

Evaluation of curriculum innovation to enhance employability attributes for environmental science graduates



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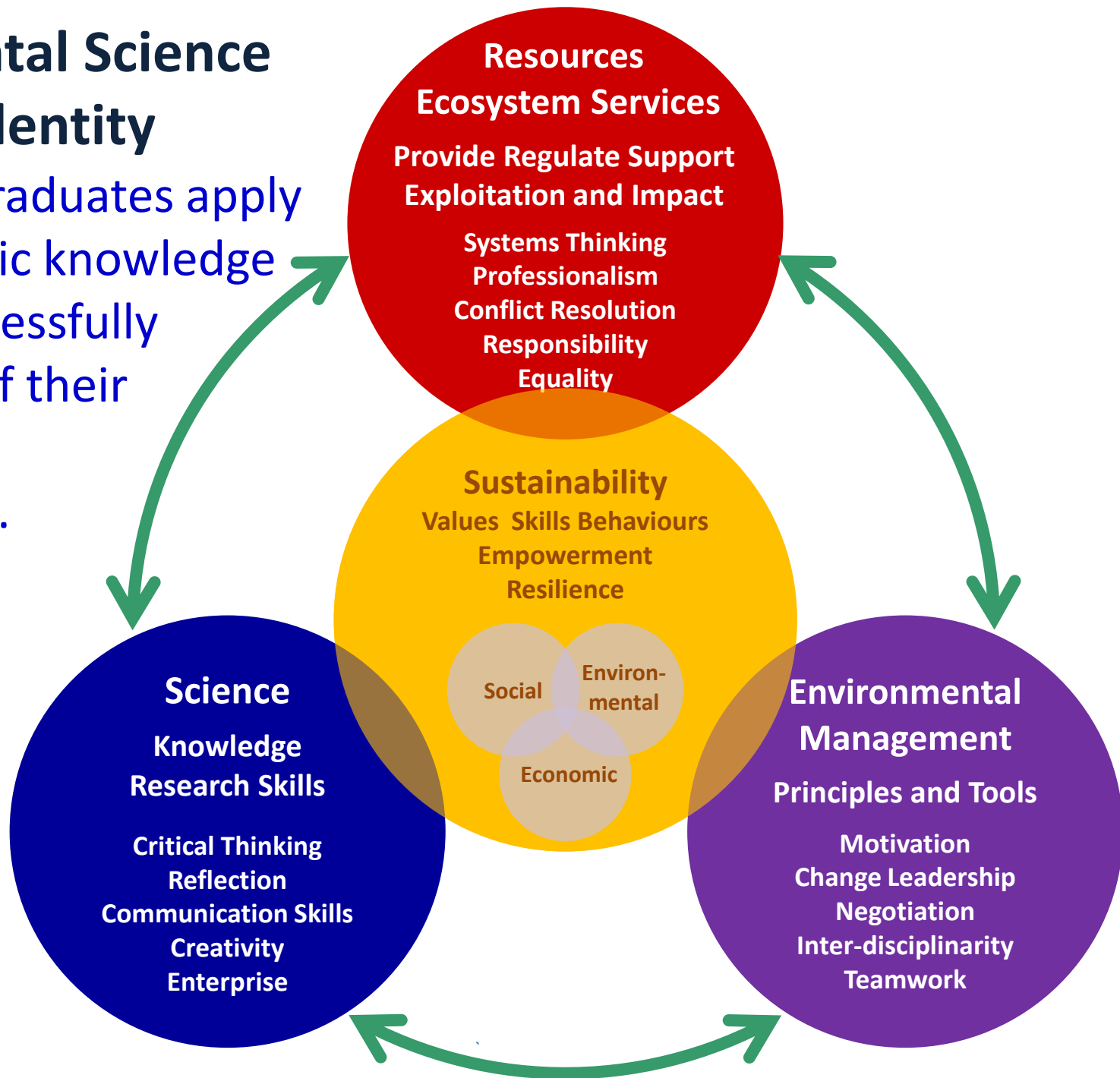


School of Geography, Earth and
Environmental Sciences
SoGEES

Pedagogic Research Institute
and Observatory
PedRIO

Environmental Science Discipline Identity

Employable graduates apply
subject-specific knowledge
and skills successfully
through use of their
life skills*
and resilience.



