



Contextualising Horizon: Connecting community to envision Australasia's future educational technologies and practices

David Bruce Porter¹, Danielle Logan-Fleming², Chris Campbell³ & Hazel Jones²

¹Independent Contractor, ²Griffith University, ³Charles Sturt University

Over its 18-year history, the *Horizon Report*, originating in the United States, has become an important tool for administrators, academics and practitioners in envisioning future technologies likely to impact higher education and in determining institutional strategy. ASCILITE's Contextualising Horizon project aims to complement the *Horizon Report* and provide an Australasian regional lens to trends in educational technologies and practices. Beginning in 2021, Contextualising Horizon is a project aimed to connect members of the ASCILITE community and affiliates to engage in environmental scanning and evidencing the current state of play in higher education and the educational technologies and practices likely to be of importance in the 12-18 months following the process. This paper highlights the process of Contextualising Horizon, key findings, and plans for future iterations of the project.

Keywords: higher education, educational technology, Australasia, *Horizon Report*, trends, digital technologies, technology enhanced learning

Background

Since 2004, the *Horizon Report* has identified the “trends, challenges, and technology developments likely to impact teaching, learning and creative inquiry” (Peng, 2018). This report was first published by the New Media Consortium (NMC), and, in 2018, EDUCAUSE took over publication following NMC's bankruptcy. Since its inception, the report has aimed to provide analysis of the trends likely to be of importance to the higher education sector (Grussendorf, 2018). While scanning the horizon is thought to create thinking and debate on the future directions for various aspects of society (van Rij, 2010), it is acknowledged that it can be difficult to conduct in an ever-changing sector. While tools such as the STEEP categories can assist with this, using them takes time and conversation with experts in the field. This current project has aimed to do exactly that.

As EDUCAUSE is a North American organisation based in the United States, authorship and the nominated trends have been perceived as biased toward the North American context. In examining the list of contributors to the last two *EDUCAUSE Horizon Reports* (2021, 2022), 51% (n=40) and 57% (n=36) of the participants were from the United States. It was, therefore, the position of the research team that the annual *Horizon Report* may not accurately reflect the types of pressures and impacts felt by institutions in the Australasian region. Figure 1 below shows the world-wide distribution of contributors to the 2022 *Horizon Report*.

Further, whilst there are a number of participating international expert panelists from the Australasian region each year, this number is disproportionate compared to the number of North American representatives involved in trend nomination and the voting process. Therefore, given the size of the Australasian geographic region and the diversity of the higher ed sector, the current *Horizon Report* process does not sufficiently represent a balanced, representative regional voice.

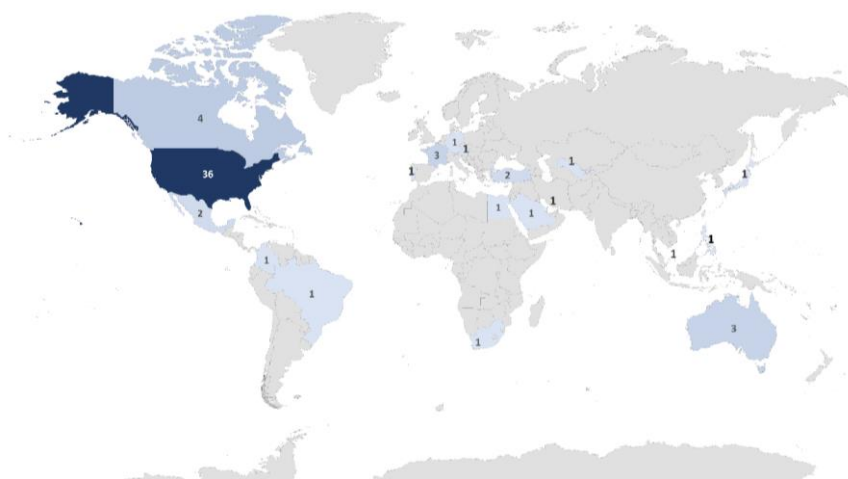


Figure 1: 2022 EDUCAUSE Horizon Report representation by country

The Contextualising Horizon project aims to complement the *Horizon Report* and to provide an Australasian lens by unearthing the issues and influences in the region and the educational technologies and practices likely to be important in the next 12 to 18 months. Furthermore, this project aims to create a consensus position that can be used to inform the regional input into the *EDUCAUSE Horizon Report*.

