

Professional Learning Communities: Extending Boyer's Model to Student Cohorts

Tanja Glusac, Francesco Maria Mancini

Architecture, Curtin University, Australia.

How to cite: Glusac, T.; Maria Mancini, F. (2026). Professional Learning Communities: Extending Boyer's Model to Student Cohorts. In: 12th International Conference on Higher Education Advances (HEAd'26). Valencia, 15-18 June 2026. <https://doi.org/10.4995/HEAd26.2026.21728>

Abstract

Over the past five years, the authors have developed the Perth Urban Research Lab (PURL)¹ as a platform for teaching, learning, and engaging in design and the built environment, using the city as a permanent research lab. The platform leverages problem-based learning engagement with a community of educators, industry, and government experts to co-design and run learning projects, and to adopt specific disciplinary knowledge and skills (e.g., design) as a critical inquiry and research strategy to generate positive and sustainable societal impact. Reflecting on the learning projects delivered via this platform, the authors have mapped the learning experiences against Boyer's expanded definition of scholarship, proposing a transferable set of principles and tools applicable to other disciplines. Analysis of the learning projects through student outcomes, surveys, and Industry benchmarking shows that students remain highly engaged, thrive when working collaboratively, and forge connections with industry, with growing confidence in interdisciplinary education.

Keywords: Boyer¹; Scholarship of Engagement²; Experiential Learning³.

1. Boyer's Scholarship of Engagement, Experiential Learning and Design

Ashworth et al. (2004), building on Malcolm S. Knowles' research, argue that since 1975, the progressive deinstitutionalisation of traditional Higher Education providers has emerged as a

¹ PURL, founded by Mancini and Glusac in 2021, is a multidisciplinary platform that enables ongoing relationships between academia and communities in pursuit of defining the future of education and practice to enhance the human condition. Curtin's Urban Design and Complex Buildings subjects are taught under PURL's umbrella, benefiting from its extensive industry network.

² The original text was first published in 1996 and republished in 2016.

³ The master-apprentice model provides an opportunity for creative discussion and research via design dialogue; however, it is time-consuming and often too biased as it mostly relies on a single expert's voice -the tutor. It is also increasingly taxing for students engaged in paid employment while studying to navigate the cost-of-living challenges. The authors argue that analogous and more powerful results can be obtained by amplifying and redesigning the traditional studio crit through a thorough engagement model based on Boyer's epistemological approach

global trend, calling for more independent, open, and self-directed learning systems, radically changing the educator's role. Twenty years later, Ernst Boyer² shook the North American Higher Education Sector with his provocative text "The Scholarship of Engagement", calling for academics to leave their speculative world of refuge and discover, integrate, share, and apply knowledge in the real world. Boyer argued that, historically, all the most significant scholarship started from engagement with the contemporary reality and, if universities are to remain "one of the greatest hopes for intellectual, and civic progress... The Academy must become a more vigorous partner in the search for answers to our most pressing social, civic, economic and moral problems, and must affirm its historic commitment to ... the scholarship of engagement" (Boyer, 2016,15). In this paper, the authors argue that to respond to this challenge, the integration of multiple learning perspectives is required, with teaching teams acting as entrepreneurs, facilitators, moderators, and validators of knowledge and skill acquisition. Further, the authors argue that, rather than focusing on generalist education, it is necessary to expose students to the scholarship of engagement, which can be assumed as a more effective epistemological framework and should be used to foster students' multidisciplinary and cross-disciplinary learning, thereby enhancing their future-proofing capability to work collectively on problem-based learning and professional projects.

