The Virtual University in Practice

Sankey, Michael; Huijser, Henk; Fitzgerald, Rachel

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Michael David Sankey, Henk Huijser, and Rachel Fitzgerald

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Abstract

The virtual university is not a figment of one's imagination; it actually exists in many forms already. What this chapter does, however, is pull together all the thoughts and ideas of multiple scholars from around the world, to provide a cohesive suite of options one should consider if looking to establish a virtual

M. D. Sankey (✉)
Education Strategy, Charles Darwin University, Darwin, NT, Australia
e-mail: michael.sankey@cdu.edu.au

H. Huijser
Learning and Teaching Unit, Queensland University of Technology, Brisbane, QLD, Australia
e-mail: h.huijser@qut.edu.au

R. Fitzgerald
The Faculty of Business, Economics and Law, University of Queensland, Brisbane, QLD, Australia
e-mail: rachel.fitzgerald@uq.edu.au

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university from scratch. This is doable because of the breath of experience that resides within the body of authors contributing to this volume.

This chapter clearly demonstrates the imperative nature of the virtual university in a world that has been through substantial change over recent years, and where many ideas that where seen as fundamental to the successful application of higher education have been challenged. That is not to say that higher education itself have been left wanting, rather that the option to conduct higher education has been shown to not just survive, but to flourish in the virtual space.

Throughout this chapter, the lessons that have been learned by some 54 scholars will be summarized and placed into a solid agenda for consideration. It will not hold all the answers, but it will provide the reader with a fantastic place from which to start their journey when looking to establish a virtual university that takes the affordance of technology-enhanced learning and makes this vision not just doable, but desirable.

Keywords

Virtual university · Technology-Enhanced Learning · Higher education · TEL · Online · Quality

Introduction

We have come on quite the journey over 30 chapters. It is anticipated that although you may not have read all these chapters in detail, you will get the sense that for the virtual university to become a reality there are some significant affordances that can be gained by applying the principles outlined in this book. This chapter provides a summary of the key elements that would need to be addressed, if you are looking to establish a virtual university, and it will provide this in the form of a series of "main points to consider," covering each of the major elements found in the different sections of this book. In isolation, these chapters are complete in themselves, but as a collective of ideas, they have a dynamic that can be seen as foundational. If you find something in these summaries that particularly interests you, we encourage you to explore the chapters themselves in more depth.

To move the virtual university from fiction to fact requires a retrospective look at the lessons learned through the harder times of COVID-19, and a future focus that embraces the opportunities presented by newer forms of technology available to us linked with the affordances presented by artificial intelligence. These two factors, above anything else, have led educators to fundamentally rethink the processes required to empower a new generation of learners. Learners are not empty vessels that come to us waiting to be filled, but rather people who, when empowered by the opportunities that now exist, can be cocreators of new knowledge facilitated by their academic mentors. There is a very real sense that students can themselves be critical producers and not just consumers of knowledge. It is therefore the role of the virtual university to seize upon these opportunities within the context of students' lived

experience and linked to the fundamentals of the professions they aspire to, even if they create those themselves.

Student productivity and cocreation are not new thoughts of course, but they have risen to prominence since the wide-spread availability of new-generation artificial intelligence tools and emergence of user-friendly large language models, such as ChatGPT in late 2022. Indeed, educational institutions worldwide have been adapting their learning and teaching practices to leverage opportunities presented by the rapidly evolving landscape of technology and digital tools. While there has been a sense of excitement and potential, there has also been a significant amount of apprehension and caution too.

This of course plays right into the hands of, and the potential for, the virtual university, as these new functionalities work almost seamlessly with other online environments to provide more holistic platforms to promote student productivity. We return to this point later in this chapter as we look to provide a series of checklist elements to consider in embracing AI (artificial intelligence) in the curriculum offered by the virtual university.

Importantly, when considering the lessons found in this volume, please do not view them through the lens of a traditional institution. We are talking here about a new type of institution that learns from the past but is not encumbered by it. A great example of this is the challenges that institutions are currently facing due to the rise of AI. Back in early 2018 the Smithsonian Institute were warning society about the impending challenges AI would bring to education, suggesting that, along with automation, it would challenge, and even threaten, traditional forms of learning (Kak 2018). And yet, only now in 2023, 5 years later, are our universities seriously discussing the implications of this (Chen 2023).

These new approaches, however, only go to strengthen the case for the virtual university and the affordances offered to it by technology. It is therefore hoped that considering all the elements discussed in this book will go some way in forming the foundations of contemporary quality online practice. To help us embrace this, we now take you on a journey of discovery, to help you embrace many of the suggested practices that are on offer here.

