



THE UNIVERSITY *of* EDINBURGH
School of Biological Sciences

STUDENT VOICE IN LEARNING AND TEACHING: HONOURS STUDENTS SUPPORTING CURRICULUM DEVELOPMENT

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Co-creation in the School of Biological science (SBS)

- In SBS, we really value the student voice in developing and refining our curricula.
 - Curriculum change 4 years ago.
- Record number of students took up educational focused honours projects this year.
 - Recognise the value of researching science education and social science areas.

SBS – Educational Projects

- Eight projects on a variety of science education, and social *issues affecting student life*
 1. *SBS portfolio engagement (Mabel Wilson)*
 2. *Gen AI in Undergraduate Sciences' Students (William Nicolson)*
 3. *Students in term-time employment (Jiatong Du)*
 4. *ADHD student experiences of the new curriculum (Liuyi Lai)*
 5. *Science literacy in social media (Jingyan Li)*
 6. *Credibility in science communication (Abby Brooke)*
 7. *Electronic lab books (Anon)*
 8. *Skills development and employability support (Alen Subasic)*

Student Data Collection

Surveys – large sample
of the student
population (quantitative
and qualitative)

Focus groups /
Interviews – small
sample of student views
(qualitative)

SBS Reflective Portfolio (Mabel Wilson)

- Research question investigated how students engage with the SBS Reflective Portfolio. What Factors Hinder or Support Their Engagement, and How Can Engagement Be Better Supported?
- Surveyed 276 students and 11 interviews (Biology courses years 1,2&4)



There Is currently a Gap Between Recognised Benefits of the Portfolio and Engagement in the SBS Portfolio.

The portfolio is designed to:

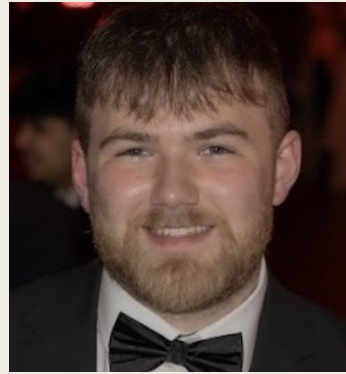
- Support the development of transferable skills.
- Make student growth visible.

HOWEVER

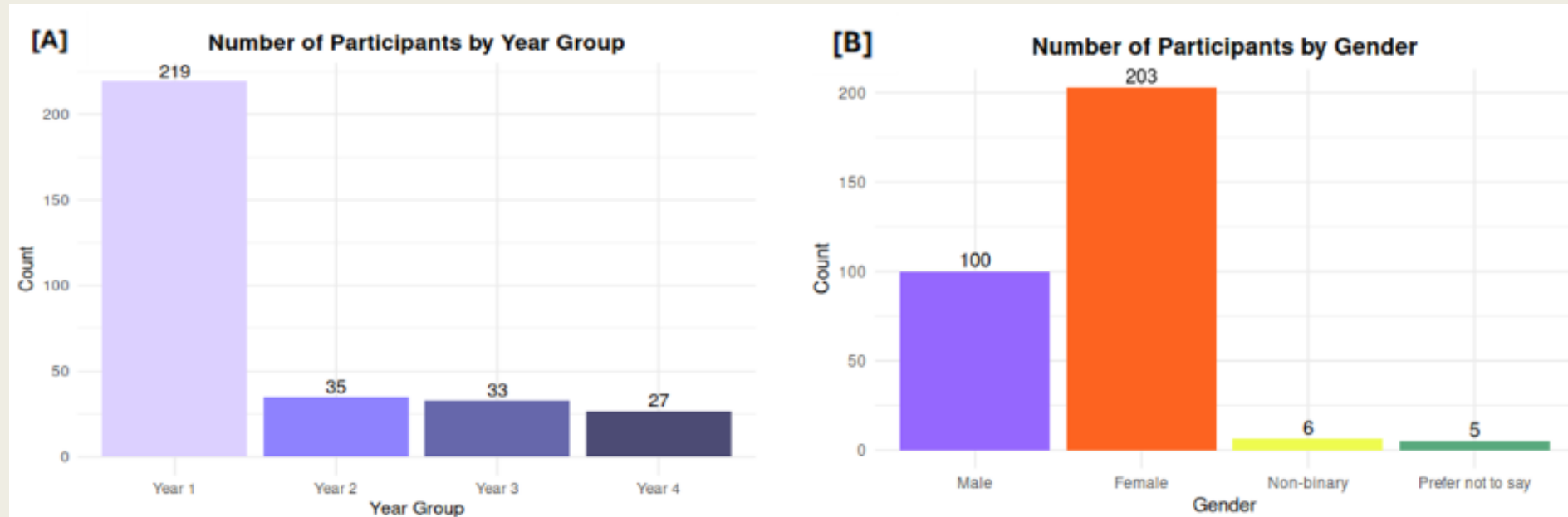
Benefits can only be realised with sustained engagement.