*Most wanted life skills derived from, among others, [NERC](#), [National Network of Business and Industry Skills Report](#), [Plymouth Compass](#) and current job ads in the environmental sector.

PROJECT Research-led curriculum innovation to enhance core employability attributes for Environmental Science graduates

Aims

To enhance employability and cultivate professionalism, resilience and global citizenship through research-led curriculum innovation.

Objectives

- To evaluate the impact of leadership training on graduate skills.
- To identify training gaps within the curriculum.
- To develop, based on evidence, a coordinated, effective and curriculum-embedded employability skills training programme.

Methods

- Student self-evaluation before and after leadership training
- Employability questionnaires
- Development of framework for resilience training

‘The ETE Leadership award is a challenging course designed to develop and enhance **self-confidence, project management skills and leadership styles** in preparation for future work and study. ’

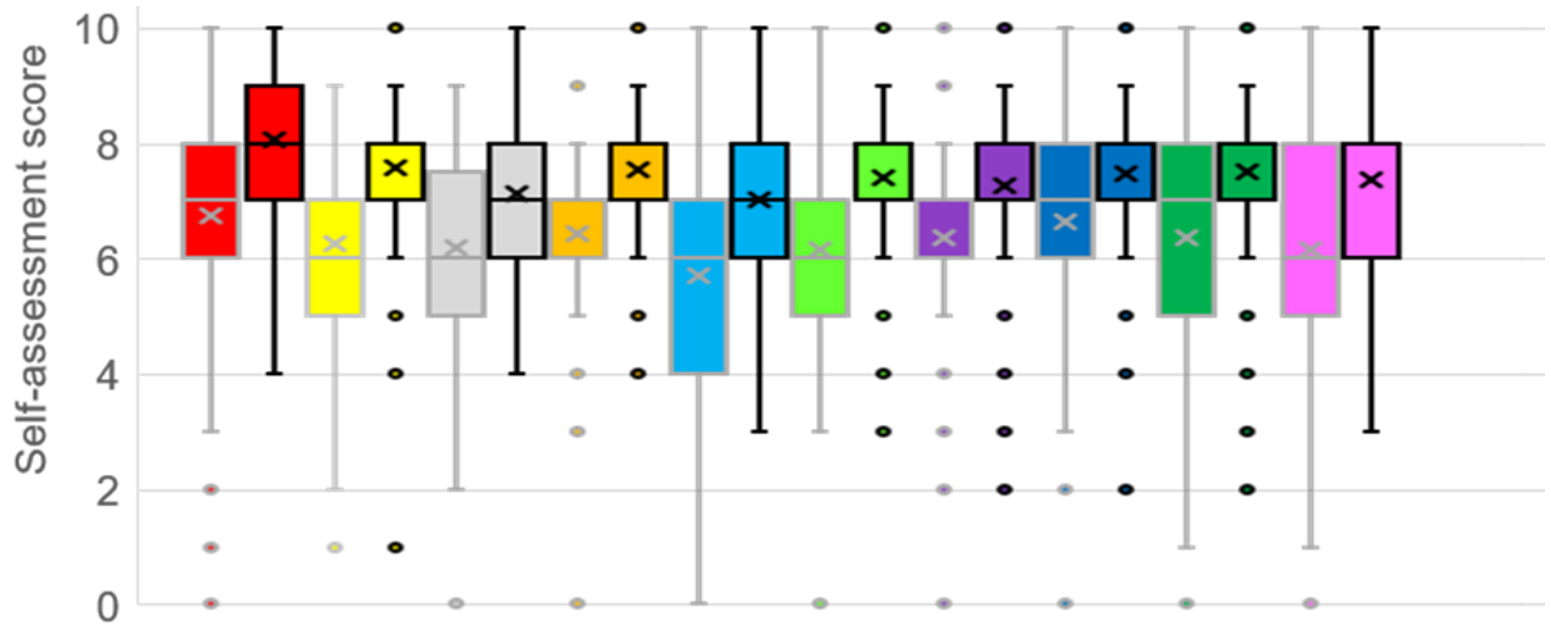
Programme:

- Four x 2 h workshops on topics including:
 - understanding self and others, motivation
 - communication, behaviour and perception
 - teamwork, leadership and leadership styles
 - project planning and risk assessment
- Two days camping on Dartmoor:
 - practicing leadership in challenging situations
- One 2 h workshop:
 - relating the learned to academic life and career



Student self-assessment: Top 10 employability skills

years 2015, 2016, 2017; n = 136



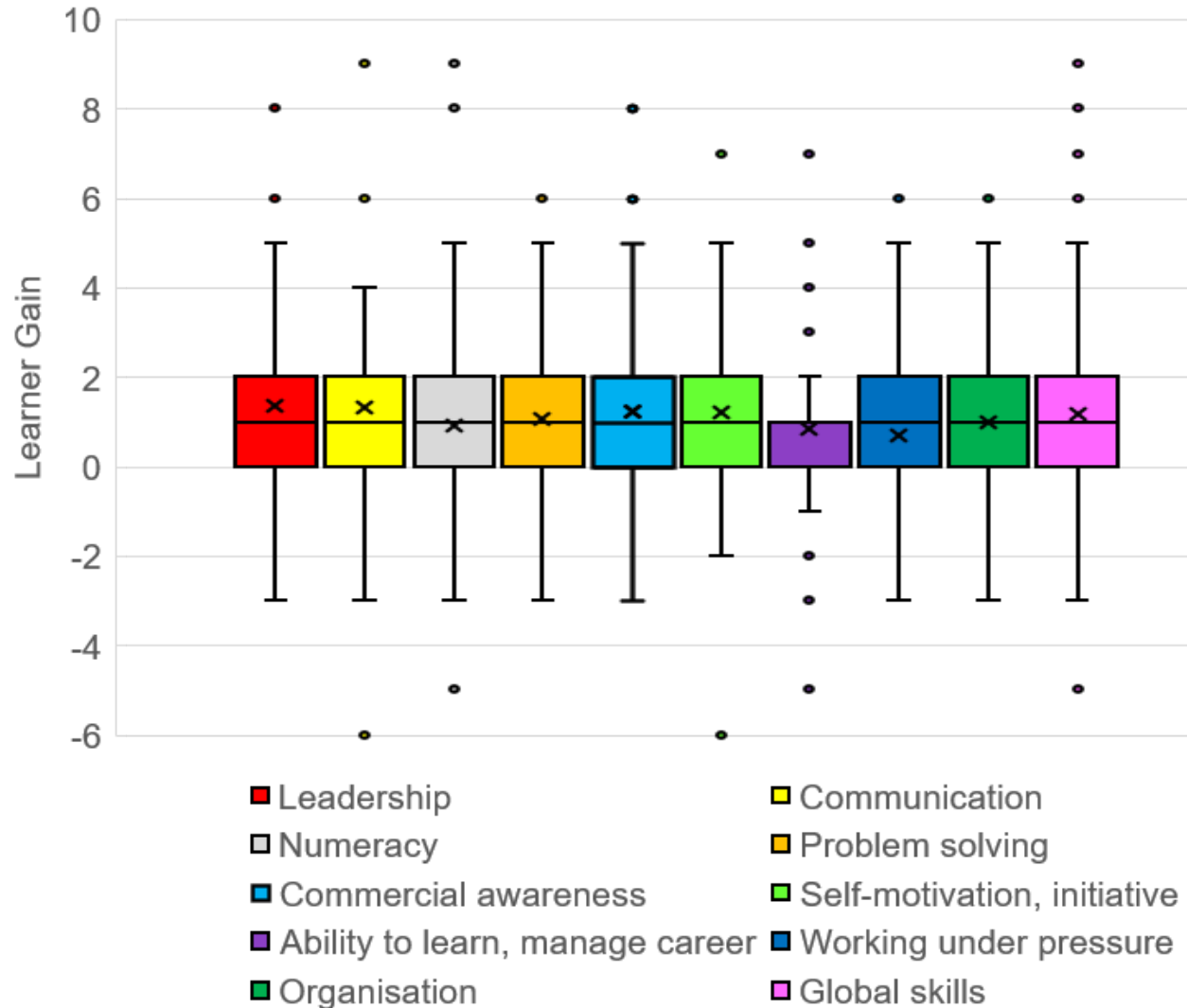
- | | | | |
|--------|----------------------------|--------|---------------------------------------|
| Before | After Leadership | Before | After Self-motivation, initiative |
| Before | After Communication | Before | After Ability to learn, manage career |
| Before | After Numeracy | Before | After Working under pressure |
| Before | After Problem solving | Before | After Organisation |
| Before | After Commercial awareness | Before | After Global skills |