Laying a Solid Foundation

It is fair to say that all universities start with, and continue to evolve, their strategic plans, and this is no less true for the virtual university. Aligning a vision for technology-enhanced learning with a master plan, which is then aligned with an institution's policies and procedures, provides the foundation for any university, including the virtual university. In chapter ▶ "Aligning the Vision for Technology-Enhanced Learning with a Master Plan, Policies and Procedures," Ashford-Rowe et al. clearly define how to create a strategy for the virtual university through the following steps:

- Establish a vision for digital transformation in learning and teaching that clarifies understanding of the concept of virtual university at the institutional level.
- Embrace digital transformation and focus on how to engage stakeholders.
- Create a master plan, a vision and planning instrument, that embodies policies and procedures that detail the critical steps for implementing digital transformation and keeping the processes transparent.
- More explicitly this would mean making particular attention to the fiscal resources associated with innovation adoption.
- Being clear about the institution's infrastructure such as the hardware, software, facilities and network capabilities in support of teaching resources, production resources, communication resources, student resources, and administrative resources.
- Being articulate about the needs, hopes, values, skills, and experiences of the people involved.
- Seeing a clear and definite alignment of institutional policies and procedures.
- Charting out the relationship between the technology and learning outcomes.
- Scheduling a regular evaluation and review, including the impact of the technology on learning goals.
- Seeing this through the lens of the support systems and then documenting the scaffolding required to ensure successful implementation.

Transparency plays a crucial role in change management as it fosters trust, minimizes resistance, and enables effective communication throughout the change process. Thus, for the virtual university, transparency is vital. However, too much transparency can be a double-edged sword. Smallman & Ryan muse on this in chapter ► "Developing Supporting Governance Structures to Sustain Technology Enhanced Learning" as they consider how transparency should underpin the governance processes of the virtual university. In this chapter, they highlight that

- Transparency is the core principle of good governance and is demonstrated by the willingness of an organization to provide clear information to all stakeholders.
- Too much transparency can paradoxically cause distrust; therefore, good governance frameworks, staff, and policy are essential to the future of the virtual university.
- Technology sits at the heart of developing transformation, so we need to position ourselves to accelerate the adoption and diffusion of Technology Enhanced Learning (TEL).
- Do not try to replicate the in-class experience online. Instead, consider design that exploits TEL delivered, supported by transparent academic governance.
- LMSs are brought to life by the careful curation of educators, but we should also prepare for future change in this space.
- Ed Tech (TEL) creates scale, and scale increases both access (social good) and revenue.
- Be clear in what makes up your TEL toolbox, and understand how we use this to expand our higher education experience.

- Academic governance and leaders must consciously lead in changing the mindsets and behaviors to fully integrate the practices of faculty and students.
- Properly train teachers in the context of TEL.

Of course, there is more to maintaining the quality of the virtual university than governance, and a range of other factors should be considered when looking to lay the right quality foundations and then maintaining those fundamental elements. This was partly discussed in chapter ▶ "Developing Supporting Governance Structures to Sustain Technology Enhanced Learning" and is clearly linked with institutional vision from chapter ▶ "Aligning the Vision for Technology-Enhanced Learning With a Master Plan, Policies and Procedures"; however, chapter ▶ "Laying and Maintaining the Foundations for Quality" takes us even deeper into this realm, providing us with some very practical considerations, including:

- Technology shapes the activities of the university and so executes and enables its strategies.
- TEL is not limited or defined by the strategic interests of its stakeholders, but its success is aligned to an investment plan to sustain a differentiated and capable suite of platforms.
- Technology platforms that use chaos to enable robustness and resilience are more likely to be enabled a rich mix of focused tools integrated by open standards.
- Management of information flows are key to successful operations and contribute to sense-making and quality improvement activities.
- Many quality systems fail due to a misalignment between strategic goals and operational measures. Quality measures and improvement activities need to avoid the trap of facile representations of brands and marketing.
- The quality foundations of the virtual university need to provoke improvements that positively engage with the mission and values of the institution.

The Virtual Learning Environment

Due to the ubiquitous nature of the virtual university and the propensity for this form of institution, by its nature, to be more open than more traditional institutions, the principles of social equity are in its very DNA. Of course, all institutions address this in various shapes and forms, but for the virtual university, ensuring there is an appropriate social equity framework in place is vital. We were cautioned on allowing technology to lead strategy in chapter ▶ "Laying and Maintaining the Foundations for Quality," and in chapter ▶ "A Social Equity-Based Framework Towards the Development of the Virtual University," Tay reminds us that digital inequity is growing despite the widespread use of technologies in education.

- In this chapter, we are asked to consider a framework that reduces social inequity through purposeful consideration of equitable access and opportunity.

- Enables leaders of the virtual university to recognize barriers and develop innovative strategies from the outset.

Unlike more traditional university practices, the virtual university can learn many lessons from institutions that have forged the way in newer forms of pedagogies that can be applied to the virtual environment. Much of this new practice revolves around academic engagement that involves both teachers and students. This pedagogic transformation has been discussed in chapter ▶ "Academic Engagement in Pedagogic Transformation," where Maxwell and Armellini provide us with these key considerations that

- Strong strategic leadership and the vision set the direction of travel.
- Used appropriately, learning technology can enable pedagogic innovation, but used inappropriately technology can be a barrier to both learning and innovation.
- The quality of teaching practice is of utmost importance in the virtual university.