As educators in Architecture and Urban Design, a cross-disciplinary field still dominated by studio-based pedagogy, we saw the opportunity to embrace this challenge by placing student engagement and learning experiences at the centre of our teaching approach. The model, based on four principles we developed (Mancini and Glusac, 2020) and outlined in the second part of this paper, draws on inquiry-by-design and reflective practice methodology, in which students explore design problems iteratively while immersed in real-world contexts, and addresses the challenges of wicked problems, which cannot be resolved by the design disciplines alone. It also addresses the outdated master-apprentice dynamic³ by fostering integrated learning environments, encouraging critical questioning, and developing creative solutions beyond a purely cognitivist framework. The proposed integrated learning environment that promotes experiential, collaborative, and action-based learning, grounded in the theories of Dewey (1938), Kolb (1984), and Sheer et al. (2012), provides an effective response to evolving professional practices while integrating diverse pedagogic experiences, or, as Kolb (1984, 38) suggests: "Learning is the process whereby knowledge is created through the transformation of experience."

In Architecture and Urban Design, while learning by making remains vital, transformative experiences equally include site visits, industry reviews, practice engagements, and online consultations. Traditionally, these elements were added to studio routines as content delivery. Still, Mancini and Glusac (2020) advocate for their integration into a cohesive learning pathway that continually engages with cognate and non-cognate disciplines, depending on the nature of the investigated problem. More specifically, and in line with the four principles, the learning

activities are structured to mirror professional settings, involving more actors on the learning theatre stage to play different roles and helping students do the same. Such an approach to the learning problem follows Kolb's four-stage learning cycle, consisting of concrete experience, reflective observation, abstract conceptualisation, and active experimentation (Kolb 1984). Because the four stages are cyclical, learners link each step to one another rather than prioritising them (Healey & Jenkins, 2000). This way, students can go through each stage of their learning as part of a continuum, corresponding to their growth in theoretical knowledge, practical skills, creative applications, and a life-long collaborative approach. In Architecture, this sequence aligns well with the Design Problem resolution model proposed by Stempfle and Badke-Schaub (2002). Building on their critique of different design methodologies, the German researchers proposed a theory of the essential elements of design thinking—a transdisciplinary framework conceptualised in different models, such as Stanford d. School 5-step design thinking, the Design Council double diamond, IDEO human-centred design, etc. (Ozsoy, Canan M., Pinar Mengüç M, 2024), identifying four basic operations—Exploration, Generation, Comparison, and Selection—that inform the Path (Process) and the Resolution (Content) of any Design Problem. While Stempfle and Badke-Schaub (2002) privilege the empirical strain as a practice to enhance self-directed learning and criticise the normative as too restrictive of creative thinking and the artistic as too far from real-life constraints, we have taken an integrated approach offering a program, that balances these three components through a highly curated set of learning activities—the learning toolkit, research and engagement events to meet different learning needs and preferences.

Choosing to differentiate learning types enabled the authors to align Kolb's idea of experience with a constructivist vision (Scheer, 2012), thereby enabling the utilisation of experiential learning theory when teaching design. The constructivist framework helps individuals make sense of reality through an immersive engagement with the world of objects around them (Crotty, 1998), or as observed by Schear et al. (2012, 9 drawing from Reich (2008) and Kolb (1984), 'In constructivism, learning is a process of individually self-organising knowledge. The learning process is unpredictable, and knowledge constantly alters through new insights gained through individual experiences.' To enable a very diverse group of students to self-organise knowledge, the teaching team, with external partners, developed a more immersive learning structure supported by 'the mélanges of cultures and subcultures into which we are born' (Crotty, 1998, 79) by offering a structured set of learning activities that extend beyond the confines of traditional class-based pedagogies.

We shaped the idea of a creative, socially connected and engaging learning environment by applying design thinking principles (Dorst, 2011), which value learning processes as well as outputs, using the notion of urban ecology—the core of the learning content—as a metaphor for a learning environment. In such an environment, relationships among all actors, including an increasing reliance on AI tools and—in the near future—agents, are integrated across multiple

learning components, yielding more valuable outputs collectively than the sum of the individual teaching components. The resulting learning is a more extensive and holistic attainment of competencies and soft skills than that taught in traditional university classrooms, as it establishes a connection with the broader society, which, we argue, aligns well with Boyer's four points contributing to his Scholarship of Engagement framework – Scholarship of Discovery, Integration, Knowledge Sharing and Application.