While scanning the horizon can prove somewhat difficult (Bishop, 2009), it is important that we try to do this. As such, the Contextualising Horizon project is an important addition to the field. Completing this project allows us to be prepared for change in the future (Bishop, 2009) and allows us to plan ahead. While Grussendorf (2018) questions the reports' importance and influence in the sector, she does conclude that the reports are of benefit to both students and teaching staff in that they prompt discussion and debate about the issues prevalent in higher education. Thus, Contextualising Horizon will continue to contribute to the field in the future.

Methodology

The Contextualising Horizon project employed a design-based research methodology as its basis. Design-based research uses the four-step process similar to that defined by Reeves (2006, p. 59) and depicted in Figure 2 below. Each phase in the process allows for modification, redefinition, and refinement. Ethics approval for the project was obtained. Where changes in the process impacted participants (e.g., changes to survey questions), the researchers filed and received approval for an ethics amendment. 2021-2022 was the first iteration of the project, but it has been anticipated that these phases will recur with each subsequent run of the initiative, which will be annually.

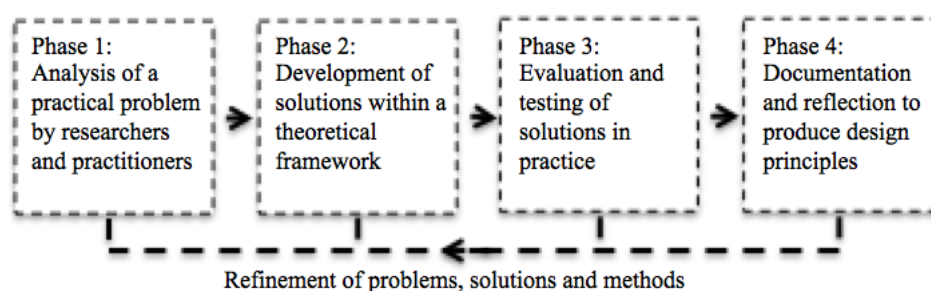


Figure 2: Design-based research model (Reeves, 2006, p. 59)

The research team started with a rough skeleton of the project that could be modified following observations and reflections at each phase. The phases were planned as follows:

- Phase 1/Session 1: Early in the 2021 ASCILITE Conference, a Special Interest Group (SIG) session occurred in which face-to-face and remote participants engaged in a collaborative activity to identify and discuss the current Social, Technological, Economic, Environmental, and Political (STEEP) influences on Australasian higher education.

- Phase 2/Session 2: A second synchronous session at the 2021 ASCILITE Conference was held in which participants used the STEEP trends identified in Phase 1 to forecast the learning and teaching trends likely to be of importance in the near, mid and longer term.
- Phase 3/Session 3: This session was conducted in February 2022 and allowed for broader discussion of the key technology and practice trends from Australasia.
- Phase 4: The creation of a website for dissemination of the project findings including a report of the trends and examples from the Australasian sector that will then be fed back to EDUCAUSE.

Contextualising Horizon used a combination of in-person workshops and survey research to arrive at the 2021-2022 educational technology and practice trends. We conducted two workshops as part of the ASCILITE Conference between 29 November and 1 December 2021. During these first two workshops, ASCILITE community members and affiliates identified and discussed the STEEP trends likely to impact tertiary education in the next 12-18 months. Analysis of participant verbal and written input, documents produced in the sessions, and session recordings helped us to produce a final framework in the form of a Padlet page, identifying three trends for each STEEP category. Then, in February 2022, we held a workshop to identify the technology trends for 2022. During the workshop, participants were asked to consider the STEEP trends and the educational technology trends and practices likely to be important in the next 12-18 months. In total, 15 educational technology and practice trends were initially identified. Following the workshop, we reviewed the trends to refine the list, resulting in 11 possible trends. We distributed a survey to participants in the workshops and asked them to rank the trends with the intent to identify the top six trends. The survey resulted in the selection of the seven trends discussed in the Results section.

Project Participants

Members of the ASCILITE community, particularly the ASCILITE SIGs, were invited to participate in each of the sessions. Given the impact of the community on educational technology in higher education institutions across the region, the research team identified members as having the expertise to identify the trends impacting higher education in their local areas/states/countries as well as the technologies and practices likely to be of importance locally into the future.

To encourage participation at the sessions, the research team worked with the SIG leaders to promote the sessions prior to the conference and the session in February. Invitations to all sessions were additionally communicated through social media. Participation in each of the sessions was voluntary, with some participants engaging in more than one session, while others came along to just one.

