

# Pathways to Creative Learning and Teaching Online: An Ecological Model



Robyn Philip

**Abstract** Higher education practitioners may find that conceptualising and developing an online course is challenging at the best of times. Given the context of the Covid-19 pandemic and the recent accompanying changes to educational provision, more than ever we need assistance in envisaging and creatively shaping our pedagogical approaches for the online learning environment. Models that help us visualise learning designs, support us as creative teachers and contribute to our continuing professional learning and development needs (CPLD) may be particularly useful. Much can be learnt from the creative approaches of exemplary practitioners in the field. Examples from practice, CPLD principles, and adaptable learning designs are all useful tools to support praxis and enrich experience.

In this chapter, I share an ecological model for designing for creative online learning that can also be used as a prompt for CPLD activities. The model is derived from lessons learned from practitioners in Australian higher education and illustrated with international examples of online adaptations implemented during the Covid-19 health emergency.

## 1 A Model for Creativity Online

From my years as an educator, I have learnt that some of the most useful insights into the problems of course design arise from my own observations of colleagues and mentors around me. While the literature in this domain is always useful, reflection on practice and practice-based research has provided invaluable opportunities for developing my own and colleagues' approaches to learning and teaching. Whether that has been through informal discussions, or systematic observation and data gathering methods, I have learnt that success in learning and teaching,

---

R. Philip (✉)  
Flinders University, Adelaide, Australia  
e-mail: [robyn.philip@flinders.edu.au](mailto:robyn.philip@flinders.edu.au)

© The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2022

D. Forbes, R. Walker (eds.), *Developing Online Teaching in Higher Education*, Professional and Practice-based Learning 29, [https://doi.org/10.1007/978-981-19-5587-7\\_14](https://doi.org/10.1007/978-981-19-5587-7_14)

especially in online environments, has much to do with a readiness to be creative, a sense of oneself as a creative teacher, awareness of context, and a willingness to search for pathways to overcome obstacles. This means making new conceptual connections, reframing problems, taking risks, and exploring novel approaches and spaces. This has particularly been the case when I have designed for creative online learning, where moving from theory to practice is particularly complex.

There is always a need to better understand how educators go about designing for learning and tease out the influences on their praxis. Researchers such as Agostinho et al. (2018), Ellis and Goodyear (2019), and Laurillard (2013) have recognised this in the past. My research also speaks to this problem, and by directing a lens towards exemplary creative teachers, I have distilled four key elements that influence their design approaches. The elements are represented here in an empirically based model that applies to fully online settings and blended and face-to-face contexts. The concepts also serve as useful foundations for designing continuing professional learning and development (CPLD) pathways.

There are many models for designing for online learning and learning with technology. They may be (1) *conceptually* based, such as Laurillard's (2013) conversational model and Oliver and Herrington's (2003) learning activities, resources, and supports model. Or (2) *process orientated*, such as the ADDIE model (analysis, design, development, implementation, and evaluation) (Molenda, 2015), Conole's (2015) 7Cs of learning design (conceptualise, create, communicate, collaborate, consider, combine, and consolidate), and Seeto and Vlachopoulos's (2015) collaborative curriculum development model.

Design for learning and learning design may refer to both the *products* of designing for learning, such as models and replicable learning design patterns, and the *processes* of creating pedagogical experiences and activities (Goodyear & Retalis, 2010; Philip, 2018). These patterns and models vary in scope, granularity, and detail and reflect the context from which they were derived. They also reflect the underlying epistemology and pedagogy of the authors and may or may not have an empirical basis (Bower & Vlachopoulos, 2018). While a single model or pattern may not provide all the answers, what is captured may nonetheless be useful. Hence, the empirically based model presented here is timely for its focus on creativity as an element of design.

## ***1.1 Virtual Creativity and CPLD Practice***

Learning to teach creatively is challenging (Morin et al., 2018; Philip, 2015b), and approaching this in virtual environments under pressure imposes new and significant problems (Schwartzman, 2020). Forced to adopt emergency remote online learning arrangements, faculty may understandably have mixed feelings about the disruption accompanying this digital transformation (Brooks & McCormack, 2020; Schwartzman, 2020). We must now find creative ways to sustain relationships and connections across a range of domestic, institutional, and global learning spaces and

simultaneously demonstrate high levels of digital technical efficacy. Circumstances force us to closely examine the way we do things, how we create and use knowledge, the conduct of our relationships, and what we value (Bina & Pereira, 2020; Fazey et al., 2020). Therefore, as creativity is integral to all learning and teaching (Freire, 2005), creative models are surely welcome that scaffold and inform our pathways through these challenges. Each discipline will have preferences for approaching CPLD and learning design methods and models, however, and this needs to be acknowledged in any strategies we adopt (Cameron, 2017; Fry et al., 2014).