Notwithstanding the need for a firm pedagogical underpinning for the practices of the virtual university, it is also incumbent on such an organization to be at the forefront of innovation in its use of learning technologies, particularly emerging technologies. Through specific cases, Lai and Markauskaite in chapter ▶ "Innovation and the Role of Emerging Technologies" provide us with a view of the role that emerging technologies play and help us see some of the required considerations. These include

- The importance of being informed by learning theory and research on how learners learn across time and space.
- Digital and learning technologies should be used to enable higher level cognitive engagement, as we prepare students for uncertain futures.

Supporting Staff and Students

As there is a growth in the types of technologies that are being deployed across universities, primarily brought about by, and in response to, the COVID-19 pandemic, so too is the virtual university required to expand the innovative use of technology, as noted in chapter ▶ "Innovation and the Role of Emerging Technologies." However, that creates a simultaneous need to adequately and completely equip the staff of the virtual university with the ability to make maximum use of these technologies. To do so, a range of staff-focused professional development in the areas of technology-enhanced learning are required. These models were investigated and outlined in chapter ▶ "Models for Engaging, Training and Supporting the Use of Technology Enhanced Learning," where Sim and Huijser provided a comprehensive view of key techniques that could be employed and that focus on enhancing digital literacy and improving practice in a virtual university. Some hits include but are not limited to:

- Be clear about the relationships between humans and digital teaching and learning environments.
- Engaging stakeholders, training them, and supporting them in the use of digital tools by targeting what their digital literacy needs are.
- Frame for staff and students the interconnections between themselves and the systems (and subsystems) that they interact with.
- Help them be clear on the actions, decisions, and judgments about the use of TEL.
- Develop a supported community of practice to help build on prior knowledge in organic ways.
- Avoid isolated professional development instances, rather plan against the bigger picture.

As part of the ongoing pressure for academic staff to reach high standards in their online practice, an additional area that is particularly vital for the virtual university is the need for teachers in the virtual space to understand how others may work in similar situations: how teachers are learning from other teachers through the peer observation of others. This benefits both the teachers who are observed and receive feedback on their teaching activities, and the observer who learns through the act of observing. Crehan, Munro, and O'Keeffe have unpacked some of the factors for success in implementing such a program in chapter ▶ "Peer Observation of Teaching in The Virtual University: Factors for Success." They suggest that

- Trust and collegiality are as important to foster in the virtual university as in a brick and mortar model, to develop authentic partnerships and conversations (and therefore learning).
- Online observation of teaching may seem challenging but can contribute to improved quality, ongoing learning conversations, and reflection on practice improving both teacher and student experience.

As noted in chapter ▶ "Academic Engagement in Pedagogic Transformation," although a start-up virtual university does not strictly speaking go through a change management process, many of the teaching staff will come from more traditional universities and will go through a change process as individuals. In chapter ▶ "Peer Observation of Teaching in The Virtual University: Factors for Success," Wheaton and Young reflect on such transition and provide some practical and conceptual guidance to support transition to a virtual university; they observe that

- Two changes need to occur – pedagogy and technology.
- As noted in chapter ▶ "Models for Engaging, Training and Supporting the Use of Technology Enhanced Learning," chapter ▶ "Peer Observation of Teaching in The Virtual University: Factors for Success" also notes that professional staff development may be required to align pedagogy and technology.

When considering how we support our staff and students, data are increasingly seen as gold. So much of what we see, particularly when dealing with virtual environments, is informed by large sets of data. How else can we know how people

are interacting online when we cannot see them physically. For the virtual university, this has led to a greater uptake in the use of learning analytics to support, encourage, and inform both our staff and students, and to provide them with insights into their engagement and to design learning. Some key considerations in this respect were discussed by Jones and Fitzgerald in chapter ▶ "The Role of Analytics When Supporting Staff and Students in the Virtual Learning Environment." They suggest, among other things, that one needs to:

- Provide professional development and support to empower a more data-led approach to understanding student behavior to improve learning experiences.
- The implementation of data-led approach to the design of learning may require change management techniques to empower users to confidently adopt\change.

Learning Theories and the Application of TEL

There is no shortage of theories and approaches to teaching with technology; however, at some point one has to settle on a range of approaches that suit the theories that underpin one's practice. Sounds simple right? Well, not so much. To understand your practice, it helps to see where this practice fits into greater theoretical frameworks that have been evolving for decades (for online education that is). Campbell and Tran have provided us with some grounded advice in chapter ▶ "The 3C Merry-Go-Round: Constructivism, Cognitivism, Connectivism, etc.," based on some of the more prominent learning theories of the last 20 years, yet they have done so with an eye on current practice. They suggested that

- As the knowledge of TEL matures, the appreciation of the importance of theory deepens, and it becomes clear that theory and practice must be aligned within a coherent and workable model for the virtual university.
- Learning theories are a dynamic and fluid part of knowledge that evolve with the new technologies that emerge and transform intellectual, social, and economic horizons.
- Learning theories only explain how different learners learn without telling them how to learn, resulting in learners reluctance and struggle due to the lack of learner support.
- Education needs to build upon and integrate influential learning theories to reform TEL in the digital age, which is characterized by connectivity, collaboration, accessibility, and rapidly emerging technologies.
- There is no need to have a unified theory of TEL, as existing learning theories can be combined, modified, and/or directly applied by the virtual university.
- Technology has been found to be an influencing factor to the development of learning theories that it may not always be the case moving forward, thanks to the evolution of both established and emerging learning theories.

