

Degrees of Uncertainty? Exploring student decision- making during the journey of taking an undergraduate Physics degree

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SUPA Annual Gathering, 20/5/26

**Figure TBC,
(ideas please)**

Qualifications on entry (e.g. Higher or Advanced Higher)

Direct entry into second-year

Repeating an academic year

Changing degree programme or discipline

Taking a break from studies

Leaving degree programme early



Mathematics and Physics (BSc)
Joanne Gallagher, Easy Weeknight Spaghetti,
<https://www.inspiredtaste.net/38940/spaghetti-with-meat-sauce-recipe/>
Acoustics and Music Technology (BSc)

Factors Impacting Student Experience



University Application Process (McGrath and Rogers, 2021)

Misalignment of Expectations (Mearman and Payne, 2023)

Financial Pressures (Thompson et al., 2021)

Social Networks (Worsley et al., 2021)

Connections with Members of Staff (Cage et al., 2021)

Specific Student Groups (Tett et al., 2025)

Physics-Specific Factors

Prior Laboratory Experiences
(Sneddon et al., 2009; Thompson, 2012)

Mathematics Qualifications
(Bowyer and Darlington, 2016; Morgan, 2011)

Impact on specific groups e.g. female Physics students
(Harrington et al., 2022; Hatch, 2025)

More discipline-specific research needed, notably in STEM
(di Martino et al., 2021; Gale and Parker, 2014)



‘Degrees of Uncertainty?’ Project

Understand ‘high-level decisions’ students make: decisions made during an undergraduate degree that impact the structural pathway a taken e.g. choosing to change degree programme

Speak to both local and national contexts

Help inform decision-makers and future policy

RQ1 (Staff Perceptions): What high-level decisions, and associated motivating factors, do staff perceive students to make during Physics degree pathways?

RQ2 (Student Experiences): What kind of high-level decisions do students recognise they make throughout undergraduate Physics degree pathways, and what do they also cite as motivating factors for these decisions?

RQ3 (Staff/Student Comparison): Are student and staff perspectives on what high-level decisions are made by undergraduates during the process of taking an undergraduate Physics degree aligned?

RQ4 (Demographic Factors): Do demographic factors, such as gender or the way a student is funded to study, have an impact on the high-level decisions made by students during this process?

Theoretical Background

Previous work on
transition into University
(Stafford, 2024)

Experience is 'rhizomatic'
(Gale and Parker, 2014):

- Viewed as a complex system of interconnecting factors and impact of factors should be considered holistically

Employing 'intersectionality'
(Hunting, 2014):

- Different social identities overlapping and interacting in ways that can empower or discriminate against an individual

Semi-structured interviews
(DeWitt et al., 2019;
Shields, 2023)



Okan Ekinci, Vecteezy.com



University of Edinburgh, <https://www.ed.ac.uk/events/graduations>

Initial decisions around
University and Physics

Exploration of decisions
during degree

Affective/emotive side
and expectations

Plans beyond graduation

Data Collection

Members of staff at the University of Edinburgh
(October/November 2025)

Final-year undergraduate Physics students at the University
of Edinburgh (February – April 2026 and 2027)

Final-year undergraduate Physics students at other
departments in Scotland and England (January – April 2027)



Marco Livosi, Great Britain map on white background,
<https://www.vecteezy.com/vector-art/8338297-great-britain-map-illustrated-on-white-background>

Staff Interviews

Ethical approval from the SOPA
Ethics and Integrity Officer

Interviews length of 20 to 40
minutes

Audio recording on a
Dictaphone

12 staff members participated between October and
November 2026

7 identified their gender as male; 5 as female

6 were academics with teaching & research focus; 3
were professional services; 2 were academics with
teaching focus

7 had 15+ years of experience; 2 had 9-15 years; 3
had 3-9 years

Analysis and Preliminary Results

Reflexive Thematic Analysis (Braun and Clarke, 2022)

Certain qualifications seen as more beneficial

Teachers and family influential in choices

Misconceptions around Physics research

Strong personal engagement in Physics

Staff uncertainty around student goals

Student Interviews

Detailed demographic
information

UoE interviews between
February and April 2026

Interviews 10 to 30 minutes

14 student participants, so
far...

Future Plans

Further Edinburgh recruitment

Taking the student interviews on the road

Data analysis very much underway

Various publications as well as a final report

Still potential for other collaborators, do get in contact!

Acknowledgements

Thank you to any
participants who
have given their time

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members who have
supported this work

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Thank you
for listening!

Are there any
questions?



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