All data: 2015, 2016, 2017; n=136

Mood Median Test: median are significantly different for all skills (95%)

Student self-assessment: Top 10 employability skills

Learner gain = after LT score – before LT score



All data: 2015, 2016, 2017; n=136

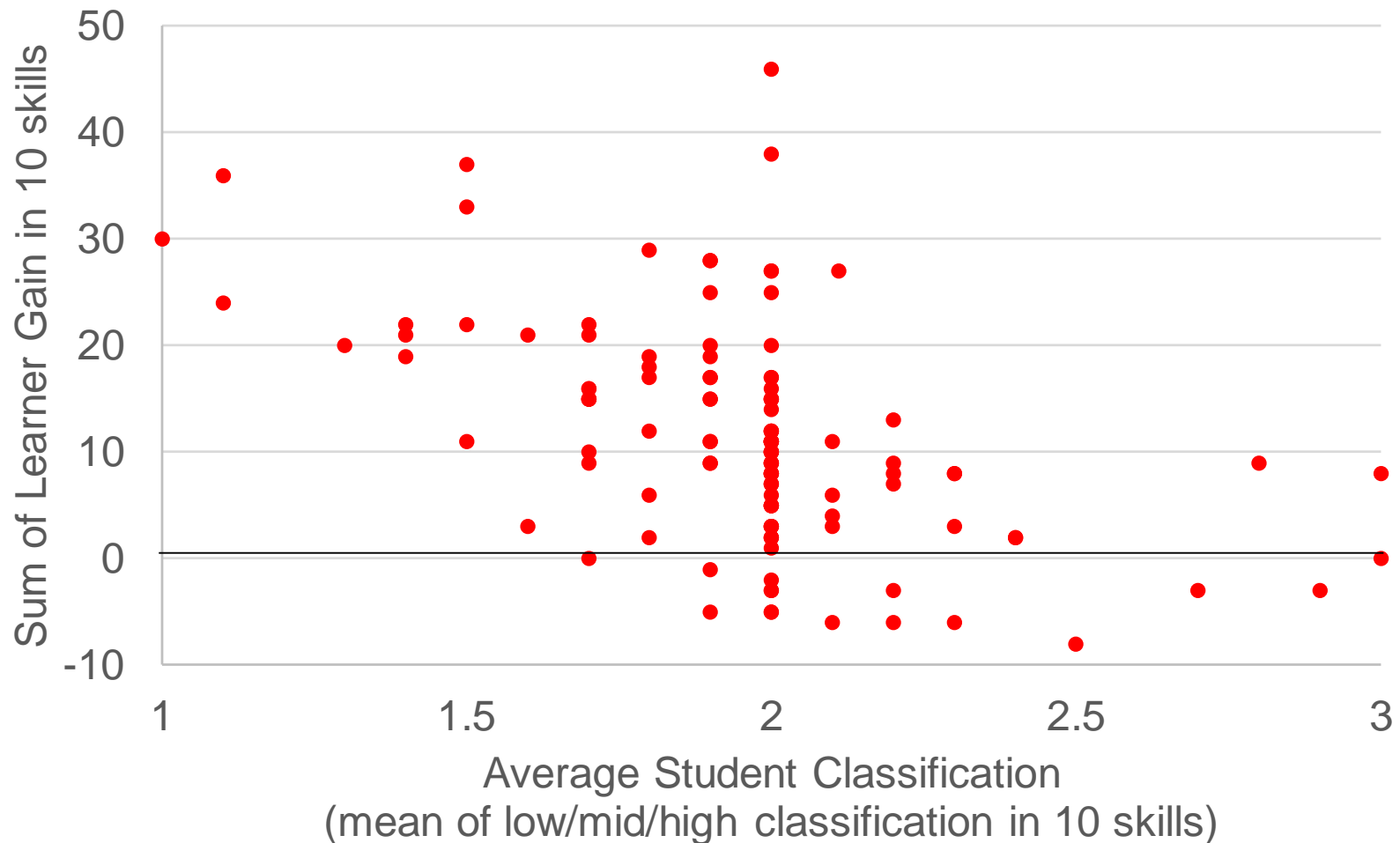
Learner gain = after LT score – before LT score