Like all good theories, there are multiple perspectives on how and why they should be adopted in a particular context. Extending chapter ▶ "The 3C Merry-Go-

Round: Constructivism, Cognitivism, Connectivism, etc.," Czaplinski and Huijser have provided another perspective on the role and application of learning theories that are particularly relevant for the virtual university in chapter ▶ "Consistency Is Not Sameness in the Application of Learning Theories to TEL." This chapter left us in no doubt as to the importance of:

- The relationship between an academic and the level of familiarity with TEL is important.
- The institutional parameters that define academic roles might need to be set up differently in the virtual university.
- Establishing pedagogical preparedness to teach with TEL is an important factor, particularly for sessional staff.
- In the TEL space, good teachers are super helpful, really caring, approachable, and hands-on.
- Staff professional development should also emphasize learning design and facilitation, as these have a strong and positive impact on students.
- Teaching academics in the virtual university often fulfills a triple role: content expert, designer of learning activities, and facilitator of knowledge transfer.
- It was again highlighted that a TEL community of practice is important to nurture teachers and learning designers, particularly when this is grounded in learning theories and supported by evidence-based examples of good practice.
- Finally, when supported by a collaborative space in which the pedagogical virtue of TEL can be supported, effective design and enjoyable activities can be cocreated.

One of the exciting things about working in the area of technology-enhanced learning is that the field is ever-evolving. This means that we have to stay vigilant and be willing to both adapt our practices and be open to the creation of new theories that can explain our practice. This does not happen by chance but is rather spurred-on by the ongoing research of our scholarship that seeks to make sense of technology-enhanced learning. To help us frame this for the virtual university, Ostashewski has provided us in chapter ▶ "Adapting and Creating New Theories Though the Ongoing Research of Technology Enhanced Learning" with a neat framework that he and others have been developing around their online practice. In this, he identifies several elements that students have identified as important for their satisfaction and success. These elements include:

- Lecturers' knowledge, experience, and pedagogical capacity
- Quality of the feedback they get on activities students carry out
- On the speed and efficiency of having their questions being answered

The implication of this for the virtual university are:

- The need for robust and reliable technological tools, e.g., an LMS that allows for many different types of learner interactions, both asynchronous and synchronous.

- As on-campus social activities are not viable, an internal social media platform for students to participate in scheduled online activities, sitting alongside the curriculum.
- The need for effective and responsive support systems for both learners and instructors, especially where there is a large dependency in technological knowledge.
- The need to be able to access IT technology supports and training opportunities on how to make best use of the TEL tools.
- Opportunities to engage with other educational programs and personal wellness supports.
- Instructors need to be competent in not only their discipline, but also in their technological pedagogical content knowledge.

Not surprisingly, the main players in online learning have been systems that have largely corralled students into a type of walled garden approach to higher education, that is, until Web 2.0 technology came along (Huijser and Sankey 2011), which ushered in a suite of new innovations, with social media being particularly prominent. Panke, in chapter ▶ "Friend or Nemesis: Social Media in Technology Enhanced Learning Versus the Walled Garden," investigated this in light of the virtual university and had the following suggestions:

- Higher education institutions are largely missing the opportunity to foster productive debate on social media. Typically their social media policies tend to favor institutional reputation over those of academic freedom.
- Educators should provide nuanced advice to help students chart their own path through purposeful activities instead of either vilifying or hailing social media.
- They can help students understand their social media landscape, and which of them can make meaningful contributions to their learning network.
- Importantly, acknowledge the role of social media for informal learning, while being at the same time cautious about digital well-being and social division.
- Instructors can also help students reflect on a balanced use of social media by encouraging them to go offline for a day or two, and to document what they miss – and gain.
- Students need to be shown how to evaluate the information they get through their social media streams.

Despite the advent of social media and its impact on learning and teaching, the notion of a coherent system to mediate learning, such as the learning management system, has prevailed. However, with faster Internet and cheaper data there has simultaneously been a large uptake in the use of other forms of media to supplement more traditional learning materials. This in turn had led to the development of specialized systems that link with, but stand separate to, the LMS. This in itself does not mean the LMS has become redundant, but it does call the privileged place it has enjoyed in education over the last 20 years into question. Marshall and Sankey have put this to test in chapter ▶ "The Future of the Learning Management System in

the Virtual University," unpacking some of the future trends in technology and more so what that might mean for the TEL ecosystem in the virtual university. They suggested that:

- The success of the virtual university relies on establishing learner communities.
- TEL environments are both stable to maintain operations, and flexible enough to accommodate change and growth.
- University strategy will carefully position and enact their TEL plans and be open to future evolution.
- There is a reliance on a technology partnership between the institution, academics, and students, and this requires an effective governance mechanism that includes those on the periphery of the platform.
- Develop a vision for how a product, technology, or service is an essential part of a university learning ecosystem.
- Build a coalition around the platform that shares the vision and rallies technology partners, academics, and students into cocreating a vibrant ecosystem.
- Continually evolve the ecosystem while maintaining the collegial and intellectual values and direction of the university.
- Adoption and use of online tools is strongly related to the role and professional identity of the academic; this stance treats them as active partners rather than clients or users and is a powerful mechanism to enact the collegial university model of distributed leadership.
- The virtual university requires systems that reflect engagement with diverse learners and a focus on expanding the reach and impact of the university into new contexts.
- Many of the new affordances of TEL reflect changed patterns of work and the dynamic networks learners participate in for their social lives and employment.
- The TEL ecosystem of the virtual university is capable of sustaining an evolution of existing operations into new and uncharted spaces, one framed by clear standards and business processes that protect the user but also allow for innovation and expansion of pedagogical knowledge.

New and Emerging Forms of Assessment

As we move into the online learning environment for our learning and teaching, the option to do in-class assessments is minimized. We say minimized as clearly there are options in relation to using tools such as Zoom or Teams where synchronicity is not lost. We look to maximize opportunities like this, rather than suggesting that this is not as good. Decades of research suggest that the options for online education provide just as much opportunity for students to engage in meaningful learning and assessment as their face-to-face counterparts (Nguyen 2015). Hillier, in chapter ▶ "Making Online Assessment Active and Authentic," has begun to discuss the value proposition of making online assessment active and authentic, suggesting that

there are ample opportunities to embrace the many and varied tools we have at our disposal in our online environments. Among other things, he suggests:

- With the increasing use of automation, robotics, and generative AI in education and life, graduates require lifelong learning skills to adapt and thrive in this rapidly changing environment.
- Universities traditionally do this through defining a set of graduate attributes, at the program (degree) and unit (subject) level. These define a specific set of intended learning outcomes relevant to the discipline being learnt.
- Assessment is the key component in how we assure students can do what they claim they can, requiring an alignment with the desired learning outcomes.
- Traditional assessments, like essays and multiple-choice tests, are likely to fall short in this era of generative AI. Instead, assessment of complex problem-solving tasks, innovation, and creativity are now required.
- Tasks designed to be active and authentic are thought to improve student learning outcomes.
- Active learning occurs when students are "doing things" and actively thinking about what they are doing, engaging in the application of knowledge, analysis, synthesis, evaluation, and creation.
- If the task is largely artificial or trivial, it may not challenge the student in ways reflective of the complexity required of professional practice.
- Authentic assessment tasks are designed with characteristics that are, to various extents, reflective of the "world of work" and the "social world" where problems can be messy, dynamic, and complex.
- "active" assessment moves students away from passive memorization toward the need to take action and engage in problem-solving.
- "authentic" assessment tasks go beyond contrived activities by utilizing the characteristics of complex problems found in professional practice.
- The virtual university has the opportunity to reconceptualize assessment in light of TEL and enable higher-order capabilities to be assessed and is already possible by taking advantage of existing technologies.

One of the affordances of online assessment that has really risen to prominence over recent years has been the ease with which peer and collaborative assessment can be undertaken. A range of online environments have been developed to facilitate this form of assessment, which coincidentally is used equally as much as in more traditional class settings. That is, it is not ubiquitous to online education, but it is something that could now be considered native to the virtual university. Gunning, Adachi, and Tai have discussed this in chapter ▶ "Peer and Collaborative Assessment" and argue that the effective deployment of this approach should become mainstream in the virtual university. They expand on this with the following points:

- Student confidence and ability to assess the work of others critically and honestly can be fostered through development of evaluative judgment and engagement in quality feedback processes, which requires a deliberative approach to develop the skills students need to make it meaningful.

- As part of this development, they note that relevant learning outcomes should be scaffolded across programs and measured through a combination of self-assessment, peer assessment, and teaching teams' judgments.
- Importantly, peer and collaborative assessment activities require institutional-level policy and provision of technology to engage and support teaching teams.

As with many contemporary universities, the virtual university is primarily focused on preparing students for the future of work and thus has a unique role to play because of the affordances of the virtual space. Dean et al. discussed many of these affordances in chapter ▶ "Preparing Students for the Future of Work and the Role of the Virtual," where they make a clear case that

- Virtual models of work-integrated learning (WIL) can provide a bridge between the virtual university and the reality of the workplace.
- Emerging pedagogical approaches, such as virtual internships, digital service learning, and online placements, can enable students to engage with experiential learning through WIL in the virtual university.
- The entanglement of technology, work, and learning require new models of WIL in which digitally enabled work shapes how WIL is designed, and where technology, present in specific skills or jobs, informs and shapes the pedagogical choices for virtual WIL models.