2. The Four Principles Against Boyer's Four Interlocking Functions

Teaching in Urban Design at Curtin is grounded in four fundamental principles of experiential learning that permeate the coordination, implementation, and evaluation of students' work, as evidenced by the assessment briefs and marking rubrics. The authors argue that these principles resonate with the four interlocking functions of Boyer's Scholarship of Engagement.

2.1. Boyer's Scholarship of Discovery and the First Principle

The first principle of using the city as an open-air book aligns well with Boyer's Scholarship of Discovery, which argues "that universities, through research, simply must continue to push back the frontiers of human knowledge" (Boyer, 2016, 21). The city as an open-air book principle was first conceived and tested in the Study Tour of 2019, when the authors travelled with 15 Master of Architecture students to Italy, conducting the travelling Urban Design fieldtrips in Rome and Milan. Adopting this learning approach through the built environment experience became a regular semester-based practice in Urban Design units from semester 2, 2019 onward.

In line with this 'learning in place' principle, student teams engaged in intense, didactic activities to develop a historical, morphological, and experiential analysis that informs a comprehensive and coherent urban and architectural response at various scales. From the students' perspective, such educational journeys are vehicles for discoveries, both in terms of knowing and learning, whereby students develop a first-hand, real-world understanding and appreciation of complexities and "pressing social, civic, economic and moral" challenges (Boyer, 2016,15) that impact urban environments and architecture in different regions.

Since 2021, the team has extended this practice to the domestic course to uncover Indigenous perspectives by inviting senior cultural advisors to share Caring for Country knowledge and values, which students were expected to consider in their designs. This fostered greater student awareness and respect for intangible values concerning a place's identity, which, in turn, shape contemporary urban domains. The students responded well to this learning approach due to its immersive qualities, the high relevance of the learning tasks, and its practical application in their studies.

To respect the culture and land of the First Nation People, a site visit with the university's Aboriginal advisor was organised. This provided cultural context and insights grounded in the Aboriginal perspective, giving us the fundamentals and mutual understanding needed to proceed with the design. (Ho Yiu Rex Cheng, 2023 Urban Design student).

2.2. Boyer's Scholarship of Integration and the Second Principle

Boyer's second principle of scholarship integration, which identifies "an urgent need to place discoveries in a larger context and create more interdisciplinary conversations ... or in the new hyphenated disciplines, in which the energies of several different disciplines tend enthusiastically to converge" (Boyer, 2016, 21-22), equally aligns well with the second principle of our framework – engagement with multidisciplinary experts. The authors have strengthened the integrated learning component of the model by working with the Western Australian Government Architect (WAGA) and the Department of Planning, Land and Heritage (DPLH) on adopting "the objectives, measures, principles and processes which apply to the design and assessment of built environment proposals through the planning system" as set by the Design WA State Policy 7.0. Consequently, they introduced the multidisciplinary Design Review Panel⁴, in alignment with the Government of Western Australia's commitment to improving the quality of the built environment. The clarity of the connection between academic and professional learning objectives culminated in the design of authentic assessments. To achieve this, the team meets with participating industry stakeholders before the start of the semester to co-design assessment briefs that address current and real urban problems for a collaborative studio to address the State Planning Policies, the National Standard of Competencies for Architects (NSCA), and the UN Sustainable Development Goals (SDGs). From the student perspective, the co-design of the brief exposes students to the inner workings of the design and built environment industry and local and state governments, gaining insights into real-world problems and stakeholders' expectations (Chen et al., 2020).