## 1.2 *Definitional Complexities*

For the purposes of this chapter, online learning refers to courses (units or subjects) that are predominantly internet-based and incorporate synchronous and/or asynchronous methods of communication. Blended learning is a combination of face-to-face and online delivery and interaction methods. Both terms can be viewed as subsets of umbrella terms technology-enhanced learning (TEL) and e-learning. Not surprisingly, attempts to define any of these terms are problematic and difficult to unravel (Rapanta et al., 2020).

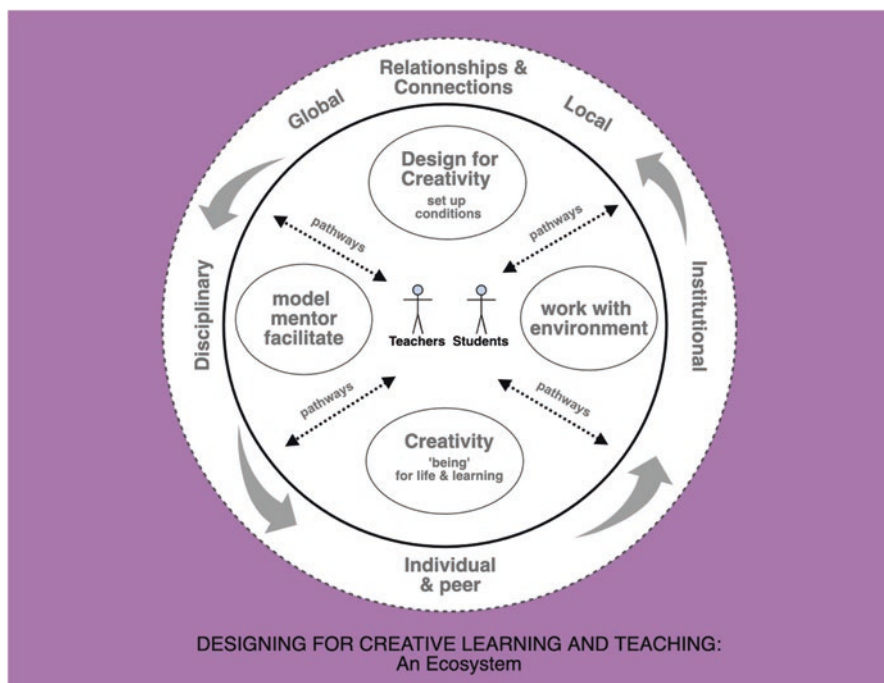
By comparison, the term creativity is even more difficult to pin down. It is similarly confounded by personal, historical, and social values (Csikszentmihalyi, 2007) and evolves over time. In higher education, the concept may be hidden within generic capabilities such as problem-solving, innovation and design, and communication and thinking skills. It is also subject to various forms of expression across disciplines. For example, it might be about ‘thinking, moving, being, expressing yourself outside the square’ (as an early childhood educator has defined it); or ‘the ability to imagine and express new ideas, or new ways of connecting ideas’ (engineering educator); ‘creating something from nothing’ (architecture); ‘exploring the least travelled road’ (fashion); or ‘the ability to extrapolate ideas, constructs, concepts’ (health) (see Philip, 2015a, p. 328). Lately, however, the concept typically incorporates notions of novelty and originality and/or value and appropriateness (Glăveanu & Kaufman, 2019). Higher education practitioners struggling for a definition may even simply say, ‘I don’t know how to define it, but I know it when I see it!’ (survey participant, Philip, 2015a, p. 328).

Importantly, creativity is not only about the process of coming up with new ideas (divergent thinking), but it is also about making choices regarding which ideas to pursue and what ideas have value (convergent thinking) (Fryer, 2012). To design for creative online learning and CPLD, we need both modes of thinking. We not only need to imagine multiple options to overcome problems in the design process, but we must also evaluate and discriminate amongst those choices. For example, when selecting tools for an online course, we do not need to use every digital tool available or every social media channel. The challenge is to explore widely (engage in divergent thinking) and then be selective (employ convergent thinking).

Creativity is impacted by the environment and requires challenge, autonomy, and resources (Amabile, 1998). We currently have more than enough challenges to overcome. So as online designers, and to foster our own CPLD, we need to work on finding and generating resources, building creative spaces, and developing creative self-efficacy and autonomy, within the boundaries that make creativity possible.

