The importance of research culture for the student experience at regional campuses

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Deakin University

- Campuses (5): Melbourne, Geelong (2), Warrnambool, Werribee
- Faculties (4): Arts & Education; Business & Law; Health; Science, Engineering & Built Environment
- 34,198 on campus and 13,200 off campus undergrad students
- 31% of students enrolled at Deakin study at the regional campuses in Geelong and Warrnambool
- 22% of domestic students enrolled at Deakin are from regional or remote areas
- 13% of students come from low socio-economic status backgrounds
Deakin’s core commitments

• Equity and access for individuals and groups who might not otherwise enjoy the benefits that flow from participation in higher education
• Continuing education and life-long learning
• Contemporary and flexible teaching programs
• An international outlook
• Rural and regional engagement
• Cutting-edge research that makes a difference
Warrnambool

- Great South Coast population 126,000
- Agricultural production $2 billion per annum
- Manufacturing production $4 billion per annum
  - approx 25% dairy
- Region produces 35% of Victoria’s milk, beef and lamb from 18% of land area
  - reliable rainfall
- Warrnambool city population 33,000
- Strong education, health and services sectors
Deakin Warrnambool

• Sherwood Park campus
  – All faculties represented
  – Approx 1100 on-campus students
  – Strong research in marine and aquaculture science, education, accounting etc.

• SW Healthcare
  – Deakin medical school 3rd and 4th year internships
  – Approx 30 students each intake

• Warrnambool City Centre
  – Corporate and community focus
Deakin Warrnambool research

• All Faculties active in research

• Science
  – Marine and freshwater science
  – Fisheries and aquaculture
  – Spatial data processing and analysis

• Business
  – Accounting
  – Management and marketing
  – Environmental economics
  – Modelling
Deakin Warrnambool research

• Health
  – Population health (e.g. diabetes) in regional areas
  – Links to UDRH and SW Healthcare

• Arts and Education
  – Governance and sustainability
  – Regional educational attainment and success
  – Teacher education
Research challenges

• Attracting high profile researchers
  – Existing research culture and infrastructure important
• Geographic isolation
  – High quality digital communications (e.g. cross-campus seminars)
  – Support for visiting scientists to regional campuses
• Competition for funding
  – Industry and local government partnerships critical
  – Internal support for seminar speakers, conferences etc.
• Ministers Hockey and Pyne!

Research advantages

• Regional focus
  – Most governments provide targeted regionally-specific funding
  – Strong links with local industry partners

• Natural environment
  – Regional campus locations often better suited for some types of research
    • Aquatic science at Deakin’s coastal campus
    • Small-business accounting in regional city

• Cross-disciplinary research
  – Silos between disciplines more permeable at smaller campuses

• Linking research programs directly with teaching
  – Involving students directly in research projects
  – Encourages Honours and HDR enrolments
Marine science at Warrnambool

• Long history of aquatic science research at Warrnambool Institute of Advanced Education and then Deakin Warrnambool
  – Research-active staff at WIAE
  – PhD students
  – Focus on local issues (e.g. catchment and coastal management, aquaculture, adjacent Hopkins estuary)

• Aquatic science and fisheries and aquaculture degrees since mid 1990s
  – Marine biology degree introduced in 2005

• Significant contribution to ERA Round 1 (2010)
  – 4 (above world standard) in fisheries (FoR 0704)
Deakin University will invest $5 million over the next five years in an initiative set to place its Warrnambool Campus in the international spotlight for marine and aquaculture research and teaching.

This major investment will position the University’s Warrnambool Campus as a local, national and international centre for excellence in marine science and aquaculture research, according to Professor Chris Gray, Deakin’s Pro Vice-Chancellor (Science and Technology).

“The University’s fisheries and aquaculture research was judged as ‘above world standard’ by the Australian Research Council’s Excellence in Research for Australia this year. The plan now is to build on the existing strengths to move Deakin’s research to ‘well above world standard’,” Professor Gray said.

“The investment we are making in state-of-the-art facilities will ensure our research is of the highest quality and creates fantastic opportunities for our students,” Professor Gray said.

Deakin has a strong background of research and teaching in aquatic science and aquaculture, mostly conducted at its Warrnambool Campus.