The utilisation of the design review⁴ model as 'assessment as learning', whereby two weeks before the assessment submission, a multidisciplinary panel evaluates each team's project presentation and provides formative, dialogic feedback (Shute, 2008), enabling students to immerse themselves in a simulation of a professional setting before graduation. Redesigning the learning experience this way yielded predominantly positive results, as evidenced by consistently high average class participation and engagement rates exceeding 90% each week, average retention rate above 97%, pass rate above 96% and overall student satisfaction above 88% across 21 subjects taught following the four fundamental principles of experiential learning since 2019. *I am impressed with the structure of the teaching program in that it robustly combines iterative processes with real world framing and situations to deliver a high quality,*

⁴ Design Review Panel is a process adopted by local governments in Western Australia, whereby planning applications are subjected to rigorous design review of proposed developments by a panel of experts to ensure the best outcome for the environment and community.

dynamic and engaging learning experience. (Catherine Townsend, ACT Government Architect, 2024) processes with real world framing and situations to deliver a high quality, dynamic and engaging learning experience. (Catherine Townsend, ACT Government Architect, 2024)

2.3. Boyer's Scholarship of Sharing Knowledge and the Third Principle

Boyer's third principle, the **scholarship of sharing knowledge**, emphasises communicating research "not only with their peers but also with future scholars in the classroom to keep the flame of scholarship alive" (Boyer 2016, 22). Similarly, the program structure was designed to support the design process as a continuing and collaborative discourse, its third principle. Rather than teaching being simply an evaluated execution of instructions, it is a cumulative and iterative process (Gibbs 1988 and 2013), rather than it being a product, it enables students to share conversations with peers, academics, industry and community reps across the semester which far more closely mirrors real-world situations and enables more extraordinary richness of evaluation and reflection: *The combination of reviews by academic staff and industry experts throughout the programs provides a solid foundation for the academic and professional development of the students. This level of interaction with professional leaders is an opportunity that many students might otherwise not have. (Craig Smith, Architect of the City of Perth, 2025).*

Similarly, Mancini and Glusac have been disseminating the four principles with other academics in Australia and beyond, including convening a benchmarking panel in July 2024 consisting of national and international academics and professionals who praised the program's transferability across diverse contexts, including international collaborations such as STADIO University in South Africa, thereby demonstrating its adaptability and global impact. They pointed out that the program's structured approach equips students with a strong foundation and guidance, enabling employer-recognised work through a transformative learning experience that bridges academic innovation with real-world relevance.

2.4. Boyer's Scholarship of Application of Knowledge and the Fourth Principle

Lastly, the **application of knowledge**, Boyer's final principle, calls for "making knowledge useful" in order "to avoid irrelevance" (Boyer, 2016, 23). Working on real-world problems co-designed with industry and community, while utilising the latest technology and trans-country working principles, enables Curtin students to be well-prepared and relevant, in line with the framework's fourth principle. 137 St Georges facility's distributed learning system helped integrate live action with technology by incorporating online platforms such as GIRAFFE, which allows students to work on the same project simultaneously, and software like Solstice enables a digital critique of students' work and feedback sharing in real-time, further expanding the learning environment in and beyond the classroom effectively training students to confidently enter the multi-national collaborative working environment of modern day

architectural practices. *This advanced learning environment introduced innovative teaching and learning practices, allowing the sharing of critical feedback in real-time using blended experiences and emerging instructional technology. The students I observed were engaged and highly motivated (Blackley, former Dean L&T Faculty of Humanities, Curtin University, 2021).*

These tactics help the team facilitate students' engagement while building individual confidence, trust in each other, and empathy as designers. To further strengthen industry engagement and professional skills, the authors introduced workshops with industry straight after the review sessions, involving partners from various disciplines as collaborators in students' learning. Since 2023, the framework has expanded to include the PURL Global Engagement Series, which introduces a keynote lecture, an intensive workshop, and an exhibition delivered by international design leaders such as Mario Cucinella, OMA Australia, and Robert Adams. *The program is exemplary in its underpinning of equity and inclusion – due partly to the teamwork requirements, the iterative structure and varied nature and forms of engagement. A strongly positive student experience has been demonstrated. Importantly, the positive results are repeatable. (Catherine Townsend, 2024)*

3. Conclusion

The Boyer's engagement model offered an opportunity to integrate depth of disciplinary knowledge with the paramount contemporary need to expand interaction with cognate and complementary disciplines to address wicked problems in the design of the built environment in an efficient and effective way, leveraging curated and coordinated planning and offering of opportunities for discovery, integration, sharing and application of knowledge to students.

