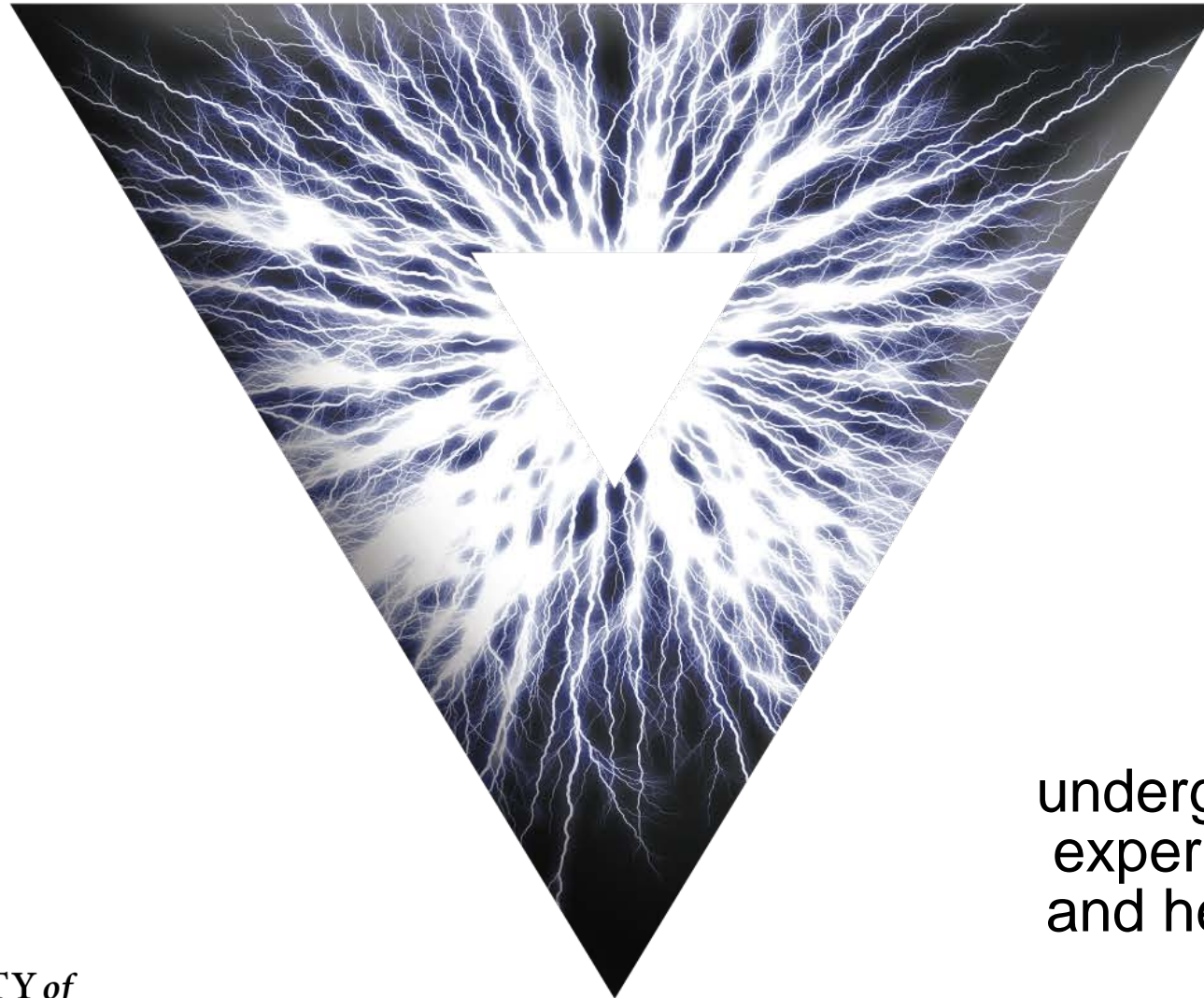


FACULTY OF HEALTH



Evaluating
undergraduate research
experiences in science
and health professional
courses

TREASURE

Teaching Research: Evaluation and Assessment Strategies for Undergraduate Research Experiences

- **OLT-funded project**
(Susan Howitt, Anna Wilson, Denise Higgins, ANU)
- **Used reflective practice to examine student learning processes in UREs**
 - Help students reflect on the nature and processes of research
 - Help students reflect on their learning during UREs
 - Provide an opportunity for supervisors to better understand what their students are thinking / learning

The Approach

Helping students learn from URES, by:

- **Expanding the definition of learning beyond the focus on results**
 - Learning about the process of research
 - Developing generic skills
- **Making learning visible by asking students to reflect on their research experience**
 - Using a bank of questions that prompt students to reflect on their research experience- What are they doing? Why? What would they do differently? what are they learning?
 - Written responses in a 'learning logbook' / reflective journal

What did TREASURE tell us?

