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Community Engagement begins on Country: Collaborative Learning and Research at Budj Bim

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The collaborative partnership between the Faculty of Engineering and Information Technology (FEIT) at the University of Melbourne (UoM) and the Gunditj Mirring Traditional Owner Aboriginal Corporation (GMTOAC) is grounded in Country, and weaves together western 'engineering' and Indigenous 'ingenuity' to co-design, co-develop and co-deliver a multi-faceted, multi-dimensional and multi-

relational learning experience in engineering.

Our story began with a meeting on-Country at the Budj Bim National and World Heritage Cultural Landscape, where we could share an idea and an ideal, an imagining of a shared learning. Circumambulating the question: "What learning, for whom, and why is it important?", we explored how the interaction between the University community and the Gunditjmarra people, their culture and their knowledges, would be embodied to ensure exchange of knowledge and the creation of mutual benefit.

Working in an emergent and iterative way that involved deep listening,

discussion, reflection, researching, experiencing, learning, and trusting that all will come together in a meaningful way, we evolved a framework to guide our engagement process. Our framework embraces five key principles – **philosophy, place, people, projects, and practice** – each of which informs and influences the other four (Prpic and Bell, 2022).

Philosophy

Engagement begins with a clear understanding of who we are and what we bring to the relationship. Our philosophy, or worldview, involves mind, heart and action and represents our most fundamental beliefs, assumptions, values and attitudes about the world

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we inhabit. Hess and Strobel (2013, p. 646) recently highlighted the striking similarities between the engineering profession and the dominant (western/ colonial) worldview, pointing out prevalent ideologies such as

"a reductionist approach to understanding life and the interrelationships between phenomena", "progress as a process of continually transforming the natural world into more valuable [through exploitation] and more human-made environment" and "imposition of mechanistic models on non-mechanistic scenarios".

For the UoM community, a significant insight was becoming conscious of our western worldview. This is not an easy task as worldviews are virtually unconscious phenomena, which are taken for granted and rarely examined critically (Sire, 2006). In their recommendations for incorporating Indigenous perspectives in the engineering curriculum, Kennedy et al. (2016) proposed that we 'start with a new philosophy' so that we can 'tailor the learning environment'. We are invited to step over the threshold from a world viewed through a western engineering lens into the world as seen, understood, and experienced by Indigenous people for whom 'connection to Country' is fundamental to their identity and way of life. Unlike the dominant engineering approach,

Indigenous engineering (ingenuity) is a relational and regenerative practice, underpinned by a philosophy that emphasises a knowing that we are part of nature. This in turn shapes ontology, epistemology, axiology, praxeology and pedagogy. The on-Country learning experience with the Gunditjmarra provides an opportunity where all participants from UoM are invited to question, explore and reflect on individual and collective philosophies, values, attitudes, culture, knowledge systems and unconscious biases.

Place

Engagement on-Country is essential for any attempt to indigenise the curriculum. Budj Bim, a UNESCO World Heritage Cultural Landscape (UNESCO World Heritage Centre, 2019) is located in southwestern Victoria. It is home to the Gunditjmarra people who for at least 6,600 years have applied sophisticated technological and philosophical engineering principles to develop the oldest and most extensive engineered aquaculture system in the world, which includes about 100 km² of weirs, races, water channels, dwellings, elaborate eel and fish traps, hunting hides and stone dwellings (McNiven and Bell, 2010, Rose, Bell & Crook, 2016).

By creating the time and space to "listen to the land" the UoM community is invited to experience that

"Indigenous knowledge practices are ecological encounters of profound ethical relationality that acknowledge the act of living in place as a site of learning how to be in place" (Kelly, 2020, p. 186).

Through engaging with the principle of 'place' we can experience the Budj Bim Cultural Landscape through a temporal lens that stretches back through time over many millennia and embraces a vision reaching far into the future (Bell and Johnson, 2008). Within the rich Budj Bim Cultural Landscape we engage with 'local and cultural phenomena as a focus of learning' (Smith, 2002), where we can experience, engage with, and learn about:

- » The 'nature of place' and the importance of Country as a nourishing and inspirational landscape filled with the spirit of creation and rich with significance and stories of the ancestral past;
- » Indigenous Cultural Heritage;
- » The Gunditjmarra story;
- » The impact of colonisation, the Lake Condah Mission Story and the wealth of knowledge that has been lost;
- » The geological and ecological features of Stone Country, including native flora and fauna, and Gunditjmarra seasons. They also





consider and reflect on aspects of the landscape that might inform their design projects, such as resources and materials available, the topography of the landscape and textures within the landscape;

- » Traditional stone structures such as weirs, races, water channels, dwellings, elaborate eel and fish traps, hunting hides and other constructions whose purpose is yet to be identified;
- » Traditional practices of eel farming, cultural burning, conservation, landscape management and

systems of engineering the aquaculture infrastructure to maintain its integrity and purpose as well as contemporary practices of sustainability, and land and resource management;

- » Gunditjmara knowledge of aquaculture systems, climate change, ecology and hydrology; and
- » Contemporary cultural renewal activities where traditional, new and emerging technologies contribute to the healing of Country.

Since travelling to Budj Bim takes at least four hours, we spend two or three

days on-Country each time we visit, staying at the Lake Condah Mission. We can take it slow, and really connect to the place. We can observe seasonal changes connecting elements in the cycles of the Gunditjmara seasonal calendar. We can be curious and begin to question and explore, listening intently and seeking space and time for reflection, gaining a deep understanding of the context and setting for the community-led projects.