## 2 An Ecological Model

As a support for creative design approaches and CPLD, the following ecological model may be relevant (see Fig. 1). The aim of the model is to capture essential elements that require our focus when designing for online learning using a creative lens. It is based on findings from a mixed-methods study that gathered insights on the topic from a range of higher education practitioners (Philip, 2015a, 2018). Participants in the study came from a variety of disciplines. The methodology included survey methods and descriptive statistical analysis; the case studies included were analysed via constructivist grounded theory methods (Charmaz & Thornberg, 2020). Participants for the case studies were invited from the creative industries and humanities. While other researchers such as Agostinho et al. (2018)



**Fig. 1** Designing for creative learning and teaching in higher education: an ecosystem

have, for example, examined teachers' approaches to design from the perspective of the *supports teachers need and use*, my discussion relates to the *methods of creative teachers*, the lessons learnt from their approaches to designing for online learning, and CPLD ideas derived from that (see Fig. 1). Practical examples referred to in support of the model are selected from the study, my own experience, and recently documented developments brought about due to the extraordinary circumstances of the COVID-19 pandemic. Pseudonyms are used for all interviewees quoted in this chapter.

Figure 1 shows four key elements that impact the creative design process: (1) creativity as a way of being, a whole of a person, dispositional concern; (2) effective creative design for learning; (3) strategies for working with, not against, the environment, context, and prevailing conditions; and (4) effective modelling, mentoring, facilitating, and leading creative learning and development. Efforts to adequately represent this complex ecosystem are fraught because of the myriad interconnections between elements: between things and people. An ecosystem implies a living system, one that is not static, but is flexible, and subject to change over time as conditions and elements evolve. Change to any one element, activity, or approach impacts other elements. Boundaries are porous and mutable; relationships and connections are fluid. The system is influenced by the strength and/or weakness of connections. This reflects individual dispositions and preferences, relationships (local and global), the impact of institutional policies and practices, and networks beyond the immediate learning and teaching environment. The four key elements of the model also provide focal points on which to build CPLD practices.

## ***2.1 Key Element 1. Ontology: Being Creative for Life and Learning***

Exemplary creative teachers bring a creative mindset that holistically and fundamentally influences their approach to life, learning, and teaching. They nurture creativity at the centre of their being, bringing enthusiasm and passion from their creative lives to the task of learning and teaching. Their beliefs about creativity, learning, and teaching are examined and intertwined. They establish creative habits that are productive (Tharp, 2003) and continually develop their disciplinary and educational techniques, skills, and knowledge. They embody three key personal characteristics that Amabile (1998) argues, amongst other things, are important for creativity: domain-relevant skills, creative skills, and intrinsic motivation. They also demonstrate a Freirian (Freire, 2005) approach to learning and teaching that is transformative. Their powerful creative energy feeds their CPL development and spills over to those around them, motivating students, tutors, and colleagues. Whatever their chosen medium, whether that be visual, textual, social action, or embodied practice, they are leaders and influencers on many levels: with

individuals, peers, disciplinary and institutional colleagues, and, increasingly, with international connections.

Peer learning is a powerful resource for creative CPLD, and enthusiasm is catching. I formed a very productive relationship with a peer who taught drama in the early childhood faculty at our university. She became a powerful advocate for online learning, despite her early conviction that it was not possible to teach a practical course like drama online. After a hesitant start, our peer-to-peer collaboration and CPLD partnership grew, and we effectively shared skills, knowledge, approaches, strengths, and weaknesses over many years. As a result, we created several highly successful and well-documented online courses (e.g. Nicholls & Philip, 2012). Our research methodology was typically an action research one (Kemmis, 2009), underpinned by ongoing reflection on professional practice (Schon, 2011). Importantly, one of the drivers of our productive partnership was her inexhaustible enthusiasm as a creative educator.

Research with peers is a creative endeavour and can be playfully serious (James, 2021), as well as an empowering form of CPLD. As one exemplary course coordinator I interviewed said: 'It's not just one way, you know' (Alex, sociology), meaning that engaging in reflective practice with peers is mutually beneficial.

Similarly, another tutor I interviewed reflected: 'I guess it's just a lovely opportunity [being interviewed], because most of the time I don't get to talk about my experiences in teaching, and yet I love it so much ... I can't imagine doing anything where I wasn't doing this' (Beth, online tutor, creative writing). This demonstrates a yearning to share experience and, sadly, a sense of professional isolation.