- Engagement is low in practice.
- Portfolio seen as additional task.

Gen AI in Undergraduate Sciences' Students (*William Nicholson*)



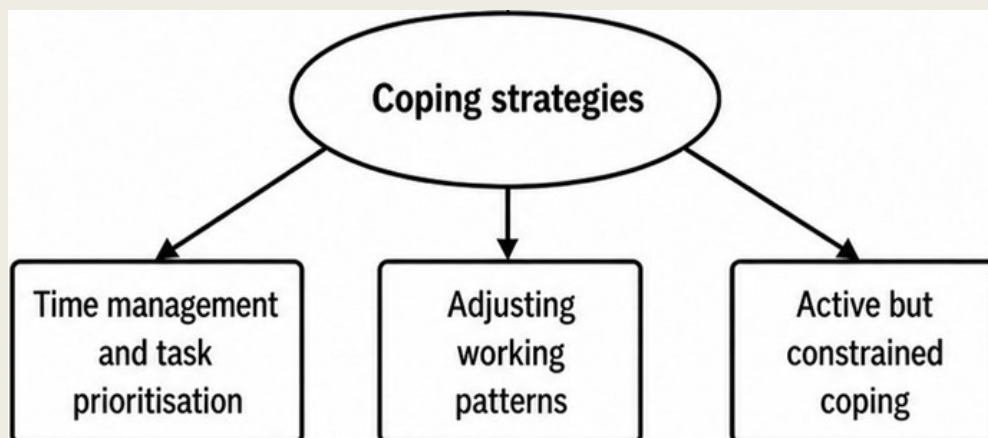
- Survey on 314 students and 4 interviews (Biology courses years 1-4)
- Research question relates to student knowledge, usage and concerns of Gen AI



