1. Introduction to the *Handbook of Digital Higher Education*

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DIGITAL HIGHER EDUCATION

This *Handbook* takes as its starting point the need for a holistic conceptualization of digital higher education which takes into account personal, pedagogic and organizational change. This needs to go beyond the existing conceptualization of the digital university in the literature, which is an impoverished one, based on universities' responses to digital changes that have been 'transactional rather transformative' and where pedagogic theory and organizational development practices are underdeveloped (Johnston et al., 2018, pp. 36–7). Critical of the dominant neoliberal stance to higher education as a whole, Johnston et al. bemoan the corporate white papers which present digital as a solution to the problems of higher education explaining that 'The digital university emerges not so much as a jubilant technological transformation of the academy, but rather as an educational business operation cloaked in some form of a digital finery' (p. 39). We are reminded of the children's story of the emperor's new clothes, paraded through the streets until an innocent child points out that the emperor is not dressed in the finest silks but is, in fact, naked. Where the digitization of education is conceptualized only as the implementation of digital technologies without pedagogical and organizational change, this will reproduce existing practices rather than developing new practices that are more effective and sustainable (Pettersson, 2018, 2021).

The challenge we face is that tertiary education has proven remarkably difficult to change. Flavin (2017) reminds us that despite 'generations of technological onslaught, education systems have not changed fundamentally' (p. 1), giving examples of virtual learning environments (VLEs) promoting a transmission model of teaching or massive open online courses (MOOCs) as new forms of continuing professional development courses, before going on to explore how disruptive technologies (after Christensen, 1997) have led to changes in students' practices. Examples of free, simple and easy to use disruptive technologies include students' use of Google to by-pass reading lists, or using Wikipedia to circumvent academically produced and curated knowledge. More than a decade since we exposed students' self-directed uses of such disruptive technologies to support their learning (Sharpe et al., 2010) and put out a call for a research agenda to include the perspectives of young people (Bennett et al., 2008), we do now understand a great deal more about how students experience digital technology through their academic studies (Henderson et al., 2017). The challenge is to use what we are learning about students' digital practices to inform educational practices, institutional infrastructure (Gosper et al., 2013) and staff development (Meadows et al., 2016). Too often digital 'higher education has been misdirected to date because it has focused more on technologies than on practices with technologies' (Flavin, 2017, p. 12). When universities choose to use technologies to lead the way, they end up choosing sustaining technologies rather than disruptive innovation and so miss opportunities for positive transformation.

It is tempting not to offer an alternative conceptualization of digital higher education in such a contested space. However, we have been struck, through our reading of the chapters collected together in this volume, of the role of people and practices in shaping digital higher education. A definition grounded in such a way recognizes that educational technologies are tools put to use to meet organizational objectives and that those objectives will inevitably be shaped by the wider political, economic and societal changes. Within this context we have chosen to frame *digital higher education* as institutional engagement with the social and cultural implications of technology-enabled educational change, something which Goodfellow and Lea (2013) noted has been largely lacking. We recognize that higher education institutions are composed of individuals with their own goals and preferences, who operate within complex arrangements of organizational structures, networks and cultures. Recognizing this prompts us to attend to how people shape the adoption of digital technologies, and how these ways of adoption in turn shape educational practices, perhaps towards building institutional resilience in challenging financial environments or perhaps towards better meeting students' needs (Varga-Atkins et al., 2021; Lai, 2011). This people-centred stance emerges as the major theme from our reading of the chapters collected together in the volume.

ABOUT THIS *HANDBOOK*

The goal of this *Handbook* is to offer a forum for the scholarly critique on the state of current practice and future directions on the role of digital technologies for learning in higher education. Never has this been more important. Begun before the COVID-19 pandemic, this collection recognizes the body of work that came before and has shown to be of value as educators and students around the globe made the rapid pivot to online teaching. The authors revisited their chapter proposals in light of the pandemic, drawing on their recent experiences to identify the aspects of their specialist fields that have the potential to inform future directions for digital higher education.