## ***2.2 Key Element 2. Design for Creativity Online: Playful CPLD and Generative Spaces***

As well as building on a solid foundation of core educational design principles and online learning facilitation techniques (e.g. see Rapanta et al., 2020), creative teachers know the importance of the affective domain for learning: they value play, humour, and laughter. The role of play is undervalued in higher education (Koeners & Francis, 2020), despite evidence that positive emotions associated with play can enhance social and cognitive processes and support confidence and engagement. Play takes many forms, and during periods of remote learning, play can be a welcome antidote to the effects of social isolation and mandated lockdowns. Play is known to facilitate divergent thinking and insight (Russ, 2003) and provides opportunities for reframing perspectives and practices, experimentation, combining and recombining ideas in novel ways, reflection, and dialogue.

An example of play, and a 'getting started' activity to ease students into the online environment, is one implemented in Leo's (pseudonym) photo imaging course. In this fully online course, undergraduate students from a range of disciplines and age groups are required, from week one, to quickly learn to manipulate a

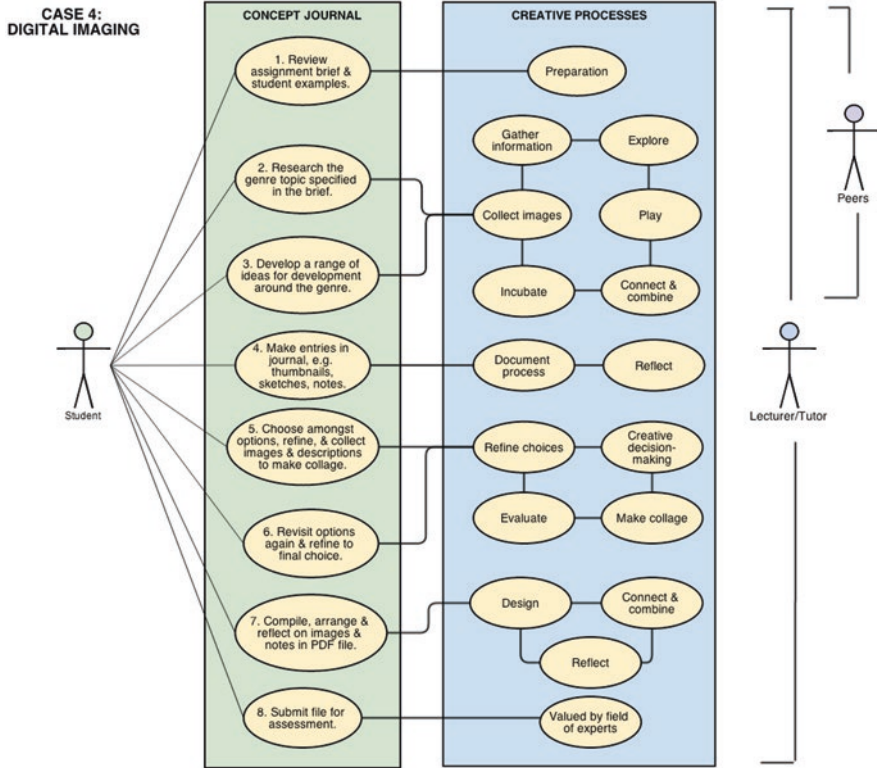
sophisticated graphics program (Photoshop). They are provided with only a few instructions and restricted to a small set of image-making tools selected from a large suite. For their first individual task, students are required to experiment and rapidly generate multiple visually interesting images. The aim is to promote play and build confidence and autonomy, plus creative and technical fluency. It is a non-assessable, fun, low-stakes task, designed so that students are not overwhelmed by the affordances of a complex software package. Students learn quickly and autonomously that their first response is not always the best one. They also learn how to create their own generative space. Generative space may be physical, virtual, affective, and/or cognitive. As educators, we can borrow and adapt the principles from this example for our own purposes, introduce more play into our courses, and use the strategies for CPLD activities.

Further to this, the importance of space, cognitive, physical, and emotional, in the online environment is crucial. Seelig (2012) tells us that we are actors in any space that we enter. We ourselves generate stories about spaces and construct personal narratives in which we play implicit and/or explicit roles. In thinking about online courses we have observed or participated in, we might reflect on the stories we create for ourselves, and those that have been created for us. Are we engaged in dull page-turning spaces, content dumping grounds, or endless one-directional web conferencing sessions? Or are we immersed in inspiring, imaginative, dynamic spaces, full of dialogue and mystery, that breathe life into learning, inhabited by learners with a range of perspectives, challenging us with their contributions?