- Reflective journals show the development of more sophisticated understanding of research
- Demonstrates different of levels of student understanding of research process



What about UREs in professional courses?

- Do students in professional courses benefit from UREs?
- Are the expectations / benefits similar to non-professional courses?



Finding TREASURE in professional courses

- Identify student expectations that may act as contextual barriers to benefitting from undergraduate research experiences
- Make learning in undergraduate research experiences visible to students and their supervisors
- Develop whole of curriculum scaffolding to better prepare and support students for undergraduate research experiences



Study cohort – Science students

- Science / Medical Research students (44)
- Final year (3 year course)
- ‘Capstone’ unit: ‘Research Project in Health & Disease’
- Apprenticeship-style research project
- Groups of 1-3 students



Study cohort – paramedic students

- B.Paramedic Practice Students (119)
- Final year (2 year course) / Fast-track
- Final semester / coinciding with professional placements
- The unit: 'Professional development in paramedic practice'
- Structured systematic review
- Groups of 4-7 students

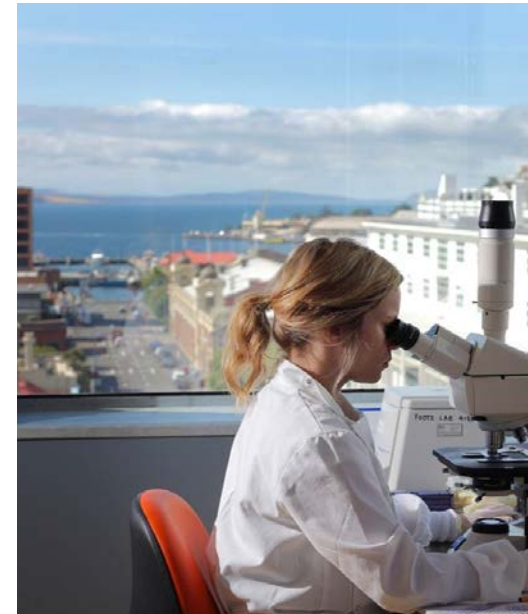


Most common expectation of the research experience

Medical Research / Science students

- Understanding research*
- Practical application of prior learning / develop skills*
- Flexibility / independence
- Engagement with future research

*linked to unit ILO



Most common expectations of the research experience

Paramedicine students

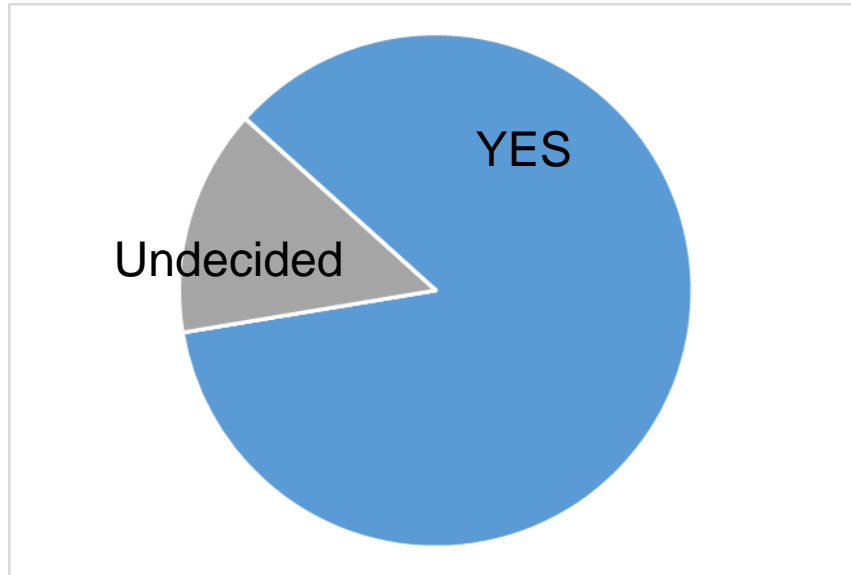
- Understanding research*
- Evaluating literature / develop research skills*
- Team work and communication*
- Understand how research applies to profession*