When we began putting together the *Handboo*k, our ambition was to showcase the contributions of educational technology educators, researchers and leaders in order to lay the foundations for conversations about digital education as we walk into an uncertain future. Before the pandemic, we were already aware of the need for planning for uncertainty as our colleagues around the globe dealt with disruption to education from bushfires, earthquakes or political and social unrest. Countries represented in the *Handbook* include Australia, Denmark, Finland, Hong Kong/China, Mexico, the Netherlands, Spain and the UK. The authors have been selected from around the world with the ambition of encouraging the internal collaborations that are necessary for those working in higher education to proactively shape the future of higher education.

In one way, the future is less uncertain now – we know the future of higher education will be digital. In another way, uncertainty persists as we wrestle with the ways in which higher education will adapt to meet this digital future. We know what our role will be. Where the field used to be preoccupied with making a case for the potential of technology to support higher level learning, and pulling out what could be learnt from episodes of implementation, our role now is to inform large-scale adoption of technologies in learning. In order to support adoption, authors have been asked to include one or two well-evidenced case studies which illustrate the opportunities and challenges of digital education in their context and present these alongside

key findings from the research. We hope this mix of evidence review and case studies helps the reader to contextualize the findings and assess their applicability to your own context.

Our final ambition for the *Handbook* was coverage. While we do not suggest that these chapters represent an exhaustive coverage of digital higher education, we have set out to include as wide a variety as we could within the space available. We wanted to represent the complexity of the field, drawing on a diverse range of perspectives from learning sciences to sociocultural approaches. This is where we were looking for variety, not in the current hot topics of educational technology, but in the ways in which they are conceptualized, researched and adopted. It is the engagement of scholars from different backgrounds and approaches which give rise to the critical questions needed to advance the field.

As an Elgar *Handbook*, our aim is to outline the current research and set out a new research agenda for the future. We decided very early on that we wanted to showcase research which was of relevance to those performing different roles in higher education: the educators, researchers, managers and leaders. Recognizing that many of us hold some or all of those roles, our intention has been to make visible key findings of relevance to these audiences. The three parts: teaching and learning, researching and managing, are intended to draw the attention of their primary audiences. We are using these terms broadly. 'Teachers' includes educators, educational designers and all those who support learning. 'Researchers' includes both emerging and established scholars, educators who research and anyone who uses research evidence. 'Managers' includes administrators, policy makers, senior leaders and all those who make decisions which shape higher education. The three Parts of the *Handbook* do not set out to represent what is going on teaching and learning, research and management – rather to lay out what we think teachers, researchers and managers need to know in order to inform the uncertain future of digital higher education.

PART I: TEACHING AND LEARNING

One of the striking implications of digital higher education is its impact on the roles of those who teach and support learning, both individually and in how they work together. Godsk (Chapter 4) offers a timely reminder that the educational development processes must involve both educators and developers in partnership. Henderson et al.'s collaboratively authored piece (Chapter 2) touches on the nature of this partnership, describing the roles of educational designers as unbounded professionals (after Whitchurch, 2008) and explaining that this profession is human-centred rather than technology-centred. For example, educational designers must not only work alongside teachers but must also understand how to design learning experiences for them. Pardo et al. (Chapter 3) position learning designers as intermediaries forming collaborations between data scientists and educators, so that they can draw on learning analytics approaches to understand how design decisions affect student learning. Similarly, Papathoma et al. (Chapter 8) highlight the value of the different specialisms of educators working together within the context of online learning from multimedia developers or copyright experts. Those directly involved in designing for learning must then be able to operate productively within and alongside a variety of roles.

The chapters in Part I demonstrate the extent to which undertaking these roles is situated within subject disciplines. The designers who contributed to Henderson et al.'s sharing of learning from failure are each located within a broad discipline speciality (Chapter 2). The

importance of the discipline is recognized in designing opportunities for students to develop computational thinking (Dohn & Nørgård, Chapter 6) or digital capabilities more broadly (Varga-Atkins, Chapter 5).