Online learning, as we have seen, is not exactly a new phenomenon, yet we need to be realistic and not minimize the challenges there may be in relation to identity in the online space. Over the decades of experience we now have, numerous strategies have been adopted to ensure a level of authenticity to our online practice. It is particularly important, when it comes to considering assessment, that we are taking advantage of the many lessons that have been learned about originality and minimizing opportunities for people to cheat. In chapter ▶ "Authenticity, Originality and Beating the Cheats," Thomson, Amigud, and Huijser have provided us with a range of strategies that have proven to be particularly robust, which include:

- Adopting a holistic approach that considers various aspects of academic integrity, which is necessary to develop a comprehensive solution
- Creating a learning community, developing authentic and meaningful assessment, and adopting the best available verification and authentication technologies
- Prioritizing student engagement and building relationships of trust, to foster a culture of academic integrity that benefits both students and faculty

The Role Openness Plays in the Virtual University

Given you can now find almost anything you want (and not want) on the Internet, this can both be a positive and a negative for the virtual university. The trick to make it a positive experience is to pursue and cherish the techniques that have been established to check the variety of information we seek. One of the many concerns

for those in the educational research space is that much of this information sits behind paywalls that makes it difficult for those in less affluent economies to access quality information. This in turn leads to inequities in our globalized educational systems (Zajda 2022).

The two relevant chapters in this section of the volume (chapters ▶ "Open Educational Practice as an Enabler for Virtual Universities" and ▶ "The Affordances of Openness for the Virtual University") have made it very clear that there are numerous affordances for nearly all concerned to celebrate Open Educational Practice, which should particularly be the case for the virtual university. Bossu and Ellis in chapter ▶ "Open Educational Practice as an Enabler for Virtual Universities" have provided some keys to how this can be understood and ultimately attained. They argue that, if carefully and thoughtfully harnessed and implemented, the promise of OEP for virtual universities is substantial. To capitalize on this promise requires both top-down and bottom-up approaches:

- A holistic and multidirectional approach to be adopted across all levels – institutional, national, and international
- Engagement from not only educators but also learners. A need to adopt a wider view beyond western-centric and English language dominance in OEP
- Encouragement of active participation from those in the Global South as well as the global north

More specifically, Mishra in his chapter ▶ "The Affordances of Openness for the Virtual University" has provided a solid framework on which to place one's practice within. The affordances of openness for the virtual university are many and, if established from the beginning, can set the institution on a solid global footing with the potential to have a positive educational impact on a large portion of the world's population. Mishra has provided ten clear recommendations in his chapter, based on the ten dimensions of openness to support equity and inclusion, and access to quality educational opportunities globally, in support of United Nations Sustainable Development Goal 4 – ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. He further argues that those recommendations could help build a resilient system to face future pandemics.

- Adopt a flexible entry policy for anyone interested in pursuing a course and create a new revenue model for sustainable higher education
- Offer programs in multimodal pathways to enable learners to study from any location without being fixed to one system
- Minimize synchronous meetings to those necessary to meet the learning outcomes
- Provide a variety of courses to choose from, and help the learners design their curriculum
- Build the capacities of teachers to adopt collaborative learning strategies online
- Use technology tools that are open source and reduce the cost of access to learners
- Embrace the use of open educational resources and open textbooks by adopting a policy for OER and curating relevant open textbooks

- Adopt a more flexible approach to assessment, providing how and when the learner may provide evidence of learning
- Offer courses in a modular and stackable manner to accumulate credentials within a lifelong learning framework

Gamification, Adaptive and Conditional Learning

As models of delivery change within higher education, so do opportunities for new approaches to the way we credential learning (Selvaratnam and Sankey 2021). As major economies now take the microcredentialing movement very seriously, they are releasing new national microcredentialing frameworks. Just two examples of this are first the European approach to microcredentials (The European Commission 2022). In June 2022, the Council of the European Union (EU) adopted a recommendation to support the development, implementation, and recognition of microcredentials across institutions, businesses, sectors, and borders. Similarly, the Australian government, in March 2022, released its National Microcredentials Framework, providing education providers with a clear way forward (Australian Government 2022).

This highlights the different models and practices that have emerged due to a lack of a common definition. Selvaratnam has discussed this in chapter ►"Microcredentialing Models and Practice" and suggests that

- More research is needed to establish robust success measures to ensure the sustainability of microcredentialing initiatives for the longer-term assurance of quality and relevance.
- The learner's agency is key for the larger growth and success of any microcredentialing effort.
- A rapidly evolving technological landscape makes any single static model obsolete very quickly and thus needs agile responses and dynamic, forward thinking.

Earlier in 2023, UNESCO released a new policy paper entitled, "Short courses, micro-credentials, and flexible learning pathways: a blueprint for policy development and action" (Van der Hijden and Martin 2023), which again provides another useful definition of what may be considered a microcredential. Presumably we will reach a common definition at some point, but while this redefining process is taking place, the rest of the world is moving on. A great example of this is found in chapter ►"The Challenges and Opportunities in the Portability and Authentication of Credentials," where Fitzgerald and Huijser have unpacked many of the opportunities and challenges in the microcredential and short-course landscape. They encourage the virtual university to adopt a strategic and coherent approach that enables collaborative and innovative approaches to higher education delivery, as there are considerable risks in ad hoc engagement with short courses for skills development. They further suggest that

- The virtual university is in a position to lead on how to assure quality and cohesion to guide learners on how microcredentials add value to their learning journey.