- https://media.ed.ac.uk/media/William+Nicolson+Conference+Record/1_ntpbhj32

Students in term-time employment – Jiatong Du

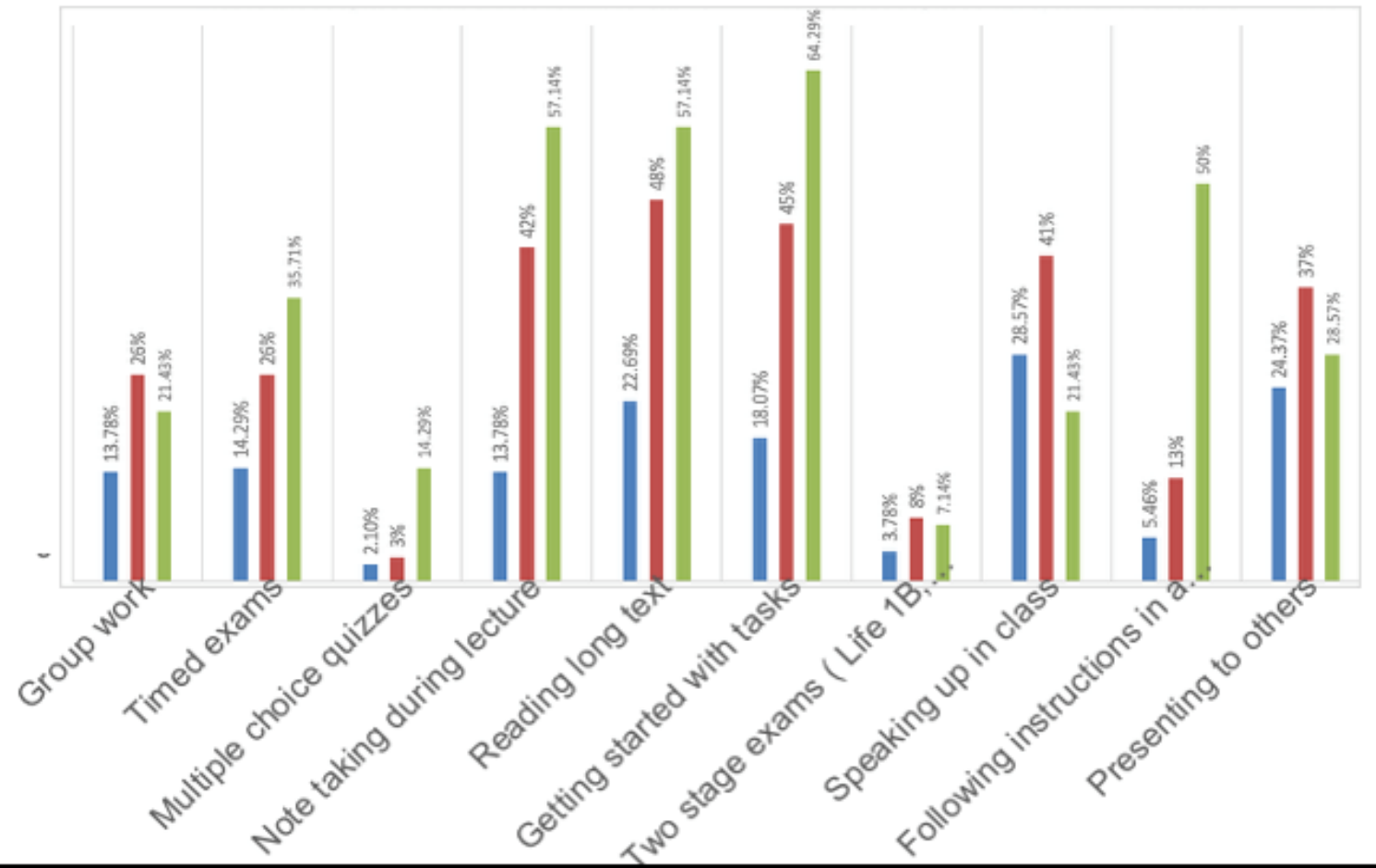
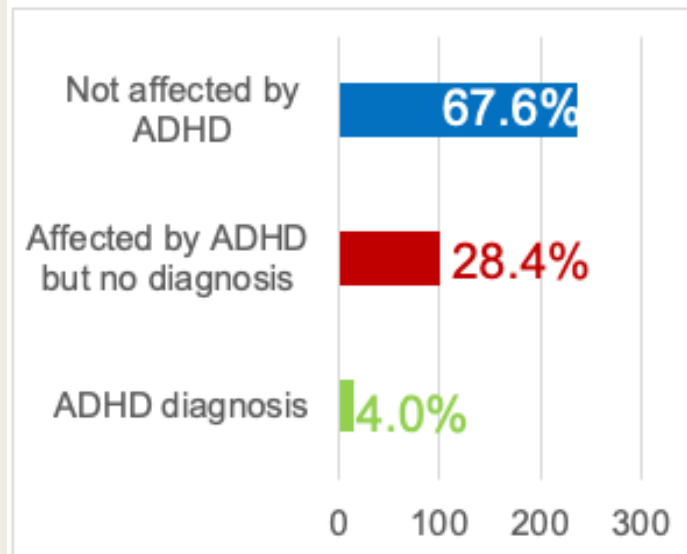
- Survey on 371 students and 7 interviews (Biology courses years 1-4)
- Findings:
 - 22.6% students currently working (68% UK-wide) - Median 8h/Week
 - Of those working: 86% work for financial necessity
 - *Stress Level of working students higher (Median 7/10 compared to 5/10)*
 - Academic satisfaction similar (Median 4/5)
 - Reduced capacity to engage with study (less energy)