As well as working as skilled intermediaries and specialists in the pedagogies of their subject disciplines, educators have become specialists in designing for learning in different issues and contexts. Kohnke and Moorhouse (Chapter 11) demonstrate the growing confidence of educators to differentiate their teaching in synchronous online classrooms as part of designing for inclusivity. Passey (Chapter 10) shares a range of strategies for inclusive online teaching to meet the needs of international learners. Wong et al.'s specialism is in the design of self-regulated learning in MOOCs (Chapter 9) to enhance student success. As our knowledge of digital higher education expands, it is likely that this need to specialize will continue, perhaps mirrored by further definition of the roles of those who teach and support learning.

If this community of specialist educators is to shape the direction of digital higher education in ways which acknowledge the social and cultural implications of increasing technology adoption, then we will need to hone our evaluative and reflective skills and practices. Henderson et al. (Chapter 2) offer an example of reflective professional practice through the supportive sharing of journeys from failures to successes. This open discussion contributes to the evidence base of what works (and what doesn't). Another tool for reflection is the interview, and Varga-Atkins (Chapter 5) shares an interview schedule which can be used to guide module leaders through a structured discussion of the ways in which their learning designs support the development of discipline-specific digital capabilities.

Indeed, a theme that runs through many of the chapters for teachers is how the educational technology community engages in evidence-based evaluation of learning designs. Both Pardo et al. (Chapter 3) and Wong et al. (Chapter 9) draw on engagement data to discuss the potential of learning analytics to inform learning designs. Varga-Atkins (Chapter 5) begins with documentary analysis but quickly finds that interviews with module leaders uncovers far more detail about the intentions of their designs. Even pedagogically effective designs must be doable and sustainable and Godsk (Chapter 4) provides a reality check and a method for evaluating learning designs in ways which capture effort and impact in terms of efficiency.

Finally, those educators and designers who teach and support learning must be clear about what they are designing for in terms of the processes and outcomes of learning. Some designs are focused on the processes associated with student success within a course such as inclusive teaching (Passey, Chapter 10; Kohnke & Moorhouse, Chapter 11) or self-regulated learning (Wong et al., Chapter 9). Other chapters take a longer-term view, taking into account what will be expected of students after graduation to demonstrate skills in professional practice (Varga-Atkins, Chapter 5; Ehlers, Chapter 7). A number of chapters share conceptual frameworks as a pragmatic response to the need to offer advice in ways which can be easily applied and adapted by educators in different contexts. Pardo et al.'s Learning Analytics Model for Personalization (Chapter 3) is presented as an alternative to models that are overly abstracted and from which it is difficult to generate actions. Dohn and Nørgård's Computational Thinking Model (Chapter 6) is intended to 'scaffold critical discussions' about how to develop and integrate computational thinking across the disciplines. Both Passey (Chapter 10) and Godsk (Chapter 4) hope that their conceptual frameworks will be used as a lens through which to view evidence in support of the evaluation of the effectiveness of educational designs and practices. The ways in which these frameworks are offered to the educational community illustrate the symbiotic relationship between research (producing frameworks, models and

theories) and practice (applying, testing and improving these models), something explored in the next section.

PART II: RESEARCH

The authors in this *Handbook* have demonstrated that researching digital higher education needs to be pluralistic, longitudinal and developmental in order to be rigorous, credible and have impact (S. Bennett et al., Chapter 12; Jones-Devitt & Austen, Chapter 14; Sharpe, Chapter 19). It is apparent that quality research takes time and careful design. Sue Bennett and colleagues (Chapter 12) give an account of the important research questions that characterize the field through an account of their evolving learning design research. The chapters by Beetham (Chapter 13), Jones-Devitt and Austen (Chapter 14) and Lee (Chapter 15) highlight the importance of critical research, situating concerns beyond the immediate topics onto questions such as who is researching and who is being researched in digital higher education and whom it might benefit. Through the theme of surveillance, Beetham (Chapter 13) demonstrates the importance of critical researchers' work by skillfully analysing the approach that they had taken. Shining the light on these critical approaches helps our community to take stock when adopting technologies, to ask important ethical and moral questions. Jones-Devitt and Austen (Chapter 14) focus on how critical evaluation methodology can support institution-wide evaluation of the transition to online and blended learning, with a focus on providing an inclusive environment to all students.

