

Teaching impact assessment in the context of uncertainty

Importance of teaching (E)IA

Growth in subjects and enrolments globally and nationally (6 of the 8 Queensland Unis offer IA/EIA subjects)



42% of job ads AUS wide for 'environmental scientist' list EA or EIA amongst the selection criteria

(Seek.com.au ads posted 2 weeks prior to 8.2.17; Does not include environmental monitoring)

Motivation of students

Some sources of uncertainty in teaching (E)IA

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To students, to employers & to society

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- Methods oriented subjects vs theory and process oriented subjects (Stelmack et al., 2005)
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Lecturers' uncertainty about

1. employers' values, needs and wants
2. graduates' early exposure/experience

Typical course content

(from Sanches and Morrison-Saunders, 2010; but also see Stelmack, Sinclair & Fitzpatrick 2005)

Topic	% occurrence		% occurrence
Legal and institutional		EIA issues	
Local/national legislation	80	Alternatives generation or comparison	67
EIA history	76	Handling uncertainties	44
International conventions	51	Cumulative impacts	56
EIA process and its components		Document quality/writing effective documents	58
Screening methods and criteria	76	Mitigation and compensation	62
Scoping methods and approaches	80	Types of impact assessment	
Report prep	73	EIA	91
Public involvement	82	SEA	73
Review of EIA documents	64	Sustainability assessment	33
Decision making	67	Risk analysis/Risk assessment	29
Monitoring	69	Life-cycle analysis/assessment	20
Follow-up	58	EMS	51
Tools and techniques		Scope of application	
Impact identification tools	76	Social impacts	64
Impact prediction tools	71	Cultural impacts	38
Criteria to assess impact significance	78	Economic impacts	44
Multicriteria analysis	53	Health impacts	40
Modeling	33	Ecological impacts	64
GIS	40	Physical impacts	53

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LTAS* for Environment and Sustainability (i)

Domain	Threshold Learning Outcome (TLO)
Transdisciplinary knowledge	<p>Demonstrate a broad and coherent knowledge of:</p> <ul style="list-style-type: none">• environments at various scales, interdependencies between human societies and environments, and sustainability• key environmental and sustainability challenges and their drivers• holistic systems thinking and complexity.
Systemic understanding	<p>Demonstrate an understanding of diverse approaches to environment and sustainability, including:</p> <ul style="list-style-type: none">• disciplinary and transdisciplinary approaches to identifying and conceptualising environmental and sustainability challenges• different frameworks for knowing• their own and others' values, knowledge, ethical positions and interests• the particular values, knowledge, ethical positions and interests of indigenous peoples globally.

*Learning & Teaching Academic Standards

LTAS for Environment and Sustainability (ii)

Domain	Threshold Learning Outcome (LTO)
skills for environment and sustainability	<p>Demonstrate well-developed cognitive, technical and communication skills through:</p> <ul style="list-style-type: none">• addressing research questions by identifying, synthesising and applying appropriate knowledge and evidence from diverse sources• thinking critically and creatively in designing and evaluating sustainable alternatives and envisioning sustainable futures• applying tools, methods, skills and theoretical knowledge for environment and sustainability practice• working both independently and collaboratively• communicating with diverse groups in various contexts using a range of written, oral and visual means• engaging with indigenous approaches to environmental and sustainability challenges.
Ethical practice	<p>Demonstrate an ethical professional, public and personal conduct by having capacity to:</p> <ul style="list-style-type: none">• reflect on and direct their own learning and practice in the context of environment and sustainability• participate constructively in decision-making consistent with principles of sustainable development.

How to cope with these uncertainties?