In addition to the workshops and survey described previously, participants were invited to respond to a series of demographic questions following each of the workshops and as part of the technology and practice trends survey. Participants were asked to identify institutional affiliation, number of years in current role, number of years in higher education, other sectors in which they may have been employed, and their primary discipline. Discipline areas were pre-defined using the Quality Indicators for Learning and Teaching (QILT) site (QILT, 2021). The results of these demographic questions were used to ascertain the level of expertise of the participants.

Results

The sections that follow summarise the outcomes of the workshop sessions, the results of the post-session demographic surveys, and the results of the 2021-2022 Technology and Practice Trends Survey, which also included demographic data.

Workshops 1 and 2: 29 November and 1 December 2021

Two workshop sessions were held at the 2021 ASCILITE Conference. Sessions were in a blended format, with participants attending either face-to-face or online. Attendance was not collected at these sessions. However, following each workshop session, participants were asked to complete a survey to identify the demographic makeup of the session participants.

Session 1 took place 29 November and was 90 minutes long. During the session, each ASCILITE SIG was assigned a STEEP category to discuss as a group and to identify possible trends. Groups were invited to share during the session what they had discussed. Each SIG provided notes, and the session was recorded for analysis following the conference. The majority of the participants in this session identified as academic staff (n=21).

Most participants had been in their current role for less than nine years ($n=22$), with a large proportion of those participants having been in their roles less than five years ($n=15$). However, more than half of the participants had been in the higher education sector for 16 years or more ($n=16$). Participants also identified having worked in other educational settings, including K-12 ($n=10$) and vocational education ($n=10$). In terms of disciplines represented, most of the participants were from Teacher Education ($n=11$) followed by Business & Management ($n=4$). Other disciplines represented included Computer & Information Sciences; Agriculture & Environmental Studies; Humanities, Cultural & Social Studies; and Communications.

Session 2 took place two days after the first session on 1 December. Following a debrief of Session 1, the research team modified the design of the second session to give more time for discussion of the STEEP trends and to provide participants the opportunity to discuss the influences and impacts identified in all five STEEP categories. To accomplish this, the research team distributed participants across three groups, with each group including at least one participant from each STEEP group from Session 1. Each group had about 30 minutes to discuss the trends. Following small-group discussions, the three groups came together as one larger group to share their insights, points for consideration, and recommendations regarding what the final STEEP Categories should be. Participant demographics for Session 2 were similar to Session 1, with the majority of participants in roles less than nine years but having been in the higher education sector for 16 years or more ($n=11$). Participants similarly also had work experience outside of higher education. K-12 ($n=6$), vocational education ($n=7$) and other areas ($n=6$), such as adult education and corporate educational services, were nearly equally distributed. However, Session 2 participants were more evenly split between academic ($n=10$) and professional staff ($n=11$). Teacher Education ($n=6$) and Business & Management ($n=4$) remained the largest proportion of disciplines represented. Computing & Information Systems; Agriculture & Environmental Studies; Humanities, Cultural & Social Studies; and Communications were also represented. However, the number of Teacher Education participants was not as greatly represented as it was in Session 1.

Large-group discussions for Sessions 1 and 2 were recorded and transcribed, and each of the small groups shared their notes. Following the conference, transcripts of the recordings and the submitted notes were used to code and classify trends and impact, resulting in the final STEEP categories. Each category included three major trends, as well as key indicators and references/sources for more information. The trends identified are included in Table 1.

Table 1: 2021-2022 STEEP trends

Social	Technological	Environmental	Economic	Political
1. Further diversification of student populations and digital divide	1. Student equity & digital equity	1. Sustainability	1. Jobs: Insecurity, casualisation & staff retention	1. Border restrictions & student mobility
2. Microcredentials	2. Online learning & faculty development	2. Climate change	2. Financial insecurity	2. Funding for higher education
3. Mental health & wellbeing	3. Widespread uptake of digital technologies	3. Indigenous environmental recognition	3. Resource-intensive priorities: Accreditation, work-integrated learning, and massification of higher education	3. Data privacy

Workshop 3: 15 February 2022

The research team hosted a 90-minute virtual event on 15 February to identify the 2021-2022 educational technology and practice trends. Prior to the session, participants were provided with the STEEP trends for review. During the first part of the session, participants discussed the trends and if any additional modifications were needed. Then, for the remainder of the session, groups were tasked with identifying the educational technology and practice trends that they thought might have significant impact in addressing the STEEP trends.