More flexible sessions
More condensed timetables

Investigating ADHD student experiences of the new curriculum (Liuyi Lai)

- Survey on 352 students and 2 interviews (Biology courses years 1-4)
- Asked about ADHD diagnosis, symptoms and learning disadvantage (revised curriculum)



Reflections

■ What was good

- Co-creation is the best way to change the curriculum and understand our students.
- Students as researchers capture the authentic student voice
- Students leaving a legacy on the SBS courses (CV building)
- Experiential learning and development of transferable skills – full ownership of project

■ What was challenging

- Steep learning curve for science students (understanding pedagogical & qualitative research rather than lab-based research)
- Making students aware of their own bias affecting research outcomes

Acknowledgements



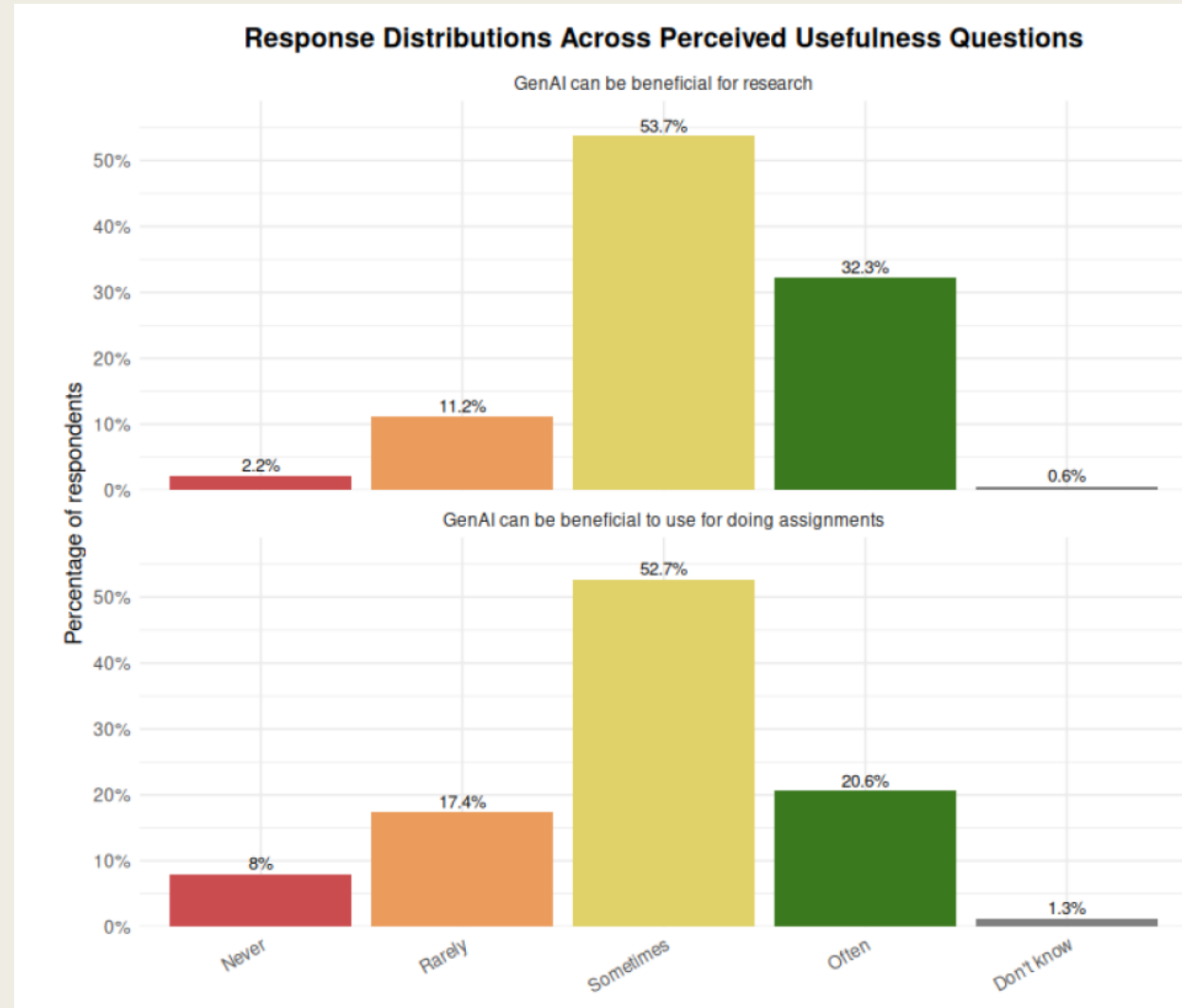
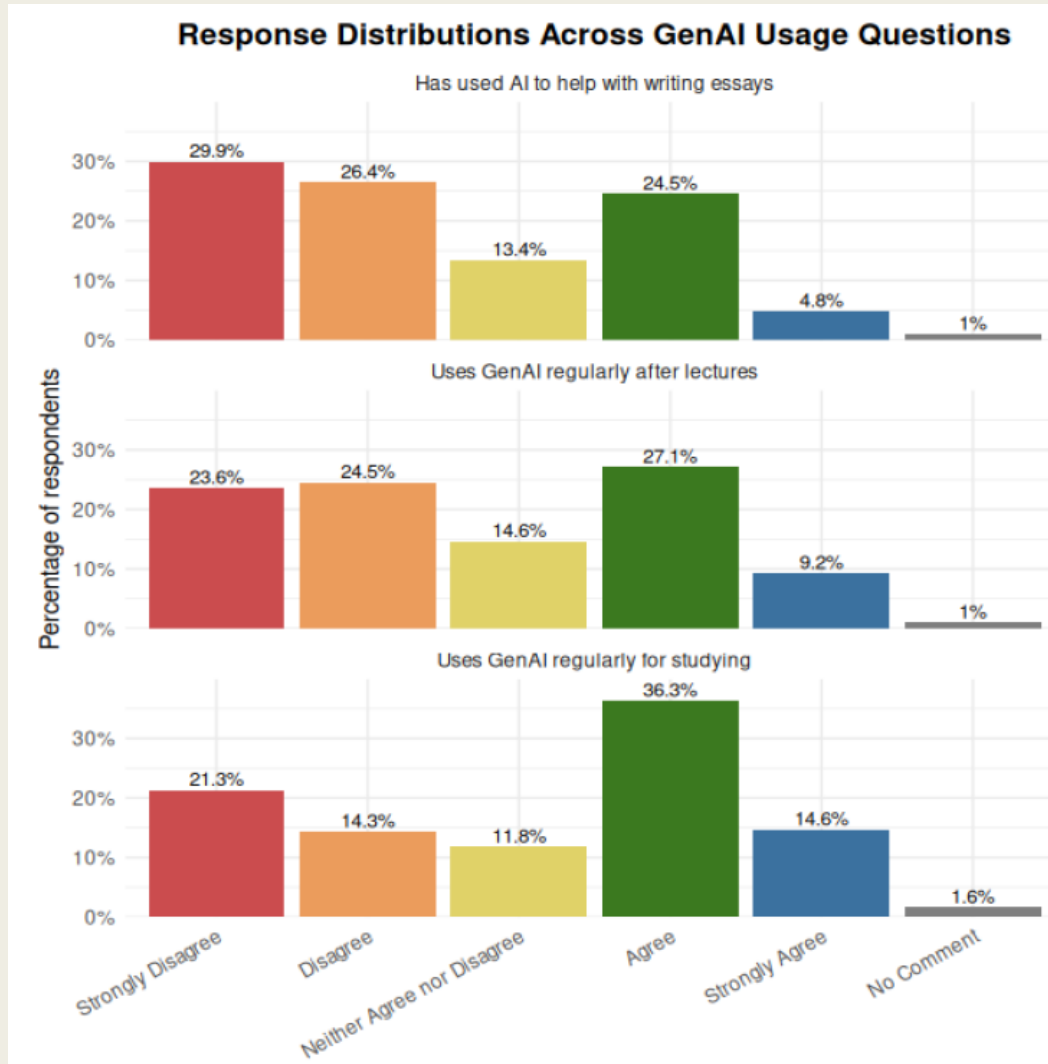
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- Thank you to the other supervisors
 - Dr Patricia Castro Sánchez
 - Dr Alan Hayes
 - Dr Raquel Arribas
- Thanks to the SBS students

