



Students as co-creators of an Aboriginal & Torres Strait heritage garden and interactive maps

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Over the last decade in response to the Universities Australia National Best Practice Framework for Indigenous Cultural Competency (2011), Australian Higher Education curricula have become increasingly permeable to First Nations ways of knowing being and doing. Online Campus Floras ("Turning campus grounds into botanical learning and teaching spaces," Quinell, The University of Sydney, 2020) can offer valuable teaching resources for biology and for experiential place-based learning beyond biology (e.g., in ecology, human geography, storytelling) as Aboriginal and Torres Strait Islander heritage walking trails (Muecke & Eadie, 2020), and as portals to translate intergenerational knowledge by offering cultural, experiential learning for everyone (Muecke & Eadie, 2020). Partnerships between schools, two Australian universities (one in Brisbane and one in Sydney) and respectful working practices with First Nations knowledge holders in use of co-designed citizenship science projects to create, curate and disseminate location and information about Indigenous Knowings in plants by incorporating learning objects (photos, videos) derived from observations of campus flora at a university in Brisbane, Queensland, is the first of its kind to create a distinctive learning environment celebrating co-creation alongside Indigenous Knowings in curriculum via use of technology.

The value of outdoor learning in the context of First Nations' cultural connections to the living worlds is well-documented, with most botanical gardens and universities offering Aboriginal heritage trails (e.g., Royal Melbourne Institute of Technology ("RMIT Keelbundoora scarred trees and heritage trail," 2020), Murdoch University ("Murdoch University: Ngoolak, Poolgala and Koorloo Walk Trail," 2020), Monash University ("Monash University: Aboriginal Trail," 2020)), The University of Sydney ("Patyegarang Language Trail, 2016). In addition, citizen science approaches offered the means for students and knowledge experts to collaborate in an online environment whilst working outdoors (e.g., Pettit et al., 2014; Struwe et al., 2014). Citizen science applications like iNaturalist App, resolve the challenges for collaborators (students and knowledge experts) when unable to physically meet due to remote locations and COVID-19 restrictions, to meet online and work in equal partnership to develop their digital literacies and resources.

Here, First Nations plant knowledge was gathered in partnership from an external Indigenous plants/garden local consultant for Brisbane with students from our school collaborators via regular guidance and consultation. Learning objects (i.e. plants, yarnng circles, native beehives) were crafted into a virtual educational tour using an online mapping system iNaturalist App to facilitate blended learning experiences. Students follow up by participating in development of appropriate inclusion of this information in the curriculum.

Use of these online resources can widen participation outcomes and deeply embed Aboriginal and Torres Strait Islander perspectives into school and university curricula leading to preservation and promotion of Indigenous Knowings both to a national and international audience. Permission to disseminate and share this information as a teaching resource between First Nations, participating schools and the two participating universities was secured. Implications for further practice include co-creation and development of online Aboriginal & Torres Strait Islander heritage walking trails at other universities, linking to local and national botanical gardens and Aboriginal and Torres Strait Islander resource websites.

Keywords: botany, Indigenous gardens, iNaturalist App, virtual, co-creation, schools, place-based learning

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