People

Our partnership brings together two communities – the Gunditjmara community and the University of Melbourne community – each with their own worldview, knowledge system and culture. This situates the two communities in what Martin Nakata (2007, p.272) called the '*cultural interface*', where we embrace attitudes of respect, relevance, reciprocity, responsibility and relationality, and lay the foundations for authentic, lasting and creative collaboration. While we initially came together to co-create an undergraduate multidisciplinary subject, we soon learned that when people engage in genuine two-way dialogue, unexpected and transformative outcomes ensue. It is important to note that at the heart of our partnership is a philosophy of openness and inclusion, and an acknowledgement of the value



of the collaboration for both the UoM and the GMTOAC communities.

The diversity of people who are engaged in the Budj Bim learning experience include members from both Gunditjmara and university communities. Gunditjmara Elders, Rangers and community members all contributed to the student learning, each making a unique contribution of knowledge and perspectives. The University community has grown considerably, and now includes four cohorts of students sharing in the on-Country learning. This includes foundation year Indigenous students enrolled in Bachelor of Science Extended program, third year students enrolled in the subject *Indigenous Engineering and Design*, final year Master of Engineering students undertaking capstone projects and PhD students and post-doctoral research fellows. Both UoM staff and students have commented on the impact of the shared experience of staying at the Lake Condah Mission – we prepare meals together, keep a collective lookout for snakes and the tell-tale trickle of blood from a well-fed leech, share stories around a campfire, and discover the delight in co-creating the multi-faceted, multi-dimensional and multi-relational learning experience.



Projects

Community-led projects are the cornerstone of our collaborative partnership. Every project is co-designed to meet the appropriate learning outcomes for each cohort of student. All students learn how to apply Aboriginal community consultation protocols and principles and each proposal contributes to ongoing learning of cultural heritage for future generations of Gunditjmara people; supports the GMTOAC in their efforts of conservation, regeneration and

management of the Budj Bim Cultural Heritage Landscape; and provides opportunities for the community to rebuild their cultural heritage and connection to Country.

Projects have included themes such as monitoring the water quality and aeration system of waterways, developing a plant regeneration program, creative use of recreational outdoor spaces at the Lake Condah Mission, designing a bird hide where Gunditjmara youth can learn more about the birds at Budj Bim, and

geospatial landscape mapping using Laser imaging, detection and ranging (LIDAR) technology. Depending on the focus projects can highlight technology innovation and application, applied project design, engineering management, community engagement, planning and facilitation, place-based accredited training, and Gunditjmara skills development and capacity building.

One of the exciting and unexpected outcomes is that the real-world community-led projects have resulted in two major collaborative research projects. One is funded by the ARC and is aimed at deepening our understanding and conceptualisation of the technological ingenuity of the Budj Bim aquaculture system. The other project, funded by the University, is aimed at revival and renewal of the Gunditjmara Seasonal Calendar.

Practice

The interplay of the four key principles discussed thus far – philosophy, place, people, projects – are all brought together in the **practice** we adopt to embody the **emergent, relational and collaborative learning experience**.

Our practice involves several critical aspects that take the learning experience beyond the usual university educational structures. These include:

Orientation: Orientation is essential. The first class is dedicated to welcoming students and creating a space where they can meet Gunditjmara community members and start building relationships with each other. This fosters an open and trusting learning environment where students are invited into a process that values collaboration, collective knowing, embracing multiple, diverse and unexpected perspectives, and puts listening and questioning ahead of “tell me what I need to know”.

Taking the time to relate: To build a successful relationship takes time, particularly in the initial emergent stage. As we sit at the frontier of our unknowing, we need time to explore common ground. Time to connect and learn about each other, time to make mistakes and learn from them, time imagine what is possible.

Cultural heritage: Gaining an awareness of, and sensitivity to, Indigenous Heritage and Cultural values and applying this knowledge across a diversity of contexts is one of the learning outcomes of our collaborative partnership. Significant time is devoted to research and exploration of Indigenous Cultural Heritage, both in general, and specifically in relation to the Gunditjmara community and Budj Bim.

Working collaboratively: Engaging in an authentic and interdisciplinary process students work with community members to undertake problem identification, formulation and solution whilst considering Indigenous community needs and perspectives. University partnerships offer numerous benefits to Indigenous communities, encompassing access to advanced technology and expertise, capacity building, and cultural preservation. Through collaborations with universities, Indigenous communities gain access to cutting-edge technology, such as LiDAR and 3D aerial scanning, and the expertise necessary to fully utilize these resources. This access fosters the development of new skills and builds capacity in various fields, including technology, research, and project management. These partnerships also play a crucial role in the preservation, documentation, and promotion of Indigenous culture, traditions, and knowledge. By participating in academic research and technological advancements, Indigenous communities ensure their perspectives and knowledge are included, leading to more comprehensive and culturally relevant research outcomes. In essence, university partnerships provide Indigenous communities with the tools, opportunities, and recognition



necessary to thrive while preserving and promoting their unique cultural heritage.

Reflective practice: The framework used to guide students has been developed over ten years and engages students in a reflective process that embraces three domains of learning:

- » the affective domain (Krathwohl, Bloom & Masia, 1964), which is essentially about **meaning making** and engages students with their emotional interpretation of perceptions, information, or knowledge;
- » the cognitive domain (Bloom, 1956) which is essentially about **sense making** and engages students in deepening their knowledge and understanding; and
- » the conative domain (Huitt and Cain, 2005) which engages students in personal, intentional, planful, deliberate, goal-oriented, or the striving component of **motivation**.

Into the Future

It is a vast landscape of possibilities that stretches before us. – a landscape we will traverse together. Our experience to date has demonstrated that we have woven a sturdy container to hold and support new learning for all engaged in our partnership. As our partnership develops, and our learning deepens, our

collective intentions will continue to evolve bringing new questions to focus our attention. But then again, perhaps the quest is more about the story and not so much about the questions, a story whose words shimmer on the breath between one telling and the next and fervently resist being pinned to a page.

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