- The virtual university must engage with flexible models to be able to compete in a global context and to best serve the learners that a virtual university attracts, which is a potentially large population.
- Short courses and microcredentials attract educated, professionally skilled, and employed learners and offer equitable opportunities and pathways that may otherwise not be available for all learners, which potentially allows the virtual university to play a key role in creating such opportunities.

Gamification, Adaptive and Conditional Learning

An important development that has particular importance for the virtual university is how we keep students engaged in the online space. However, choosing the right gaming elements is a challenge for designers and practitioners alike, due to the dearth of proven design approaches. Fortunately, Bell, in chapter ▶ "Developing and Quantifying Intrinsically Motivating Instruction – Models and Principles of Gameful Design, Adaptive and Online Experiential Learning," has worked us through many considerations when developing and quantifying intrinsic motivation in relation to our instruction approaches. He has provided us with a very user-friendly model that is backed by principles of gameful design. When applied, these lessons can empower staff and students to adapt quickly to these newer forms of online experiential learning. Bell demonstrates that

- Many online games use AI to generate competition at an appropriate skill level to challenge participants "just enough," which the virtual university can capitalize on.
- Skilled instructional design, some automated feedback, and intrinsically motivating materials that will encourage engagement and preparation prior to dynamic, challenging, even fun in-class sessions can be an attainable goal.

For the virtual university, the affordances of adaptive learning technologies are gold. This is a far cry from the inflexible pedagogical approaches that have been routinely adopted in more traditional contexts of instruction (Graesser et al. 2022). Adaptive technologies linked with conditional learning lead us to one of the more contemporary approaches to learning, which have their roots in sound research. Thompson et al. have taken us on this journey in chapter ▶ "The Role of Adaptive Learning Technologies and Conditional Learning" and provided us with the following considerations:

- The risk to not considering rigorous, open, evidence-informed ways to approach the use of adaptive learning technologies in higher education is that priorities could become driven not by learning objectives but only by objectives related to gaining competitive advantage or financial performance.
- Adaptive learning technologies can provide support for data-driven decision-making in the design of learning situations as well as during the implementation of these designs, assessing student progress to inform feedback, learner paths,

content, and the development of students' metacognitive skills such as self-regulated learning.

The Rise and Rise of AI, VR, AR, MR, and XR

The virtual university, because of its emphasis on the affordances of technology, offers the option to shift our practice away from customary cognitive tasks toward contemporary interactive tasks. This is clearly seen in technologies such as AI, which have proven, particularly since the end of 2022, to have a real impact upon higher education. AI and its associated technologies are not just another innovation but represent a fundamental change in the relationship between higher education and its broader socioeconomic interests (Bearman et al. 2022). When we add in the many and varied contemporary approaches to media-rich education, such as different forms of mixed realities, this provides a cornucopia of options for educators in the online space.

Much of this practice that has emerged in the mixed reality realm to support learning and teaching has been discussed by Marshall in chapter ▶ "Emerging, Emergent, and Emerged Approaches to the Different Forms of Reality in Learning and Teaching," both from an ontological and epistemological perspective. Again, this has provided us with a solid framework on which to build a consistent platform of practice. Three key themes are identified that should be taken into account by those who design for learning in the virtual university:

- The value that these technologies add to bringing information into the environment of the learner
- The ability to change the learner's perceptions. The recognition of the virtual university as an evolving organization that is adaptable enough to apply mixed reality technologies in meaningful ways

Mason et al., in chapter ▶ "AI in Higher Education, Risks and Opportunities for the Virtual University," then took us on a deeper dive into the role that Artificial Intelligence can play in the evolution of the virtual university. It is not too much of a stretch to suggest that this is probably the most fundamental shift to higher education in the last decade (Chen 2023), and understanding this shift is crucial for the forthcoming generation of practitioners. This chapter has clearly laid out the affordances that the virtual university can profit from, including:

- AI can help spot plagiarism and fake IDs and support academic integrity.
- The virtual university might consider collaborating on how to ensure trustworthiness of their operational systems that use AI.
- From an educational perspective, developing human agency should be a priority. Students could be taught how to use AI-supported tools to solve increasingly challenging questions.

Quality, Benchmarking, Learning, and Educational Analytics

It is no accident the last two chapters at the conclusion of this volume deal with quality in the technology-enhanced learning space. We started this volume with a series of chapters dealing with laying the appropriate foundations on which to build the virtual university. Then, in between these opening and closing chapters, we have dealt with putting up the walls, making sure the plumbing and fixtures are in the right place, ensuring the windows have a nice view and the painting gives it a sense of homeliness and belonging. The last thing that happens when building a house is that the quality inspector comes in to sign off on the build before it can be populated. Well, that is exactly what we are doing here, with the only difference being that this is not a one-off, but an ongoing task. Why? Because we are continually building, iterating, and improving our practice. That is precisely why we put in place the right quality measures and understanding of how we can measure ourselves against such measures.