An example of a shareable learning design pattern is provided in Fig. 2. It is derived from Leo's digital imaging course, where students were tasked with creating a digital journal to demonstrate and critique their image-making concepts, as well as divergent and convergent thinking. Creative processes and relationships between teachers, students, and peers are indicated in the pattern. A related CPLD activity would be to share and discuss this design with peers from a range of disciplines and reflect on the differing responses that arise.

### ***2.3 Key Element 3. Work with the Environment***

The circumstances of the pandemic may have influenced some of us to feel we are working against the environment, but creative teachers are adept at working *with* the environment. Two key aspects of this are the ability to rapidly reframe problems as opportunities and to resiliently forge pathways through disruptions and technical roadblocks. For example, because of restrictions on international travel, study abroad programs have had to be re-imagined. One instance of this was a collaboration in the health sciences between academics at Purdue University in the USA, and partner colleagues in India, including the National Institute of Speech and Hearing (NISH). Determined to provide the valued intercultural experience of learning across cultures despite disruptions, these paediatric audiology teachers created a blended learning virtual study abroad program. Communication technologies



**Fig. 2** Learning design pattern for a digital imaging concept journal task. (Source: Philip, 2015a, p. 185)

included pre-recorded content and live audio and video communications channels. Interactions were both group facilitated and one-to-one. The peer-to-peer, ‘buddy-system’, connecting Purdue and NISH student dyads was claimed to be a key success factor (Krishnan et al., 2021). Cultural differences were reframed as assets and pathways found through difficulties such as international time zone differences, lack of geographic proximity, and non-aligned academic calendars and course syllabuses. The challenge resulted in an exceptional cross-border, peer-to-peer, cultural learning opportunity for staff and students.

Another creative response to pandemic restrictions was the recent approach taken by four architectural academics who collaborated across three continents in a peer network (Gorman, 2021). The problem was how to effectively conduct students’ final-year portfolio and feedback session. Due to travel and attendance restrictions, the assessment process could not be conducted face-to-face in the physical studio environment. Therefore, synchronous, video web conferencing seemed an obvious first choice for mediating the activity online. However, as creative






teachers, they reconsidered this first option, as they had concerns with the interactions inherent in the assessment and how it might be replicated online if not adjusted.

Seizing an opportunity to transform a confrontational and judgemental ‘event’ into a more developmental and conversational process, they selected new strategies so the process could be conducted in a friendly and inclusive space (Gorman, 2021). They challenged and reflected on prevailing pedagogy and technology choices and reimagined the space. The assessment was consequently reshaped from an overwhelming, disempowering event, delivered by teachers and guest assessors via a single synchronous video conference, into a less threatening, longer, more considered conversation. A mix of asynchronous and synchronous technologies was employed in support of new strategies. Additionally, this transformative pedagogy was designed to be sustainable beyond the context of emergency remote teaching. And significantly, an informal, international pedagogical cooperation led to an ongoing CPLD collaboration: it became a formal, discipline-based research project about pedagogical futures for a post-pandemic world (Morkel et al., 2021). See Fig. 3 for an example of how this approach could be adapted.

#### ***2.4 Key Element 4. Effective Facilitation, Mentoring, Modelling of Practice, and Creative Leadership***

The role of committed mentors and course facilitators as motivators and leaders cannot be underestimated in the online environment. It requires what Garrison and Vaughan (2008) describe as positive social, cognitive, and teaching presence. Managing evolving relationships and the demands of synchronous and asynchronous technologies and pedagogies simultaneously is constantly challenging. As one tutor, Marie (pseudonym), from Leo’s course commented: ‘the online thing is not suited to everyone ... there are different types of students ... and it is difficult to teach creativity anyway’. Marie was referring to the limitations that asynchronous teaching can impose where serendipitous questions from students about a technique or a theory cannot be immediately responded to, as you would in a face-to-face setting. A tutor in the face-to-face situation might quickly pick up a book of illustrations and talk the student through options and methods. Marie’s point is that greater preparation is required for facilitating online learning. It is not that just-in-time mentoring and facilitation cannot occur, but that more planning and forethought are required to make it happen. On reflection, Marie reconsidered her comment and said: ‘but we can think of other ways to do that’. Being a creative teacher, she modelled creative practice: she revisited her first response, reframed the problem, found resources to support a creative approach, and forged a pathway through difficulties.