Returning to our stance, another observation of our authors' work regards the proliferation of insider, reflexive methodological approaches (whether reflections, narrative inquiry etc.) that characterize the field of researching digital higher education. Cross et al. for instance (Chapter 17) describe the use of 360-degree, spherical video for classroom observation and teacher development in low resource educational settings. Lee (Chapter 15) illustrates, aptly in a self-reflexive auto ethnographical narrative, how auto ethnography can be a useful methodology to stimulate and enact critical pedagogy in the online doctoral 'classroom'. These critical approaches draw on discourse analysis, narratives and speculative methods which stretch our research repertoire in ways that open up possibilities for analysing the what-has-been but to future imagination and speculation of the what-could-be. By envisaging alternative narratives, returning to the emperor's story, do we become better at embroidering (digital finery) for the emperor, do we empower more children to tell the truth, or do we go even further by abolishing the power of the emperor to proudly parade in front of his people to his own satisfaction and ask him to share his wealth and provide (digital) embroiderers for all his empire's children instead?

Such critical researchers contribute by discerning the powers at play in digital higher education research. In addition, they call attention to the consequences of epistemological and methodological choices made by researchers and stakeholders. Indeed, Kahn asserts that there is 'a close connection between methodologies employed in higher education research and the nature of the student experience of higher education' and that 'methodologies in higher education research may be seen to affect the emancipatory potential of higher education teaching' (2015, p. 452). The case studies by Beetham (Chapter 13), Jones-Devitt and Austen (Chapter 14), and Lee (Chapter 15) underline this connection. By drawing focus on the positionality and self-reflexivity of researchers (and in many cases educator-researchers), such awareness

of their methodologies can enhance the emancipation of their students and others (Kahn, 2015). This move from observing and analysing towards activism is coupled by a much wider repertoire available to researchers of digital higher education.

Although epistemological and methodological choices however do still matter (see L. Bennett, Chapter 18, on staff digital literacies), Beetham (Chapter 13) points out that paradigm choice (positivist or interpretive) no longer leads to particular methods historically aligned with particular paradigms. This new research logic seems an important milestone from what we have been accustomed to in educational research. Whereas previously our (emperor's) embroiderers might have followed the same choice of yarn matching to the chosen pattern (matching ontological/epistemological orientation to methodology), the digital higher education researcher's palette is much wider today. When selecting methodologies and methods, the focus is on choosing appropriately to suit the given research question. For instance, researchers working within an interpretive paradigm can draw on quantitative methods. This is well demonstrated by Järvelä and colleagues (Chapter 16) who use quantitative, multimodal data gathered by physiological sensors to explore the social self-regulation of learners. This real-time data then can be instantly shown to students to support their collaborative self-regulatory behaviour.

Taken together, the chapters in all three parts of the *Handbook* demonstrate that we have come a long way from when Kahn (2015) highlighted the need for methodological innovation in the area of pedagogic research. At that point most pedagogic research used a limited range of methods, including interviews, surveys or focus groups. A bird's eye view of all the *Handbook*'s case studies offers a panorama of diverse range of topics, spheres, methodological approaches and methods. In addition to the novel multimodal methods mentioned above, they span qualitative, quantitative and mixed methods paradigms and methodologies, from literature reviews, case studies, ethnography, autoethnography, surveys, Delphi-method, interviews, observation, documentary analysis, through to using trace data, learning analytics.

PART III: MANAGING

The chapters on managing and leading in digital higher education draw our attention particularly to the challenges of fostering adoption of technologies at scale. Notably, none of these chapters focus on the roll-out of a particular new digital tool, but on the individual and organizational approaches to encourage and implement the new ways of thinking and working required for digital technologies to become embedded successfully. This again reflects the people-centred dimension of this work, with a strong commitment to capacity building through joint work and sharing of experiences.