Skill sore re-classification:

Low scorers (1) = before LT 1 – 3 (skills n=139 → students n=11)

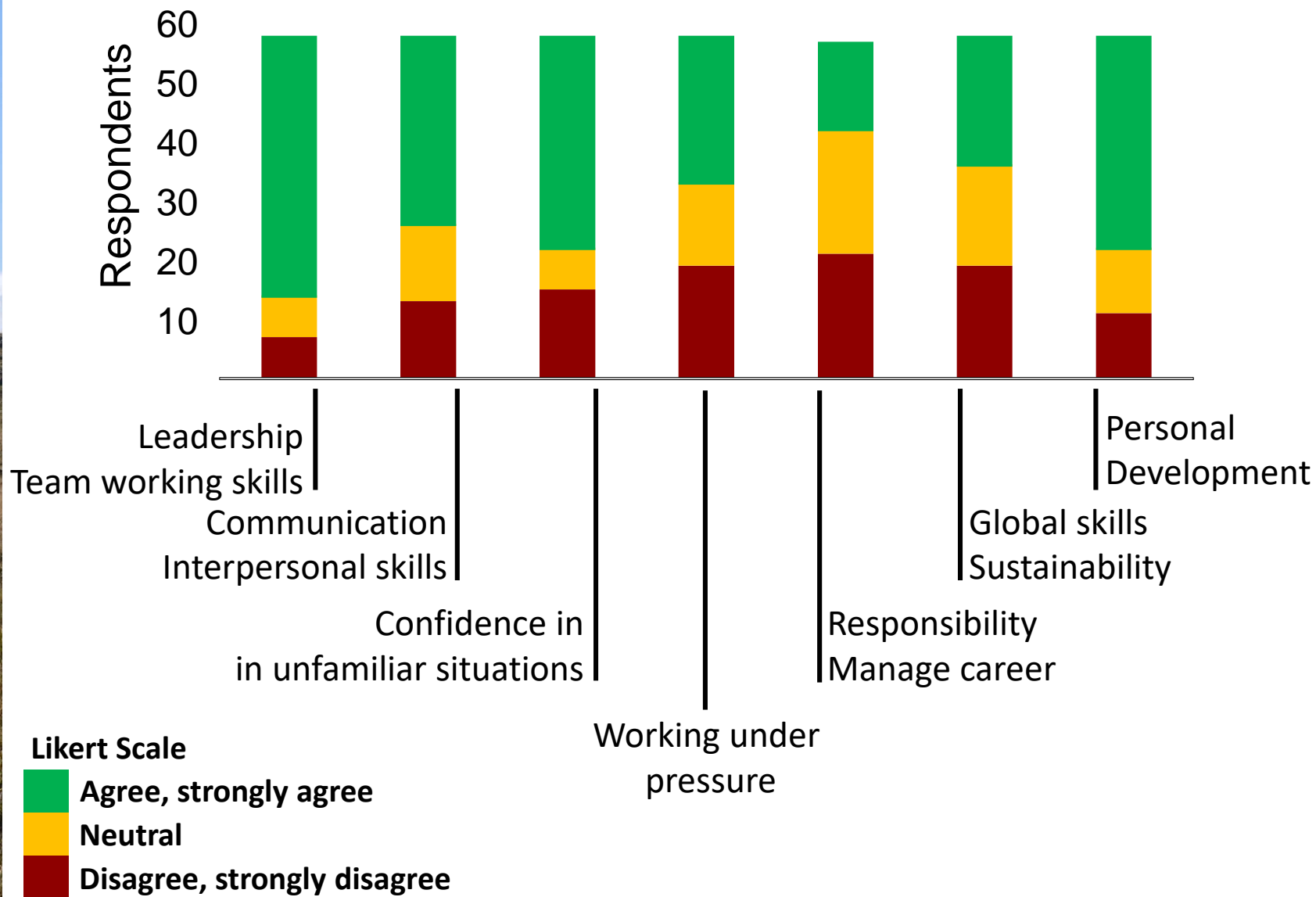
Mid scorers (2) = before LT 4 – 6 (skills n=1243 → students n=134)