*linked to unit ILO

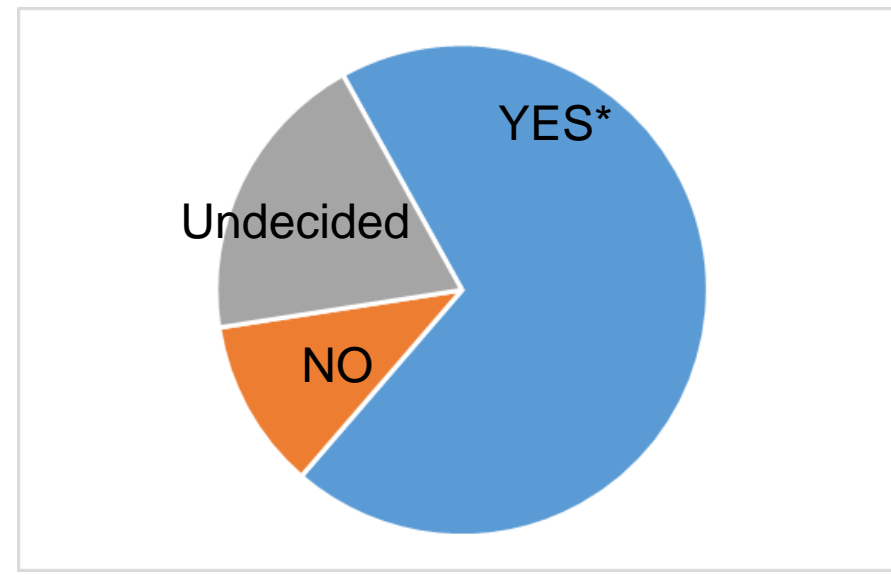


Experience meets expectations?

Science / medical research



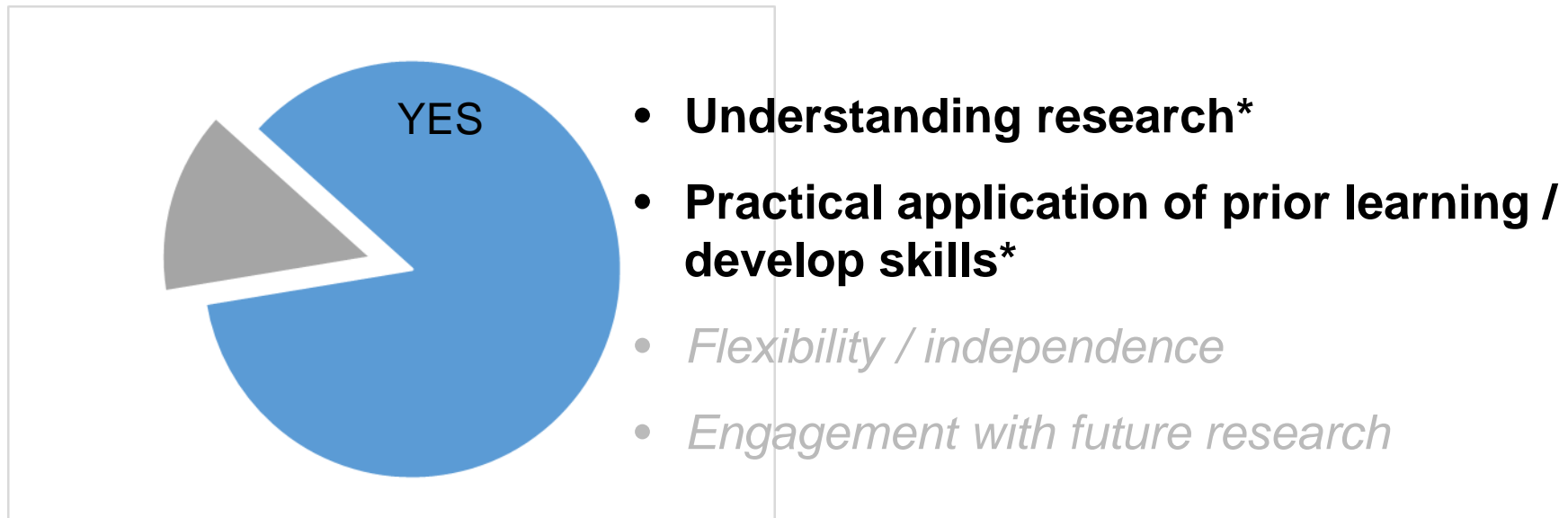
Paramedicine



*almost all relating to positive expectations

Experience meets expectations?