Goals		CPLD and design strategies
<p>A creative mindset, where difficulties are reframed as opportunities for positive change.</p>	<p>MINDSET</p> 	<p>Engage with like-minded peers to work on problems, and support and sustain each other.</p>
<p>Awareness of the narratives teachers, designers and students create for themselves and others in new learning spaces.</p>	<p>NARRATIVE</p> 	<ul style="list-style-type: none"> <li>● Reflect on the design elements that reinforce traditional power structures and reduce opportunities that limit transformative learning. Think about language and technology choices.</li> <li>● What is most efficacious – judging students in an intimidating and stressful environment, or engaging in a conversation with them about their work in a relaxed, welcoming, and inclusive environment?</li> </ul>
<p>Pathways that support mental and physical well-being of students and teachers.</p> <p>Challenge – managed with an expectation that this is a work in progress and there may be setbacks and failures, e.g. regarding reimagining the new space, trialling facilitation techniques, establishing computer connectivity, estimating time commitments, and ensuring student and staff wellbeing.</p> <p>Sustainability of innovation.</p>	<p>PATHWAYS</p> 	<p>A default technology choice to underpin your teaching strategy might be to use real-time video conferencing for the whole assessment. This may be overly fatiguing and demanding of students and teaching staff.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>● Rather than conducting all assessment requirements synchronously, move some elements into the asynchronous space. This may reduce the pressure of long web conferencing sessions on staff and students.</li> <li>● Encourage students to practice for the assessment with a peer or 'buddy' beforehand, thereby gaining confidence with the technology, improving their presentation skills, building self-efficacy, and engaging in peer-to-peer critique.</li> <li>● Encourage staff to prepare similarly. Share outcomes and debrief regularly with colleagues.</li> <li>● During the live video conference, consider whether all assessors' and students' cameras need to be on simultaneously. Is audio sufficient from time to time? Reflect on the changes to dynamics.</li> <li>● Is a staged approach to introducing new practices helpful for reducing stress and anxiety – especially when there are many students to be assessed? How will you document and disseminate your findings to colleagues, and seek their feedback?</li> <li>● Consider sharing your rationale for pedagogical choices with students. Seek their feedback, bring them along with you, model creative leadership and facilitation techniques.</li> </ul>

**Fig. 3** Working with the environment – creating pathways. This is an example of considerations for creatively transforming a student assessment, such as a panel assessed portfolio or an aural/oral assessment, from the face-to-face environment to an online space. It is recognised that under emergency remote learning conditions this is challenging. The example builds on the work of Gorman (2021)

### 3 CPLD Principles

Seven CPLD principles arising from the discussion above are provided for consideration.

1. Create and support a climate of creativity in your organisation. Discover the hidden creativity in yourself and those around you.
2. Develop and strengthen creative leadership at all levels. Lead by sharing, connecting, and reflecting with others, especially trusted peers. Champion and mentor creative peer-to-peer-led CPLD activities. Establish peer interaction guidelines that promote respect, reciprocity, and confidence. Peers can be anywhere in the world.
3. Consider the language used to encourage creative practice. Adopt less confronting expressions such as ‘energy’, ‘exploration’, ‘experimentation’, or ‘play’. It is not enough to simply ask or expect teachers and students to ‘be creative’ online.
4. Reframe problems and technological and resource constraints as opportunities to challenge assumptions and to design for sustainable and creative futures.
5. Creativity involves risk. Be open to explore and create new spaces and approaches, and ready to reframe ‘failures’ and/or first attempts as opportunities for growth.
6. Borrow, share, and play with creative learning designs and models that are customisable and inspirational.
7. Engage in research into online and creative learning, with a view to encouraging shareable and sustainable practice.

### 4 Conclusion

Research indicates that educators seek support for CPLD and designs for learning that is personalised and selective (Agostinho et al., 2018), as individual requirements vary over time, career stages, and according to circumstances. There is no one solution suited to every discipline. Support, therefore, needs to be contextualised. It is most effective when socially embedded and strengthened via local and global connections and partnerships (Agostinho et al., 2018). Every effort should be made to learn from and build on the work of others and foster creative leadership capability (Mallia, 2019). Educators typically look for help from trusted and credible colleagues and peers (Agostinho et al., 2018; Campbell et al., 2019). Where frameworks are introduced to teachers in a one-on-one, peer learning situation, or where a voluntary, collaborative approach is taken to professional learning, uptake and meaningful reflection on practice have proven more likely to occur (Campbell et al., 2019; Persico et al., 2020; Seeto & Vlachopoulos, 2015). In addition, an active, self-organised approach to CPLD may be more effective for professional learning than passive attendance at standardised CPLD sessions (Ehlers, 2020). We have an opportunity now to promote and lead a culture of creativity in our departments and institutions to further our CPLD.