Seventeen participants took part in the session, however, only six participants completed the post session demographic survey. The majority of participants in the survey ($n=5$) had been in their positions for less than nine years, with most of the participants ($n=4$) working in higher education for 10 years or more. Most ($n=5$) of the participants had worked in other sectors as well. The disciplines represented were Computing & Information Systems, Teacher Education, and Business & Management.

The 17 participants in the session identified various trends for consideration. This list of trends was then circulated amongst participants over a two-week period for review and commentary. The aim of this extra step was to ensure Contextualising Horizon was presenting a consensus of the regional sector's horizon trends, technologies and practices.

Following the review period, the technology and practice trends were reviewed by theme. Where trends might be related or have significant overlap, they were collapsed into a single category. In total, 11 tech trends were identified. Given the low attendance at the event, the research team made the decision to survey participants to further validate the trends and to identify the final six trends.

Educational Technology and Practice Trends Survey

A survey was sent to all individuals who had participated in at least one of the previous workshops. The survey listed the 11 technology and practice trends and their descriptions identified in the February workshop. Participants were asked to select the six trends they felt would be important over the next 12-18 months and to provide demographic information. In total, 78 participants were surveyed, and 27 valid responses were received (a 35% return rate). Seven trends were identified due to a tie among the bottom three trends:

- Self-care and well-being for staff and students (13.58%)
- Redefinition of pedagogies (13.58%)
- Blended models of learning (12.35%)
- Educational technology infrastructure to enable learning (11.73%)
- Accessible content and digital equity (9.26%)
- Microcredentials (9.26%)
- Co-design of higher education (9.26%)

Participant demographics were similar to previous sessions. Most participants (n=21) have been in their role for less than nine years, but the majority of participants (n=17) had worked in higher education for 10 years or more. Participants also identified as having worked in sectors other than higher education. More academic staff (n=17) than professional staff (n=10) responded to the survey. Again, the greatest number of participants represented were from Teacher Education (n=11). Science & Mathematics, Computing & Information Systems, Nursing, Business & Management, and Humanities, Cultural & Social Studies were also represented.

Regional Representation

The Contextualising Horizon project aspires to capture the Australasian regional perspective. As such, as part of the demographics collected as part of the project, participants were asked to identify the entity they represented. Using this data, the research team tracked from where in the region participants came. These results are summarised in Figure 3.

For the 2021-2022 Contextualising Horizon, input has primarily come from Australia and New Zealand, with some representation from Japan. The majority of participants come from eastern Australia.

Discussion

For the first iteration of Contextualising Horizon, there were three key aspects worth noting. Firstly, the demographics and quality of the participants involved in the project were often well known and experts from the field. Secondly, observations on the process will inform improvements for future iterations of the initiative. Thirdly, the trends identified through the process have yielded and confirmed that there are regional deviations from the *EDUCAUSE Horizon Report*.

The Panelists

The participants in this initial iteration of Contextualising Horizon demonstrated both experience and knowledge in higher education, as well as a broad view of learning and teaching. While most participants had only been in their current roles for nine years or less, the majority of the participants have been in the higher education sector for 10 years or more, and a number of the participants had identified as working in other sectors, including vocational education, K-12 and corporate/industry contexts. This suggests that while participants may not be long in their current roles, they have shifted and experienced roles both in and out of the sector.



Figure 3: 2021-2022 Contextualising Horizon representation

From a disciplinary perspective, when mapped against the QILT (2021) disciplinary categories, participants only represented eight of the 21 discipline areas. Teacher Education, Business & Management, and Computing & Information Systems were well represented. Given ASCILITE’s focus on the use of computer technology in tertiary education, representation from computing and education is not surprising. Further, the high involvement from Business and Management is largely due to the involvement of members of the Business Education SIG, ASCILITE’s only discipline-specific SIG. Disciplines, such as Science and Mathematics, Agriculture and Environmental Studies, Nursing, and Communications were underrepresented, and other QILT disciplinary categories, such as Tourism, Hospitality, Personal Services, Sport and Recreations; Law and Paralegal Studies; and the medical and allied health disciplines were not represented at all. Increasing the breadth of disciplines may be worthwhile for expanding perspectives in future iterations of the initiative. However, this may be more aspirational than achievable, as engagement with ASCILITE and the increasingly trans-disciplinary use of technology-enhanced learning practices and tools has historically been uneven amongst disciplines (ASCILITE, 2021).