High scorers (3) = before LT 7 – 9 (skills n=129 → students n=8)



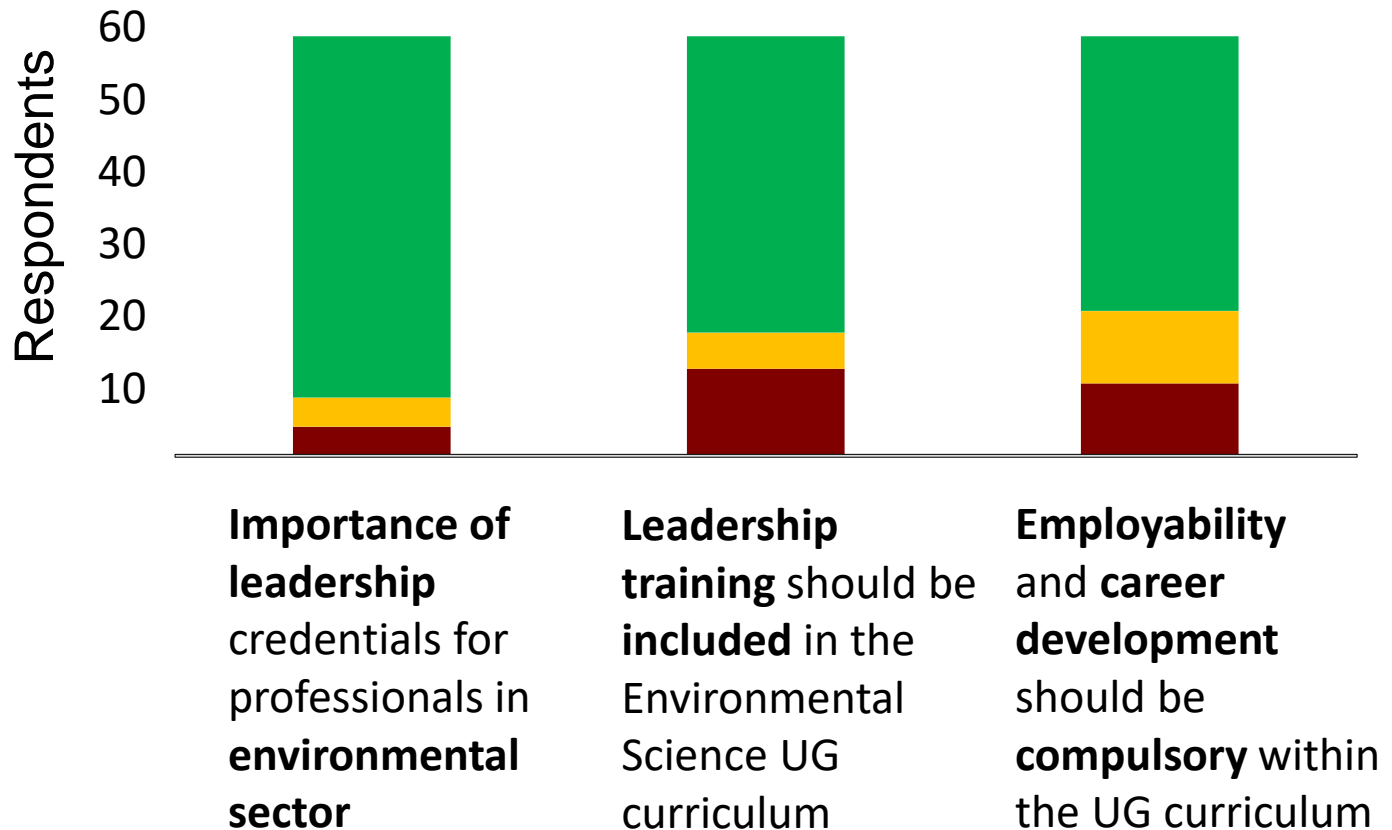
Employability Questionnaire 2017:

Value of training 8 – 20 months after event



Employability Questionnaire 2017:

Importance of personal development



Likert Scale

- Agree, strongly agree
- Neutral
- Disagree, strongly disagree

Employability Questionnaire 2017:

As a result of the leadership training, have you been motivated to seek or take up opportunities that you would not otherwise have considered?

Opportunity	No. of students to mention this
Volunteering and placements	8
Communication through blogging and other online platforms	7
‘Set up a website in partnership with other students that touches on environmental issues, and a range of other subjects.’	2
Applying to speak at conferences and different related talks	1
‘I am making another film as I really enjoyed expressing science in a creative way’	1

Employability Questionnaire 2017

Career readiness statements	% agree or strongly agree
I am aware of weaknesses that I need to work on to improve my career prospects	85%
In order to choose a career pathway, I need to know myself	76%
I am confident about presenting my strengths and experience in my curriculum vitae	69%
Several career choices appeal to me, and I'm not sure how to decide between them	65%
I am concerned about committing to a particular career choice	56%
I don't know enough about what people do in various occupations	53%
I don't know enough about career opportunities	44%
I feel confident about securing a graduate position or go on to further study after I graduate	42%
I feel confident when thinking about career-related decisions	20%



Self-awareness and resilience training for Stage 1 ENVS students to manage stress and enhance performance

Developed with Hart & Mind Consultancy Ltd.