There is no point putting in place a strategy or initiative if we cannot also have the data at hand to effectively evaluate them. In other words, this helps us understand that what we are doing is hitting the intended marks. For the virtual university, this is all about the digital footprint of our students and staff and how we are using our institutional data to drive quality, improvement, and innovation. Dart and Cunningham, in chapter ▶ "Using Institutional Data to Drive Quality, Improvement and Innovation," have provided us with some of the keys to this quality house, and the strategies they present include strategic alignment, data management, integration into decision-making, and institutional culture.

- Hosting the virtual university dramatically increases the quantity and scope of data that can be collected and analyzes driving evidence-based improvement at all levels of the institution.
- This "big data" drives the adoption of data-driven strategies through tools that extract, aggregate, store, and manage these large datasets, while visualization tools have been improving greatly.
- Institutions are increasingly implementing sophisticated algorithms to identify at-risk, customize communications, personalize learning pathways, and provide dashboards that enable students to reflect on how they fair.
- Given data can be used to implement personalization at scale, data-driven approaches have become increasingly prevalent.
- Importantly, data collection is to be aligned to strategic priorities, and analytical insights closely integrated into decision-making practices. But there is a significant risk when data-driven insights remain dormant, never being acted on.
- Recent shift spurred by COVID-19 has extended the data opportunities for virtual learning. So looking to data-driven approaches to guide decision-making while implementing more sophisticated and innovative TEL is gold for the virtual university.

Once we have our house in order in relation to our institutional practices, we lastly need to think about how this might compare to what other institutions are

doing who are working in similar fields. In this particular case, with the virtual university being predominantly operating in the online space, the role of standards and benchmarking for technology-enhanced learning is paramount. Chapter ▶ "The Role of Standards and Benchmarking in Technology Enhanced Learning," by Marshall and Sankey, has taken us on this final journey to discover many of the keys to putting in place a fulsome approach to benchmarking. They suggest that leaders of the virtual university should reflect on the way standards and quality frameworks can work to enhance their practice.

- They can help leaders reflect on the diversity of student learning capabilities and desired outcomes.
- They are designed to evolve to meet the challenging nature of technology, and new types of pedagogy.
- Ideally they should stimulate discussions, and stimulate research that result in that evolution.
- Enable effective practice, rather than constrain creativity and be a burden to the passion of teachers.
- They are informed by an evidence base of effective teaching practice and research into ways of improving student learning, but not limited by conceptions that are misaligned to the virtual university.
- Expressed in a way that enables efficient determination of performance and documents that performance over time in a reliable way.
- Support, manage, and identify areas in need of development and strategic decisions regarding the future direction of the virtual university.
- Support the development of TEL capability across networks of practice, rather than encouraging piecemeal and isolated initiatives.

Concluding Thoughts

This book has taken us on quite the journey and has provided us with the views of some 54 authors from eight countries contributing their expertise to the vision for the virtual university. Their experience has provided us with a strong set of principles that should be considered for those wishing to thrive in this space.

For any university, but particularly a new breed of university, unencumbered by tradition, the advent of a more versatile approach to learning and teaching, enabled by technology, ensuring that a comprehensive suite of underlying elements is in place is a must. Many of the elements presented in this volume, in the view of the editors, are nonnegotiables. They include, but are not limited to, ensuring the vision, purpose, and design of learning and teaching is supported by a rigorous approach to policy and sound governance. Of course, the virtual university lives and breathes in the virtual environment, so ensuring that the technology suite that is adopted meets the requirements of, and adequately supports, its staff and students which is paramount.

Having the right systems is great (and necessary), but if they are not made to sing by the application of an appropriate mix of learning theories to suit the specific

learning context, then the distinct advantage the virtual university enjoys may well be lost. These newer pedagogies may also lead to new and more authentic forms of interaction and assessment, many of which have been discussed at length in this volume.

Less "traditional" perhaps, but something this volume strongly endorses for the virtual university, is openness and particularly open education practice. This is closely aligned with how the global education market is shifting its thinking in relation to credentialing learning, and adding newer forms of microcredentials to the existing educational mix, as different nations slowly come to terms with this new microeconomy.

Once the virtual house is built, it then opens the door to a whole range of newer forms of online learning: gamification, adaptive and conditional learning, virtual and mixed realities, and of course the ways we look to use AI. There is so much potential to excite and stimulate learning, and the prospects of using a wide range of strategies in the online space are immense, as touched on in great detail in this volume. However, ensuring we are not overreaching, and that we fully understand the needs of our students and take full advantage of what we are providing them, requires a robust approach to quality measures, benchmarking, and acting on our learning and educational analytics to drive a culture of continuous improvement.

It has been a joy to pull this comprehensive volume of ideas and approaches together, and we trust that when viewed in its entirety the lessons shared here will enable a whole-of-institution approach to providing a virtual university that is fully and comprehensively underpinned and enabled by technology-enhanced learning approaches. Importantly, these approaches are never finalized, for if there is one thing this volume has taught us, it is that the virtual university is a dynamic and iterative concept that needs continuous rethinking in the face of new developments, much like learning itself.

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