This section offers perspectives often not captured in the academic literature. This is partly because those in leadership positions who are charged with designing and managing major projects in digital higher education do not have the time to write about them. And also, because accounts of their experiences don't necessarily translate well to the expectations and requirements of journal publications. We have been fortunate to bring together some of these perspectives in accounts that variously contribute leadership perspectives, practical insights and personal reflection.

All chapters in Part III engage with the theme of change. There are views from within and across large-scale institution-wide change. Sharpe (Chapter 19) explores an institutional

project to embed digital and information literacy into all taught programmes within a centrally managed graduate attributes project. Alexander (Chapter 26) gives an account of developing and implementing a digital education strategy for a whole institution, alongside a major campus building initiative. And Nørgård (Chapter 22) provides an overview of a multi-institution national initiative to advance students' academic digital competencies. Common to all of these chapters is the planning and long-term thinking required to step such projects through the stages needed for wide-reaching change in a large and complex organization. Critical too is the approach to engagement of colleagues – this is more than consultation with stakeholders, this is deep involvement through co-creation of definitions, frameworks and processes by internal partners. There is a strong sense of this as generative work, reciprocal conversations between leaders and those who enact the change, utilizing existing institutional structures, and also going beyond to create new ones. In building solutions together there is a means to localize and tailor, but also to engender ownership. And so monitoring and evaluating support this iterative reciprocity while keeping an initiative 'on track' and 'in scope'.

While these three chapters give a sense of how to approach planned and managed change, two others provide examples of alternatives. Armellini and Padilla Rodriguez (Chapter 25) present findings from a survey of higher education teachers' adaptations to remote teaching in response to the COVID-19 pandemic. They describe the 'emergency professional development' teaching staff embarked on in response as a means of autonomous self-development, drawing heavily on their own prior knowledge and on informal sources, at a time of great urgency, pressure and uncertainty. They reflect on what might be learnt and adapted for the future. Our observation is that this work also demonstrates the resilience of individuals that is the foundation of the 'agility' demonstrated by our institutions. Another example of dynamic and responsive change is contributed by Zafar and Paas (Chapter 27) who describe an approach to pursuing high-risk projects by establishing an 'accelerator' within an institution to foster a culture of radical technological innovation. A unit of this kind offers another new way of working, with a novel team composition and organizational relationships that allow it to be more dynamic and can complement broad change projects.

There is also a strong sense of the importance of research and the value of evidence across all of the chapters in this section. All chapters point to the research and scholarship that has formed the basis for initiatives and activities, as underpinning the rationale, providing conceptual framing or as evidence to be applied in practice. Castañeda and colleagues (Chapter 23) draw from relevant scholarship and their own analysis of digital transformation plans to create a framework for fostering digital teaching competence in higher education institutions. As with many of the Part I authors, they have made their framework open and flexible, with the intention that it be adapted to the reality of each higher education institution. Corrin and colleagues (Chapter 20) situated their research with students on how they perceive various aspects of learning analytics within a wider effort to inform relevant institutional strategy. They provide advice on how to achieve deep, focused engagement with students as key informants about a technology that intimately involves them but yet is unfamiliar. A specific interest in learning analytics is also reflected in Chapter 21, contributed by Rienties and Herodotou, but here the focus is on teaching staff within a single institution. Informed by their own and others' research, they share a framework to help teachers and managers make sense of data about learners and their learning. Here again is a deep engagement with those directly engaged in the work at hand.

We also hear from leaders themselves about their experiences. In describing her approach to supporting academics in her faculty grapple with issues of academic integrity in technology-based assessment, Rogerson (Chapter 24) reflects on her approach to creating a safe environment for experimentation and risk taking, and opportunities for personalized professional learning. Though set within the COVID-19 pandemic response, Rogerson points out the lessons and activities that could be adopted into the future. In Chapter 29, Wareing makes a convincing case that the greatest scope for digital transformation lies within the back office work. She describes her carriage of an initiative to improve student experience through more dynamic, responsive and streamlined processes that also reduces risk. Both chapters provide personal insights into the decisions made by these leaders and the values that inform them, including their commitment to engaging others directly in designing the change that will affect them. Highton's research on digital leadership presented in Chapter 28 offers a different set of perspectives from leaders, this time from professional staff digital leaders also engaged in advancing equality, diversity and inclusion. Highton relays the tensions inherent in this work created by a desire to champion change and how they are seen by others.

