers transitions to blended learning practices. The chapter provides case examples of all these dimensions and their basis for a professional development model to support staff in their transition to blended learning environments and can be used in successful institutional adoption of blended learning practices.

Many of these chapters have reiterated the importance of careful design and professional learning for blended learning practices to be successfully integrated into programs. The next chapter by Cathy Gunn and Adam Blake addresses both of these aspects by describing their design-based research that is used to integrate a blended learning process into the reconceptualisation of a course in academic practice for New Zealand university teachers. Using a continuous cycle of design, implementation, analysis and refinement and intertwining the development of these course learning environment with learning theory, they devised a blended learning approach through situated learning and describe the application of this approach to the *Learning, Teaching and Assessment* course. They provide detail of their iterative cycles and refinement of solutions after gathering feedback from stakeholders which will be particularly valuable for other designers of blended learning courses.

Within our introductory chapter we made a distinction in our understanding between professional development for skills training and professional learning that involves theoretically-based professional development that includes reflection on teaching practice and philosophies. Though such a distinction is not generally made, the next chapter in the book provides a research-based model that is an example of such a distinction in terms and could be the basis of such reflective professional learning as blended learning is introduced into programs. Brooke Robertshaw, Heather Leary, Andrew Walker, Kristy Bloxham, and Mimi Recker report their research into a process of *reciprocal mentoring* between student teachers and experienced schoolteachers that enables technologically skilled student teachers to provide the basis for professional learning as the experienced schoolteachers reflect on their technological expertise and provide direction for its effective blended learning practice in their classrooms. Such a model could also be adapted to universities as skilled educational development and technical staff work with teachers with more pedagogical experience who apply a reciprocal mentoring process to their professional learning about blended learning practices. “In the wild” in this case is a naturally occurring phenomenon which is investigated through a retrospective case study method, again a potentially useful model for research-based professional learning in many educational sectors.

The final chapter by Philippa Gerbic and Elizabeth Stacey draws together the main themes identified under the sections of the book and synthesizes the important concepts that have been discussed throughout the chapters of research. Recommendations for practice connect the outcomes of these research studies with practical suggestions in all aspects of blended learning practice. Finally, implications for the future field of blended learning are provided for all its stakeholders and suggestions for further research directions made which will be additionally useful to researchers and strategic planners.

This book will be of interest to anyone who is teaching or researching in the tertiary/postsecondary sector wanting to know more about ICT-facilitated blended learning. It is relevant for formal learning settings, for example, universities, polytechnics and private colleges and institutions and for informal settings, for example, workplaces and communities which want to support learning and professional development. The book will be useful for teachers and researchers who are working with a wide range for learners, including undergraduate and postgraduate students, adult learners and people working with those in a variety of occupational and professional roles. These are contemporary research perspectives from substantive research studies, a specialised focus on the use of ICT-facilitated education across a variety of blended settings, a learner-centred focus which covers learning in a wide range of settings and a discussion of implications for teaching and learning so as to support the development of evidence based pedagogies.

Elizabeth Stacey and Philippa Gerbic
Editors

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