THE WICKED PROBLEM OF MICROPLASTICS – AN INTERDISCIPLINARY SOLUTION

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WICKED PROBLEMS

Traditional university education equips students with deep discipline knowledge and skills. However, our planet faces many challenges and wicked problems that require solutions to span disciplines and need graduates with essential transferable skills such as critical thinking, problem solving, prioritisation, communication and teamwork. Our students require a flexible, open mindset that facilitates interdisciplinary problem solving. One such challenge is the microplastics pollution which has extended into all corners of the globe. This messy, multifaceted problem lacks clear boundaries and defies simple solutions. Such complex problems are best tackled with interdisciplinary approaches to break down boundaries between disciplines and generate new ways of thinking and integrated solutions.

AN INTERDISCIPLINARY APPROACH

In 2022, academics from the Science Schools within the Faculty of Science, Medicine Health at the University of Wollongong (UOW) partnered with undergraduate students, industry professionals and academics across other faculties to design and deliver a one-day interdisciplinary education event. This extracurricular activity brought together over thirty, mostly third year, undergraduate students across science, law, environmental engineering, public health, and geography and sustainable communities to tackle the issue of microplastics, and their impact on environmental and human health. The students were allocated to teams and provided a schema to identify one critical source or pathway of microplastics waste and to explore solutions to reduce its impact. Students used the strengths of their varying disciplines and considered the role of individuals, local government, Non-Government Organisations (NGOs), industry and/or corporations when developing a solution through a one-slide infographic/poster and three-minute pitch.

IMPACTS ON STUDENT DEVELOPMENT

Our initiative was purposefully aimed at third-year students to provide further work-integrated learning (WIL) opportunities pre-graduation and to focus on developing skills that may have been impacted during the pandemic and the move to online activities. Student feedback was very positive and highlighted key learnings about the benefits of networking, students putting themselves back out there socially and professionally, alongside combining expertise and developing creativity. Students enjoyed the topic area and gaining experience and confidence in presenting their ideas to others. At the same time student attendees, and our student partners gained recognition of their extracurricular involvement through a UOWx certification, noting key employability skills developed through their involvement. Students were also invited to a field trip to sample microplastics at a local beach in partnership with the Australian Microplastics Assessment Project (AUSMAP). The ongoing challenge is to work towards embedding such opportunities within curricula which involves navigating complex university governance structures, internal funding and staff models, course constraints and timetabling. The presenters welcome discussion.

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