Questions?

Gen AI in Undergraduate Sciences' Students (*William Nicholson*)

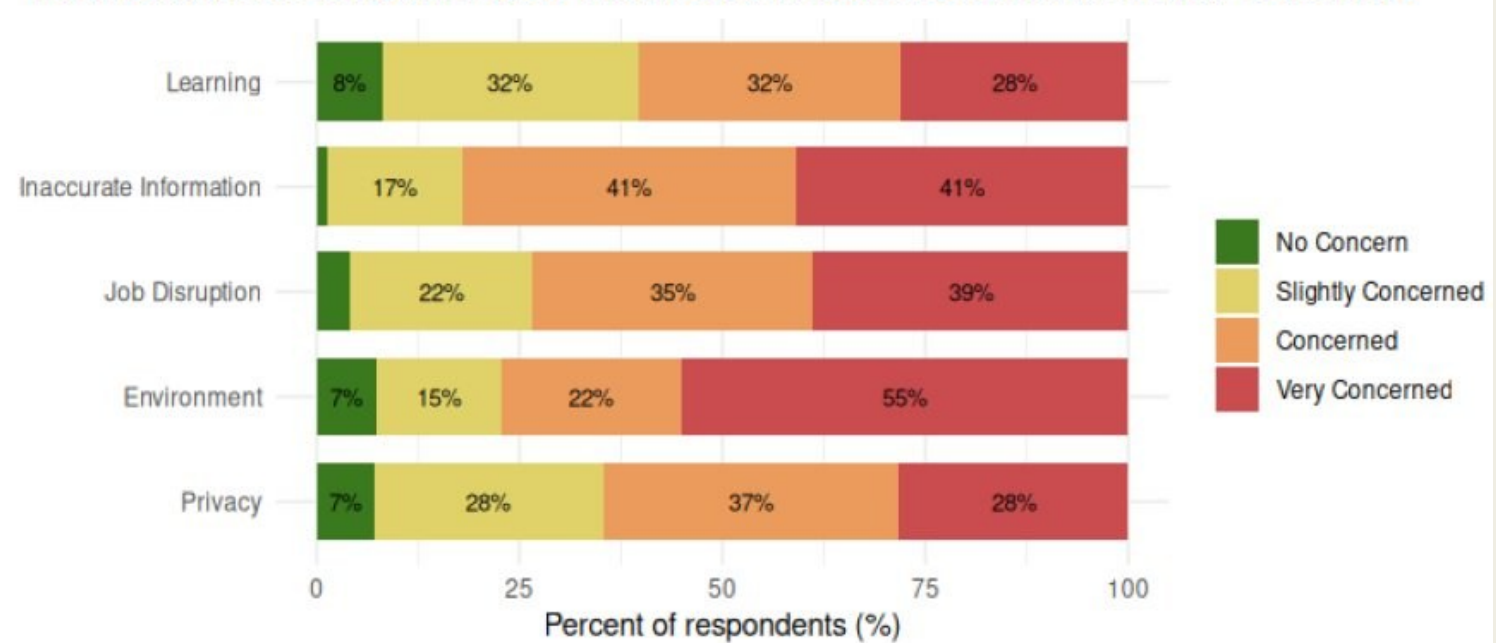
Extra figures 1



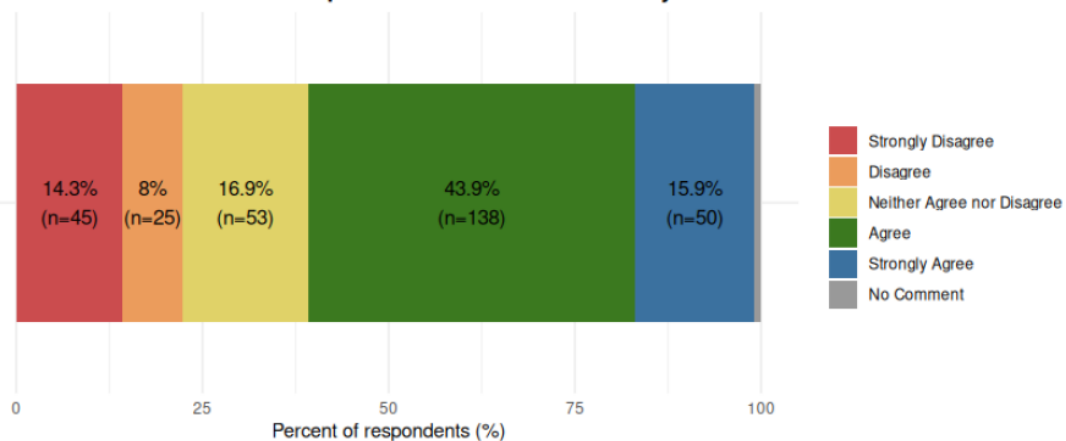
Gen AI in Undergraduate Sciences' Students (*William Nicholson*)