FUTURE DIRECTIONS

As we write, COVID-19 continues to make waves around the world with the UN estimating that school closures due to the pandemic have affected 94 per cent of the world's population (UN, 2020). While higher education in some countries is returning to familiar pre-pandemic shapes, other countries or regions continue teaching in fully online or mixed mode as students remain in their home countries or even their own homes. We don't know what the future will look like and the future isn't necessarily visible yet in these chapters. What our authors have done is identified some of the challenges and opportunities that will remain and suggested ways in which our community of teachers, researchers and managers might respond. Overall, the move is towards a digital higher education that is people-centred, with investment in activities to promote innovation, inclusivity, sustainability, and to build student and staff digital capabilities.

Innovation

The challenges brought by the pandemic have created opportunities for innovation. A people-centred and values-based approach to digital leadership of innovation will remain essential to underpin our institutional and sector-wide decision-making for adopting digital technologies for education. Our authors call for digital higher education leaders to nurture spaces both for incremental and radical innovation by creating a culture of risk taking where failures can be perceived as a first step in creative problem-solving and the innovation process rather than as end-points to avoid (Henderson et al., Chapter 2; Zafar & Paas, Chapter 27). This calls for leaders nurturing a 'no-blame culture' (Rogerson, Chapter 24) and conceiving and implementing new, alternative metrics and success criteria specially designed to enable such innovation and risk-taking. This goes hand in hand with a request to review the language surrounding failure, risk and innovation (Henderson et al., Chapter 2) and providing mentoring for staff involved in innovation (Rogerson, Chapter 24) or convincing staff about the

importance and advantages of being upskilled and participating in innovation rather than the alternative of being left behind (Wareing, Chapter 29).

Inclusivity

Another aspect that the pandemic has brought to the limelight is the notion of inclusivity of higher education. Going forward with our education provision, our authors point to the need to ask questions, such as how inclusivity could play out in different forms of digital higher education including on-campus, distance, online and hybrid forms of learning. Passey (Chapter 10) asks how digital learning and teaching can accommodate different contexts at local, regional, national and global levels, and Kohnke and Moorhouse (Chapter 11) ask how technologies and platforms can be developed or implemented to promote inclusivity, diversity and differentiation. To drive change, Highton (Chapter 28) suggests the agency of digital leaders can bring significant impact in promoting diversity and inclusion within higher education institutions. Much of this work needs to start with reflection, understanding and sharing these experiences. Work has already started to negotiate the terrain of critical pedagogy and critical research in ways to offer methodologies that could support such exploration further utilizing the potential of critical, narrative, reflexive methodologies that foreground individual experiences against systemic and institutional contexts (see Beetham, Chapter 13; Lee, Chapter 15).

Collaboration and Engagement

Technological adoption requires discussion between multidisciplinary stakeholders, each with different responsibilities. Even in projects which are heavily technological, such as the current interest in big data and learning analytics, our authors have emphasized the need for systematic and deep engagement with those involved (Corrin et al., Chapter 20; Rienties & Herodotou, Chapter 21). For example, educators become familiar with data by liaising with IT and other experts, so that they can help to communicate this to their peers to understand how they can use data in their practice. For much of this progress to be made, multidisciplinary collaboration (e.g. learning, information, psychological and computer sciences) is needed to progress the technological and methodological developments (Järvelä et al., Chapter 16).