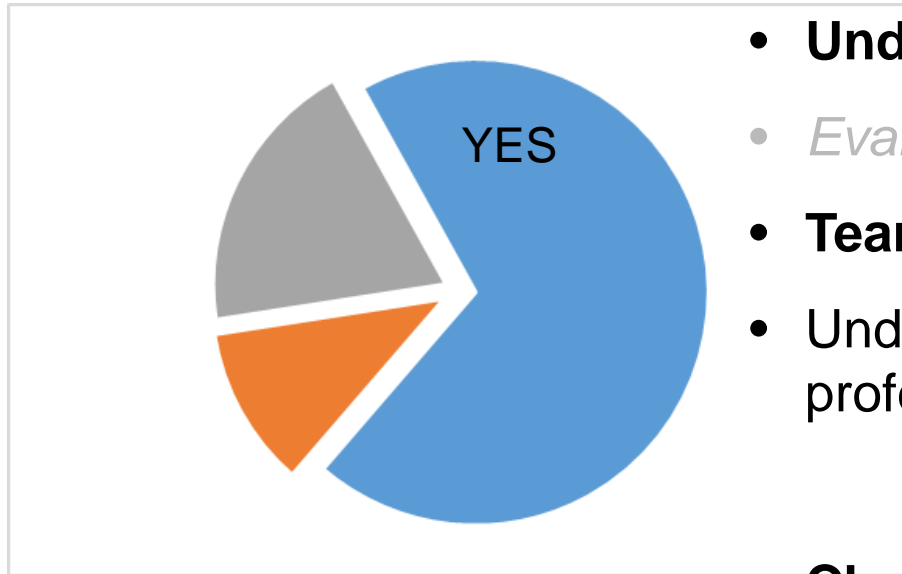
Science / Medical research



*linked to unit ILO

Experience meets expectations?

Paramedicine students



- **Understanding research***
- *Evaluating literature / develop research skills**
- **Team work and communication***
- Understand how research applies to profession*

- **Challenging**

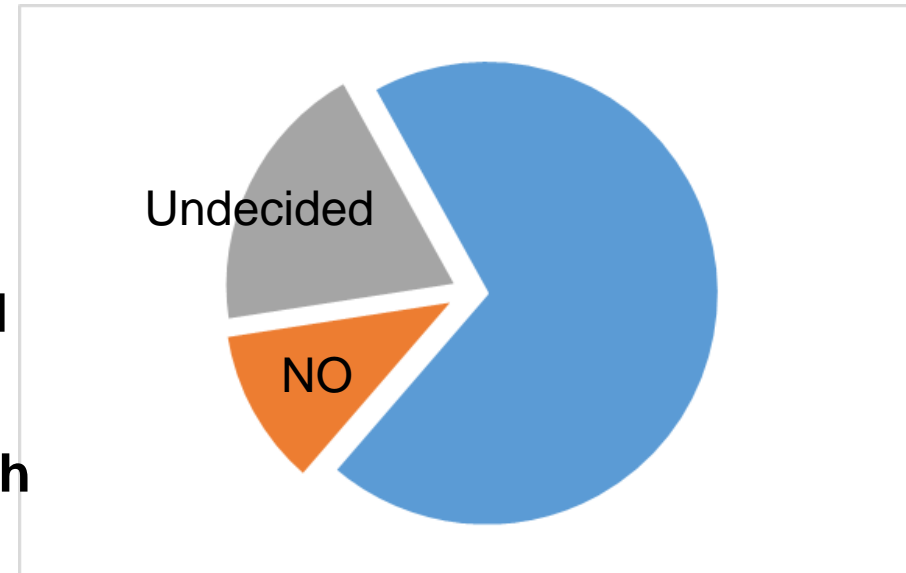


*linked to unit ILO

Experience meets expectations?

Paramedicine students

- *Understanding research**
- *Evaluating literature / develop research skills**
- **(Difficulties of) Team work and communication***
- **(Not) Understand how research applies to profession***
- **Challenging**
- No research findings



*linked to unit ILO



What have you learnt?

Science / Medical research

Understanding research*

- **The research process**
- Managing a project

Practical application of prior learning / develop skills*

- **Topic specific knowledge**
- Research techniques

*linked to ILO

What have you learnt?

Paramedicine

Understanding research*

- **How to critically evaluate literature**
- How to find information
- Writing skills

Team work and communication*

- **How to manage group work**

Understand how research applies to profession

- **Importance of research to profession**
- Discipline specific knowledge

*linked to ILO

What skills have you developed?

Science / Medical research

Generic / transferable

- critical thinking
- **organisation, time management**
- communication, problem solving
- team work

Discipline specific

- **Laboratory techniques**
- Research techniques

What skills have you developed?

Science / Medical research

Paramedicine

Generic / transferable

- critical thinking
- **organisation, time management**
- communication, problem solving
- team work

- critical thinking
- time management
- **communication**
- **team work**

Discipline specific

- **Laboratory techniques**
- Research techniques

- writing skills
- **evaluating literature**
- finding information

What TREASURE did we find?

- reflections of paramedic students pre- and post-URE were largely positive, suggesting a lack of contextual barriers.
- a common expectation of professional and non-professional students is to gain an understanding of the process of research
- Students recognise the development of generic as well as discipline-specific skills
- Expectations of UREs and perceptions of skills gained may be coloured by ILOs and the context of the URE

University of Tasmania:

Adele Holloway

Anne-Marie Williams

Emma Cazaly

Ros Malley

Australian National University:

Susan Howitt

Denise Higgins

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