1) Stress

1. Understanding the physiology of stress
2. Defining self-induced stress, causes and reactions

2) Stress relief tools

3. Opportunities to deal with stress
4. Tools to deal with stress
5. Managing emotional state to enhance performance

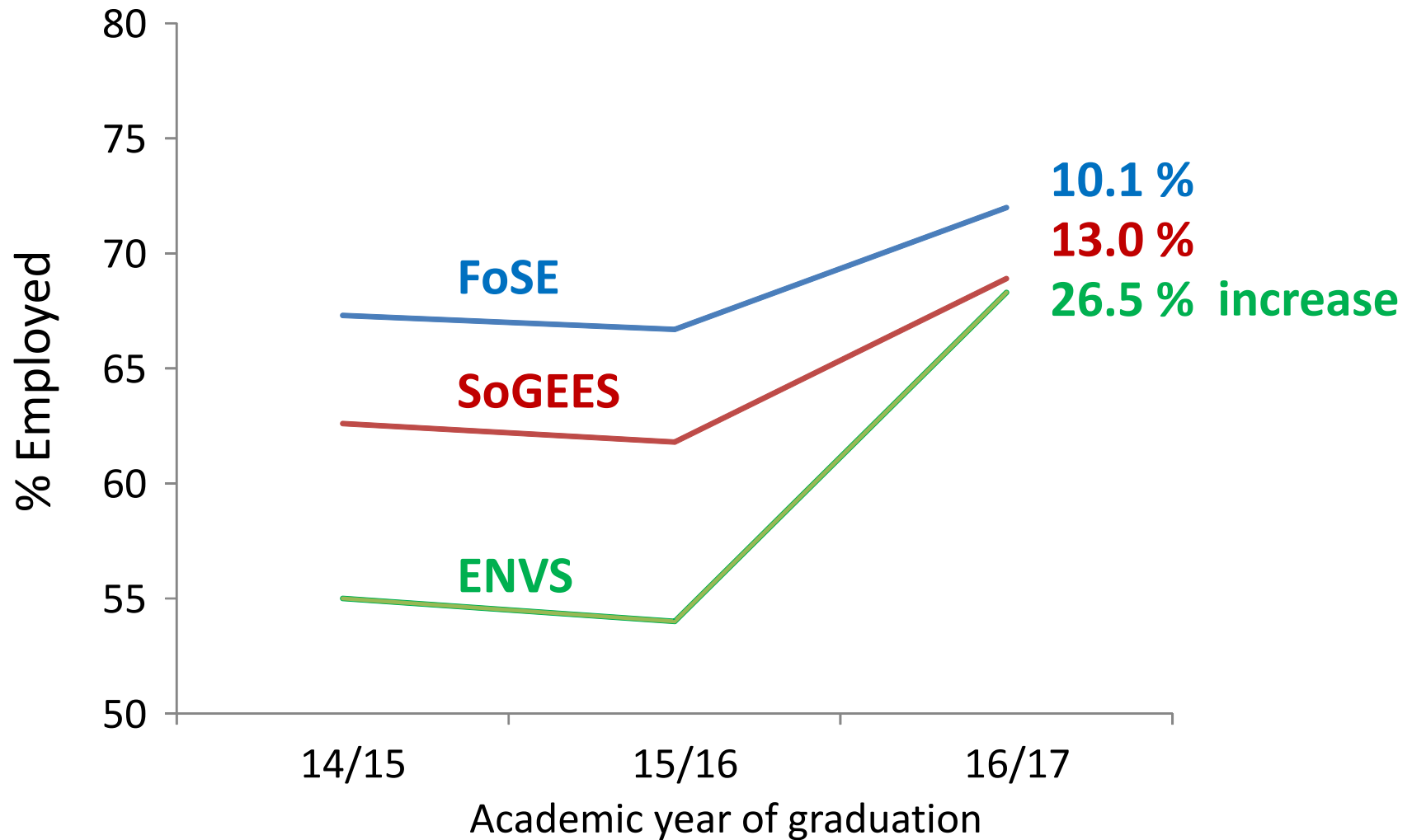
3) Anxiety

6. Understanding the mechanics of anxiety
7. Managing and dealing with anxiety

4) Anxiety relief tools

8. Impact of movement and posture on mental and physical state
9. Reframing thoughts to alleviate worries and anxiety

DLHE: % employed 6 months after graduation



Summary

- Leadership training has clear positive outcomes for top 10 employability skills and building confidence
- Students who most needed to enhance their employability skills gained most from the training
- Leadership training within the curriculum is valued highly
- DLHE data show a 26.5% improvement in the first cohort that graduated with the Leadership Award
- We have identified training gaps related to resilience and developed a programme to enhance performance through managing stress and anxiety

Student reflection:

"As nervous as I was for the expedition it certainly paid off, and the ETE workshops have worked miracles on my confidence.

Building confidence is a slow process that I am working on and I am starting to see improvements in myself.

From learning how to manage stress and anxiety to leading effectively, I have gained and consolidated new skills that I will implement in future careers, and ultimately help me thrive as an individual."