Sustainability

Sustainability in digital higher education comes in various forms, whether relating to the United Nations' goals, sustainability of educational design approaches, educational provision or more sustainable ways of researching digital education. For example, we might pay more attention to the effort and impact of learning designs when evaluating technology enhanced learning initiatives (Godsk, Chapter 4). One observation is how the spirit of open education relates to sustainability. Many of our authors offer up their outputs (whether conceptual or practical) for the benefit of the sector, which offers a further opportunity to bring about change and develop (digital) practices of individuals and institutions. Such inter-institutional co-development underpinned by strong research and peer review can facilitate capacity building and professional development with attention to ethical, values-based and responsible work by educators, designers, developers, technologists. Could we then find ways to utilize these outcomes in larger-scale projects, institutions and cultural contexts (Nørgård, Chapter

22)? Certainly one way of increasing sustainability in digital higher education is elevating and building a culture of teacher design (S. Bennett et al., Chapter 12).

Student Digital Capabilities

Research evidence continues to point to the importance of aligning students' development of digital literacies within the context of their discipline (Varga-Atkins, Chapter 5; Sharpe, Chapter 19). Co-constructing and explicitly articulating what these digital capabilities are needs to continue and leaders need to decide how this process can be enacted in their institutional context (Sharpe, Chapter 19). Another key consideration for leaders validating and implementing digital competence frameworks through engagement with key stakeholders concerns paying attention to the sustainability of these processes (Castañeda et al., Chapter 23). As disciplinary practices are changing at pace, so are the future skills that graduates need to develop to reflect complex global challenges (Ehlers, Chapter 7). Higher education institutions need to review and refine their skills provision from this future skills lens. With the expansion of artificial intelligence, machine learning, algorithmic process in all areas of life, computational thinking has been identified as a particular, but different digital competence that needs to be developed to scaffold students from novice to advanced levels of computational and critical computational thinking (Dohn & Nørgård, Chapter 6). The challenge posed for higher education institutions is how such future and digital competencies of students can be developed, assessed and certified (Ehlers, Chapter 7).

Staff Digital Capabilities

The coronavirus pandemic has also prompted a boost for educators' digital competence – but is it aligned to pedagogically sound practice or an emergency mode of operation? Building digital capacity of teachers, educators is a prerequisite essential for educators, whether on-campus or online or hybrid learning (Kohnke & Moorhouse, Chapter 11). Our authors highlight the different ways staff could be engaged in building their digital capability. Some may be 'hidden' in professional development events (e.g. within learning or curriculum design), some may be developed as sessions that are specifically targeting technologies or ways of teaching in online, blended or hybrid practice, or as part of professional development focusing on online course design or more specialized multimedia, technical or pedagogical expertise. Becoming part of teams with more specialized expertise of members is another trend identified (Papathoma et al., Chapter 8). The question remain over what will future forms of emergency professional development look like and how will their value be assessed in different institutional contexts (Armellini & Padilla Rodriguez, Chapter 25)?

CONCLUSIONS

Just as we have experienced online and digital learning traversing geographical and temporal boundaries, we hope that collecting chapters into this single collection can bring together researchers, leaders and educators to imagine and realize futures for digital higher education. Our choice of 'futures' rather than 'future' is deliberate. Critical researchers including Beetham (Chapter 13) and Jones-Devitt and Austen (Chapter 14) especially point to the utility

of simulated or speculative research methods or counter narratives which enable us to imagine alternative futures for digital education. We invite those who want to make positive changes within their spheres of influence to learn from the case studies, methods and frameworks that our authors have shared, and to pass these on to others in their conversations and writing. We recognize that although chapters, reports and articles can help us describe, analyse and interpret the what-was and what-is, it is other, more creative formats such as manifestos, curricular, coded artefacts, design patterns, that are more accessible to a wide range of audience and play an important part in marrying research and practice with activism, the what-could-be (see Beetham, Chapter 13; Lee, Chapter 15). These creative and critical methods help us portray how things could be different. Through this *Handbook* we invite everyone to be a tailor for the emperor's new clothes, designing many different kinds of attire for different occasions, working within a culture that nurtures risk-taking, builds capabilities, and future proofing digital higher education to be inclusive for a diverse body of teachers and learners in different contexts.

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