Extra figures 2

Distribution of Concern Levels from Students Across General GenAI Concerns

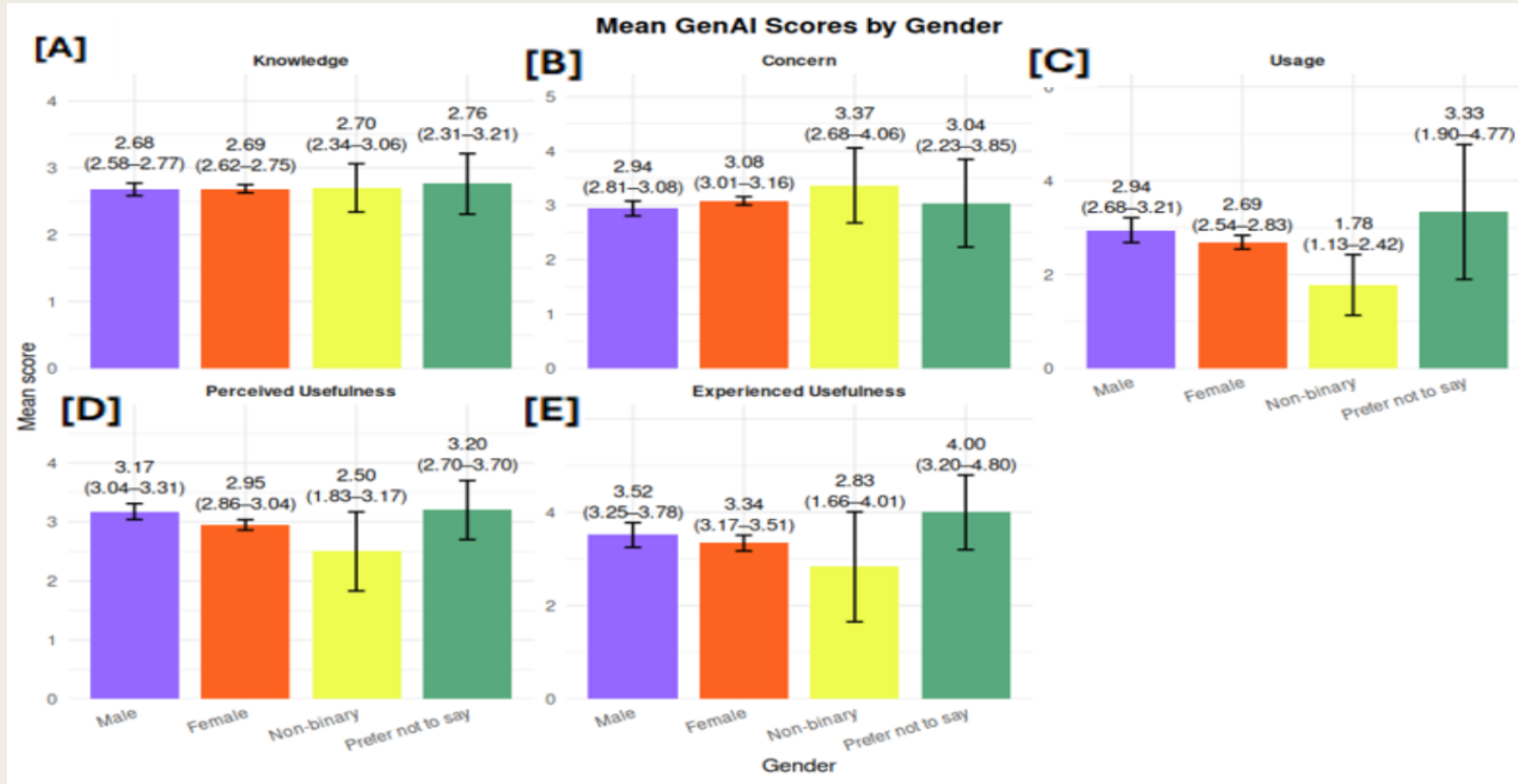


**Distribution of Answers to the Experienced Usefulness