By aligning the learning framework based on the four principles with Boyer's Scholarship of Engagement, the authors demonstrated the program's relevance through its transferability across different physical and conceptual design scales in the real world, with the framework being applied across various subjects and teaching areas in Architecture and Urban and Regional Planning, which are grounded in principles and collaborative practices in program design and delivery, enabled by an interinstitutional, open, less formal network of educators.

Sharing common goals and different perspectives is best expressed in the following statement that attests to the program's innovation, transferability and impact: *This approach balances the power relations often criticized in architecture and design education, allowing students to have agency and participate as worthy professionals in the making. (Jolanda De Villiers Morkel, educator and program lead at STADIO, South Africa, 2024)*

References

- Afacan, Y. (2014). Introducing sustainability to interior design students through industry collaboration. *International Journal of Sustainability in Higher Education*.

- Allen, D. E., Donham, R. S., & Bernhardt, S. A. (2011). Problem-based learning. *New Directions for Teaching and Learning*, 2011(128), 21-29.
- Ashworth, F., et al. (2004). Learning Theories and Higher Education. Vol. 2. Iss. 1. Article 4.pp. 1-16. doi:10.21427/D7S43V Available at: <https://arrow.tudublin.ie/level3/vol2/iss1/4>
- Boyer, E. L. 2016 (1996). The Scholarship of Engagement. *Journal of Higher Education Outreach and Engagement*. Vol. 20. No. 1. pp. 15-28.
- Chen, K., Lu, W., & Wang, J. (2020). University-industry collaboration for BIM education: Lessons from a case study. *Industry and Higher Education*, 34(6), 401-409.
- Crotty, M. (1998). *The Foundations of Social Research. Meaning and Perspective in the Research Process*. St Leonards, NSW: Allen and Unwin.
- Dewey, J. (1938). *Experience & Education*. New York, NY: Kappa Delta.
- Dorst K (2011). The Core of Design Thinking and its application. *Design Studies*. 32 (6) November.
- Emam, M., Taha, D. and ElSayad, Z. (2019). Collaborative pedagogy in architectural design Studio: A case study in applying collaborative design. *Alexandria Engineering Journal*, 58, 163-170
- Erktin, E., & Soygeniş, S. (2014). Learning by experiencing the space: Informal learning environments in architecture education. *Boğaziçi Üniversitesi Eğitim Dergisi*, 31(1), 81-92.
- Gibbs, G. (1988, 2013). *Learning by Doing*. Oxford University Press, UK.
- Healey, A. and Jenkins, I. (2000). Kolb's experiential learning theory and its application in geography in higher education. *Journal of Geography*. 99 (5) 185–195.
- Kolb, D. (1984). *Experiential Learning, experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Lawson, B. (2006). *How Designers Think – The Design Process Demystified*. 4th ed. Oxford: Elsevier/Architectural Press.
- Lawson, B. (2018). *The design student's journey: Understanding designers' thinking*, London: Routledge.
- Ozsoy, Canan M., Pinar Mengüç, M (2024). A Transdisciplinary Approach and Design Thinking Methodology: For Applications to Complex Problems and Energy Transition. *World* 5, no. 1: 119-135. <https://doi.org/10.3390/world5010007>
- Rau, W. and Heyl, B. S. (1990). Humanising the College Classroom: Collaborative Learning and Social Organisation among Students. *Teaching Sociology*. 18 (2), 141-155.
- Scheer A., Noweski C. and Meinel C. (2012). Transforming Constructivist Learning into Action: Design Thinking. *Education in Design and Technology Education: An International Journal* 17.
- Shute, V. J. (2008). Focus on formative feedback. *Review of educational research*. 78(1), 153-189.
- Stempfle, J. and Badke-Schaub, P. (2002). Thinking in design teams – an analysis of team communication. *Design Studies*. Vol 23. No. 5 September 2002. Elsevier. pp. 473-496.