SHOWCASE FACTS

- Upgrading the aquaculture research facility to use seawater, as well as its...
High profile researchers

• Myth that high-profile researchers won’t move to smaller, regional campuses
  – Need to sell quality of infrastructure and staff as well as lifestyle
  – Confidence in sustainability of campus critical
  – Opportunities for partners

• Prof Graeme Hays
  – Recruited from UK in 2013 as Chair in Marine Science
  – High profile (H-index 45)
  – Wanted smaller campus/city (loves fishing!)

• Assoc Prof Giovanni Turchini
  – Recruited from Italy as industry-funded post-doc in 2003, after visiting in 2001
  – Multiple ARC success, now Assoc Head of School
Research and the student experience
Student experience and research

- Students assisting with research projects
- Research project units
- Work-integrated learning
- Honours programs
  - Availability of course-work across campuses
- Higher degree programs
  - Availability of suitably qualified staff and scholarships
Marine habitat mapping

• Mapping of local marine environments using research vessel and multibeam sonar
• Partners include local government and Parks Victoria
• Numerous undergraduate student volunteers (all year levels)
  – Direct practical experience in marine research interacting with researchers and partners
• Numerous 3rd year project students, six Honours students, two PhD students

http://www.pozible.com/voyagesofdiscovery
Biodiversity of water storages

• Partnership with local water authority (Wannon Water), catchment management authority (Glenelg-Hopkins) and consultants (Austral Research and Consulting)

• Three completed 3rd year projects
  – Two students now doing Honours

• Two completed Honours projects
  – Both students now doing PhDs

• All students presented multiple times to industry

• Two manuscripts in preparation
  – Industry partners and students (incl. undergrads) as co-authors
Cross-disciplinary

- Smaller, regional, campuses should be much better at cross and inter-disciplinary research
- Two key (opportunistic) strategies foster cross-disciplinarity at Warrnambool
  - Nearly all academic staff from four faculties in the same building
  - Only one place on campus to get coffee!
- But faculty and discipline silos occur at all universities
  - Competition for taught load (EFTSL)
- Undergraduate (incl. Hons) research projects can increase cross-disciplinary collaboration
Cross-disciplinary

- Economic benefits of recreational fishing
  - Offshore tuna and other coastal species

- Three Honours projects co-supervised by Faculties of Science and Business & Law
  - One published article (*Economic Papers*)

- Research outcomes now incorporated into undergraduate units in both faculties
Work integrated learning

• Available through most Deakin courses for credit
  – Some paid placements, volunteer internships more common
  – Often lead to on-going employment

• Regional campuses can capitalise on strong local industry/government links to find placements/internships

• Assisting researchers (including HDR students) can be valid internships
  – Business confidence evaluation
  – Aquaculture nutrition and wastewater treatment
  – Energy and water sustainability for local tourist parks
Benefits of student research projects

• Enhance employability through research (problem solving) skills and links to potential employers in industry and government partners
• Improve “marketability” of courses
• Provide flexibility in course structures and timetabling
• Increase retention into Honours and higher degrees by research
• Provide students with memorable experiences from their degree
Higher degree students

- Important influences on research culture at smaller campuses
- Significant contributions to teaching
  - Universities rely on HDR students for sessional teaching
- Opportunities for undergraduate student experiences
  - Assisting in laboratories and on field trips
- Exemplify research career pathways for undergraduates
- HDR students increasingly difficult to get
  - Availability of HDR scholarships is main constraint
  - HDR fees recently introduced
- Industry support critical
Partnerships

• Regional campuses have advantage of strong local industry and government links
  – Often based on personal and community connections
  – Focused on issues and projects of local importance

• Industry partnerships critical
  – May require initial “pro-bono” research/advice to develop relationships and get student support in return
  – Even small amounts of funding and/or in-kind support can have significant outcomes for student-based research

• Local environmental consulting company
  – Strong partnership with university, including access to space and expertise
  – Provides WIL placements
  – Co-supervision of 3rd year and Honours projects
Summary

• Opportunities for undergraduate students to assist with research projects and do research projects for credit (3rd year, Honours)
  – Encourage retention into higher degrees by research
• Mutually beneficial partnerships with industry critical
  – Benefits to university not just large grants
  – Student research opportunities and work-integrated learning
• Cross-disciplinary student research can break down discipline and faculty silos
  – Inter-disciplinary research and teaching should be key for smaller campuses
• Strong research culture on campus, combined with undergraduate research projects, allows better integration of research methods and outcomes into teaching programs