The Process

A design-based research methodology underpins Contextualising Horizon. This methodology adopts the position that learnings from each phase inform the next phase and that the overall review of the process allows for revision of subsequent iterations. Three key learnings emerged from the process. First, the environmental scanning processes requires socialisation with participants and time to implement. Second, “Australasia” as applied in the project required clarification, and some work was done on this to create the definition that ASCILITE now uses. Lastly, broadening regional involvement will be important in future iterations to reduce bias within the region, thus the team will need to encourage participants from outside Australia.

The environmental scanning processes used in the initial phases of the project to identify the STEEP trends challenged some participants and required more time than initially anticipated. As experts in education and educational technology, participants in the early phases of the project expressed their discomfort in discussing issues outside their professional comfort zones, particularly providing commentary on economic, political and environmental issues. In contrast, participants seemed much more comfortable when it came to addressing the technology and practice trends in Phase 3 of the process. The process of probing the STEEP categories and identifying trends required participants to think more broadly about the sector and to speculate about the potential impacts. There was very little time in advance of the first workshop session to introduce the environmental scanning process. To assist with accelerating the process, participants were provided with coaching and templates on which they could formulate their ideas, but it was clear that some additional supports were needed. The project and the workshop were conceived just weeks before the conference; this rapid turnaround did not afford participants the time ahead of the conference to consider the influences and impacts on the higher education sector prior to the session. Subsequent offerings will provide better guidance and lead time in preparing for the STEEP discussions.

Also, during the process of identifying trends, a question was raised about the scope of “Australasia”. Australasia in the context of this iteration of Contextualising Horizon was initially restricted to Singapore, Australia and New Zealand. However, participants identified that the region represented countries across the Asia Pacific region more broadly. Therefore, the definition was then broadened within this iteration to be Australia, New Zealand, Malaysia, the Philippines, Melanesia (New Guinea and the island groups lying east and southeast as far as and including New Caledonia and Fiji, Micronesia (e.g., Solomon Islands) and Polynesia. Southeast Asian Countries including Brunei, Burma (Myanmar), Cambodia, Timor-Leste, Indonesia, Laos, Singapore, Thailand and Vietnam were also able to be included. This also included Hong Kong, Taiwan and Korea. Participants in this iteration of Contextualising Horizon mostly came from Australia, with the greatest proportion of those participants based in eastern Australia. Therefore, it is acknowledged that, while groups attempted to adopt a regional perspective, the environmental scanning and technology and practice trends may not be representative of the entire Australasian region. The broadening of representation from the region will be examined and built upon in future iterations of Contextualising Horizon.

Regional Trend Differences

Contextualising Horizon achieved its aim of identifying the influence, impacts and technology and practice trends for the region for 2021-2022. While there were similarities and overlap with the themes of the 2022 *EDUCAUSE Horizon Report*, the participants in Contextualising Horizon identified additional themes, signaling regional idiosyncrasies. This has significant impact for institutional leaders, researchers and practitioners who may use the *EDUCAUSE Horizon Report* to inform discussions and decisionmaking, particularly in instances where a regional view is more relevant.

In both Contextualising Horizon and the *EDUCAUSE Horizon Report*, STEEP trends, such as funding for higher education, sustainability and environmental concerns, financial deficits/insecurity, and exploration of different learning modalities were similar. In the Australasian context, however, social and technological issues had greater emphasis on capacity building, equity and digital divide issues, and mental health and wellbeing. By contrast, the *EDUCAUSE Horizon Report* placed greater emphasis on topics such as hybrid and online learning, skills-based learning, and learning analytics and big data. These differences have more than likely been influenced by the COVID-19 pandemic’s regional impacts and the inequities in access to reliable connections and technologies and the lockdowns experienced across the region. Likewise, a heavy regional investment in Indigenous issues and reconciliation elevated that as a critical influence, which is not as prevalent in North America.

In terms of the practices and technologies selected in the two regions, there were also similarities and differences. An emphasis on blended/hybrid learning models and modes was common across the two reports. However, the 2022 *EDUCAUSE Horizon Report* placed greater emphasis on tools, such as AI and learning analytics. Meanwhile, the Australasian trends demonstrated more humanistic concerns, such as self-care and wellbeing and issues of access in learning materials, and co-design of higher education. Furthermore, the Australasian perspective looked at educational technology and university infrastructure more broadly, suggesting the adoption of technologies to support learning, whereas the Horizon Report placed greater emphasis for educational technology infrastructure in the development of hybrid learning spaces.