While conceptual models and learning designs can be used to inspire practitioners' design thinking and CPLD practice, it is useful to consider these tools as part of a suite of alternatives in an interconnected ecological system that evolves over time. Whether adopted in whole or in part, these tools and strategies can be used to trigger discussion and critical reflection, challenge pedagogical approaches, and encourage reframing of perspectives, thereby generating pathways to creative online learning. Variation in the conditions for implementation, however, including institutional policies and practices, IT infrastructure, local disciplinary cultures, and professional networking arrangements will affect uptake, as will the professional development context in which strategies and resources are introduced. Nonetheless, despite the limitations of any model, the ecosystem model presented here offers some insights into a core concern of our times: fostering and designing for creative learning and teaching.

## References

- Agostinho, S., Lockyer, L., & Bennett, S. (2018). Identifying the characteristics of support Australian university teachers use in their design work: Implications for the learning design field. *Australasian Journal of Educational Technology*, 34(2), 1–15.
- Amabile, T. (1998). How to kill creativity. *Harvard Business Review* (September–October), pp. 77–87.
- Bina, O., & Pereira, L. (2020). Transforming the role of universities: From being part of the problem to becoming part of the solution. *Environment: Science and Policy for Sustainable Development*, 62(4), 16–29. <https://doi.org/10.1080/00139157.2020.1764286>
- Bower, M., & Vlachopoulos, P. (2018). A critical analysis of technology-enhanced learning design frameworks. *British Journal of Educational Technology*, 49(6), 981–997. <https://doi.org/10.1111/bjet.12668>
- Brooks, D. C., & McCormack, M. (2020, June). *Driving digital transformation in higher education*. ECAR. <https://library.educause.edu/-/media/files/library/2020/6/dx2020.pdf?la=en&hash=28FB8C377B59AFB1855C225BBA8E3CFBB0A271DA>
- Cameron, L. (2017). Using generic templates to promote the use of high quality learning designs in higher education. *Journal of Perspectives in Applied Academic Practice*, 5(3), 12–22.
- Campbell, N., Wozniak, H., Philip, R., & Damarell, R. A. (2019). Peer-supported faculty development and workplace teaching: An integrative review. *Medical Education*, 53(10), 978–988.
- Charmaz, K., & Thornberg, R. (2020). The pursuit of quality in grounded theory. *Qualitative Research in Psychology*, 1–23. <https://doi.org/10.1080/14780887.2020.1780357>
- Conole, G. (2015). The 7Cs of learning design. In J. Dalziel (Ed.), *Learning design: Conceptualizing a framework for teaching and learning online* (pp. 117–145). Routledge.
- Csikszentmihalyi, M. (2007). *Creativity: Flow and the psychology of discovery and invention*. Harper Perennial.
- Ehlers, U.-D. (2020). *Future skills – Future learning and future higher education* (Translation: U.-D. Ehlers, P. Bonaudo, & L. Eigbrecht, Eds.). Springer.
- Ellis, R. A., & Goodyear, P. (2019). Educational ecology as an applied science. In R. Ellis & P. Goodyear (Eds.), *The education ecology of universities: Integrating learning, strategy and the academy*. Routledge. <https://doi.org/10.4324/9781351135863>
- Fazey, I., Schöpke, N., Caniglia, G., Kendrick, I., Lyon, C., et al. (2020). Transforming knowledge systems for life on Earth: Visions of future systems and how to get there. *Energy Research & Social Science*, 70, 1–18. <https://doi.org/10.1016/j.erss.2020.101724>