Next Steps and Conclusion

The identification of limitations and notes for further improvement are integrated into the Contextualising Horizon process. Contextualising Horizon assumes an iterative design process to enable adaptability and continuous improvement. As the first iteration of the process and in line with design-based research methodology, revisions were expected. The following are critical limitations and key areas for improvement:

- Continue to engage the community and affiliates with the environmental scanning process.
- Plan more time to conduct scanning activities and discussions.
- Expand the scope of participation to represent the Australasian region more broadly.
- Broaden the involvement of disciplines included in the scanning process.

This scan of the horizon is an important contribution to the field, and while environmental scanning can be difficult (Bishop, 2009), it allows us to brace for change in certain areas. Thus, this report will be used by the sector in the year to come and allow us to work towards the changes identified. It is also noted that scanning is most useful when repeated regularly (van Rij, 2010), and plans are underway to repeat this Australasian process annually.

The differentiation of Contextualising Horizon trends identified from the *Horizon Report* indicate that this is a worthy endeavour to continue to inform the educational technology and practice landscape in the Australasian region. The research team intends to continue Contextualising Horizon for 2022-2023 and has already begun planning for the next cycle, with consideration of the process issues identified through the first iteration. We hope that the community and affiliates will continue to connect with, engage in and value this worthwhile process.

References

- ASCILITE. (2021). *Member satisfaction survey report*. ASCILITE. <https://ascilite.org/wp-content/uploads/2021-Member-Survey.pdf>
- Bishop, P. (2009). *Horizon Scanning: Why is it so hard?* University of Houston. <https://www.law.uh.edu/faculty/thester/courses/emerging%20tech%202011/Horizon%20Scanning.pdf>
- Grussendorf, S. (2018). A critical assessment of the NMC Horizon reports project. *Compass: Journal of Learning and Teaching*, 11(1). <https://doi.org/10.21100/compass.v11i1.722>
- Pelletier, K., Brown, M., Brooks, D. C., McCormack, M., Reeves, J., and Arbino, N. (2021). *2021 EDUCAUSE horizon report: Teaching and learning edition*. EDUCAUSE. <https://library.EDUCAUSE.edu/-/media/files/library/2021/4/2021hrteachinglearning.pdf>
- Pelletier, K., McCormack, M., Reeves, J., Robert, J., and Arbino, N. (2022). *2022 EDUCAUSE horizon report: Teaching and learning edition*. EDUCAUSE. <https://library.EDUCAUSE.edu/-/media/files/library/2022/4/2022hrteachinglearning.pdf>
- Peng, X. (2018). Looking back at the first Horizon Report: What lessons can we learn? *AACE review*. <https://www.aace.org/review/looking-back-first-horizon-report-lessons-can-learn/>
- Phillips, R., McNaught, C., & Kennedy, G. (2011). *Evaluating e-learning: Guiding research and practice*. Taylor & Francis. <https://books.google.com.au/books?id=MNqoAgAAQBAJ>
- QILT. (2021). *Study areas*. Retrieved July 11, 2021 from <https://www.qilt.edu.au/data/study-areas>
- Reeves, T. C. (2006). Design research from a technology perspective. In J. van den Akker, K. Gravemeijer, S. McKenney, & N. Nieveen (Eds.), *Educational Design Research* (pp. 52-66). Routledge. <https://doi.org/10.4324/9780203088364>
- van Rij, V. (2010). Horizon scanning: Monitoring plausible and desirable futures. In in 't Veld, R. J. (Ed.), *Knowledge Democracy* (pp. 227-240). Springer.

Acknowledgements

The Contextualising Horizon research team wish to acknowledge the work of Tran Le Nghi Tran for her contributions to data analysis and assisting with transcription, coding and organising panelist comments and notes.

Porter, D. B., Logan-Fleming, D., Campbell, C., & Jones, H. (2022). Contextualising Horizon: Connecting community to envision Australasia's future educational technologies and practices. In S. Wilson, N. Arthars, D. Wardak, P. Yeoman, E. Kalman, & D.Y.T. Liu (Eds.), *Reconnecting relationships through technology. Proceedings of the 39th International Conference on Innovation, Practice and Research in the Use of Educational Technologies in Tertiary Education, ASCILITE 2022 in Sydney*: e22122. <https://doi.org/10.14742/apubs.2022.122>

Note: All published papers are refereed, having undergone a double-blind peer-review process. The author(s) assign a Creative Commons by attribution licence enabling others to distribute, remix, tweak, and build upon their work, even commercially, as long as credit is given to the author(s) for the original creation.

© Porter, D. B., Logan-Fleming, D., Campbell, C., & Jones, H. 2022