- Freire, P. (2005). *Teachers as cultural workers: Letters to those who dare teach* (D. Macedo, D. Koike, & A. Oliveira, Trans. Westview Press.
- Fry, H., Ketteridge, S., & Marshall, S. (Eds.). (2014). *A handbook for teaching and learning in higher education: Enhancing academic practice*. Taylor & Francis.
- Fryer, M. (2012). Some key issues in creativity research and evaluation as seen from a psychological perspective. *Creativity Research Journal*, 24(1), 21–28. <https://doi.org/10.1080/10400419.2012.64923>
- Garrison, D. R., & Vaughan, N. (2008). *Blended learning in higher education: Framework, principles, and guidelines*. Wiley. <https://doi.org/10.1002/9781118269558>
- Glăveanu, V. P., & Kaufman, J. C. (2019). An introduction to creativity. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge handbook of creativity* (2nd ed., pp. 5–104). Cambridge University Press.
- Goodyear, P., & Retalis, S. (Eds.). (2010). *Technology-enhanced learning – Design patterns and pattern languages*. Sense Publishers.
- Gorman, M. (2021, 30 March). EAAE Workshop: Judging from a distance: Observations and provocations towards inclusive online design feedback and assessment practices. *The Radically Inclusive Studio*. <https://theradicallyinclusivestudio.org/2021/03/30/judging-from-a-distance-observations-and-provocations-towards-inclusive-online-design-feedback-and-assessment-practices/>
- James, A. (2021). Play in research? Yes, it is “proper” practice. *The Journal of Play in Adulthood*, 3(1), 9–30. <https://doi.org/10.5920/jpa.864>
- Kemmis, S. (2009). Action research as a practice-based practice. *Educational Action Research*, 17(3), 463–474. <https://doi.org/10.1080/09650790903093284>
- Koeners, M. P., & Francis, J. (2020). The physiology of play: Potential relevance for higher education. *International Journal of Play*, 9(1), 143–159. <https://doi.org/10.1080/21594937.2020.1720128>
- Krishnan, L. A., Sreekumar, S., Sundaram, S., Subrahmanian, M., & Davis, P. (2021). Virtual ‘study abroad’: Promoting intercultural competence amid the pandemic. *The Hearing Journal*, 74(4), 38–40. <https://doi.org/10.1097/01.Hj.0000743740.67628.33>
- Laurillard, D. (2013). *Rethinking university teaching: A conversational framework for the effective use of learning technologies* (2nd ed.). Routledge.
- Mallia, K. L. (2019). *Leadership in the creative industries: Principles and practice*. Wiley.
- Molenda, M. (2015). In search of the elusive ADDIE model. *Performance Improvement*, 42(5), 34–36. <https://doi.org/10.1002/pfi.4930420508>
- Morin, S., Robert, J.-M., & Gabora, L. (2018). How to train future engineers to be more creative: An educative experience. *Thinking Skills and Creativity*, 28, 150–166. <https://doi.org/10.1016/j.tsc.2018.05.003>
- Morkel, J., Delpont, H., Burton, L. O., Olweny, M., & Feast, S. (2021). Towards an ecosystem-of-learning for architectural education: Reflecting on a network of six pedagogical clusters. *Charrette*, 7(1), 15–40.
- Nicholls, J., & Philip, R. (2012). Solo life to second life: The design of physical and virtual learning spaces inspired by the drama classroom. *Research in Drama Education*, 17(4), 583–602.
- Oliver, R., & Herrington, J. (2003). Exploring technology-mediated learning from a pedagogical perspective. *Interactive Learning Environments*, 11(2), 111–126.
- Persico, D., Passarelli, M., Manganello, F., Gewerc Barujel, A., & Rodríguez Groba, A. (2020). The participatory dimension of teachers’ self-regulated professional learning about learning design: Beliefs versus behaviours. *Professional Development in Education*, 1–13. <https://doi.org/10.1080/19415257.2020.1787193>
- Philip, R. (2015a). *Caught in the headlights: Designing for creative learning and teaching in higher education*. PhD thesis. Queensland University of Technology, Brisbane, Queensland, Australia.

- Philip, R. (2015b, July 6–9). The paradox of creative uncertainty in learning and teaching. In T. Thomas, E. Levin, P. Dawson, K. Fraser, & R. Hadgraft (Eds.), *Research and development in higher education: Learning for life and work in a complex world*, 38 (pp. 382–391).
- Philip, R. (2018). Finding creative processes in learning design patterns. *Australasian Journal of Educational Technology*, 34(32), 78–94.
- Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education*, 2, 923–945.
- Russ, S. W. (2003). Play and creativity: Developmental issues. *Scandinavian Journal of Educational Research*, 47(3), 291–303.
- Seelig, T. (2012). *Ingenius: A crash course on creativity*. London, UK: Hay House.
- Schon, D. (2011). *The reflective practitioner: How professionals think in action*. Ashgate.
- Schwartzman, R. (2020). Performing pandemic pedagogy. *Communication Education*, 69(4), 502–517. <https://doi.org/10.1080/03634523.2020.1804602>
- Seeto, D., & Vlachopoulos, P. (2015, May). *Design Develop Implement (DDI): A team-based approach to learning design*. Paper presented at the THETA 2015 Conference, Gold Coast, Australia.
- Tharp, T. (2003). *The creative habit: Learn it and use it for life*. Simon and Schuster.