Question:
'GenAI has been helpful for me so far at University'**



Gen AI in Undergraduate Sciences' Students (*William Nicholson*)

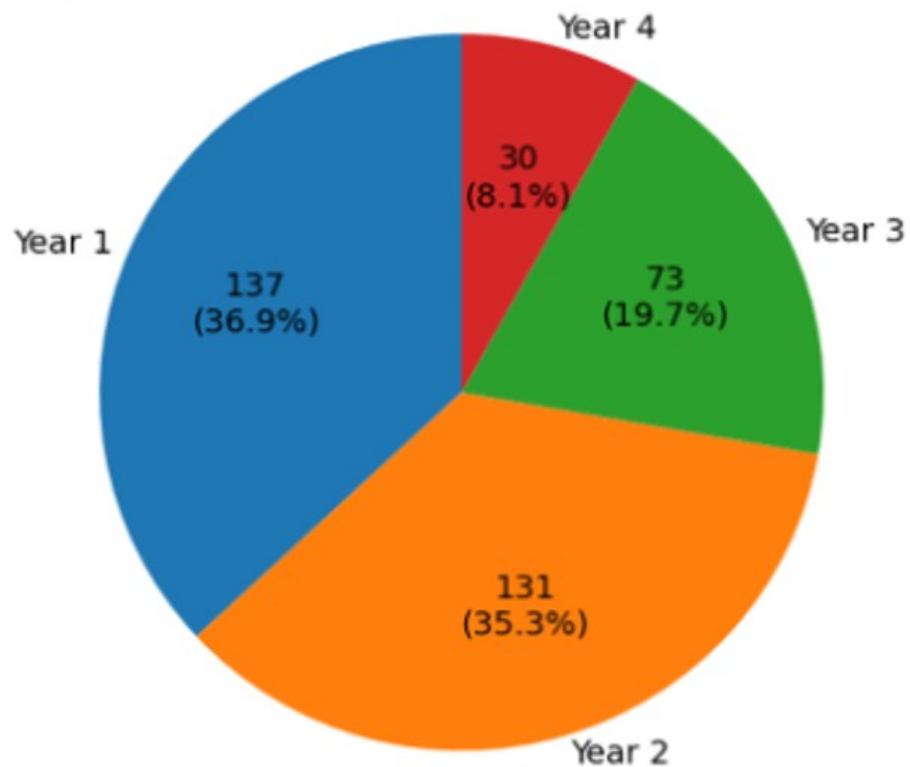
Extra figures 3



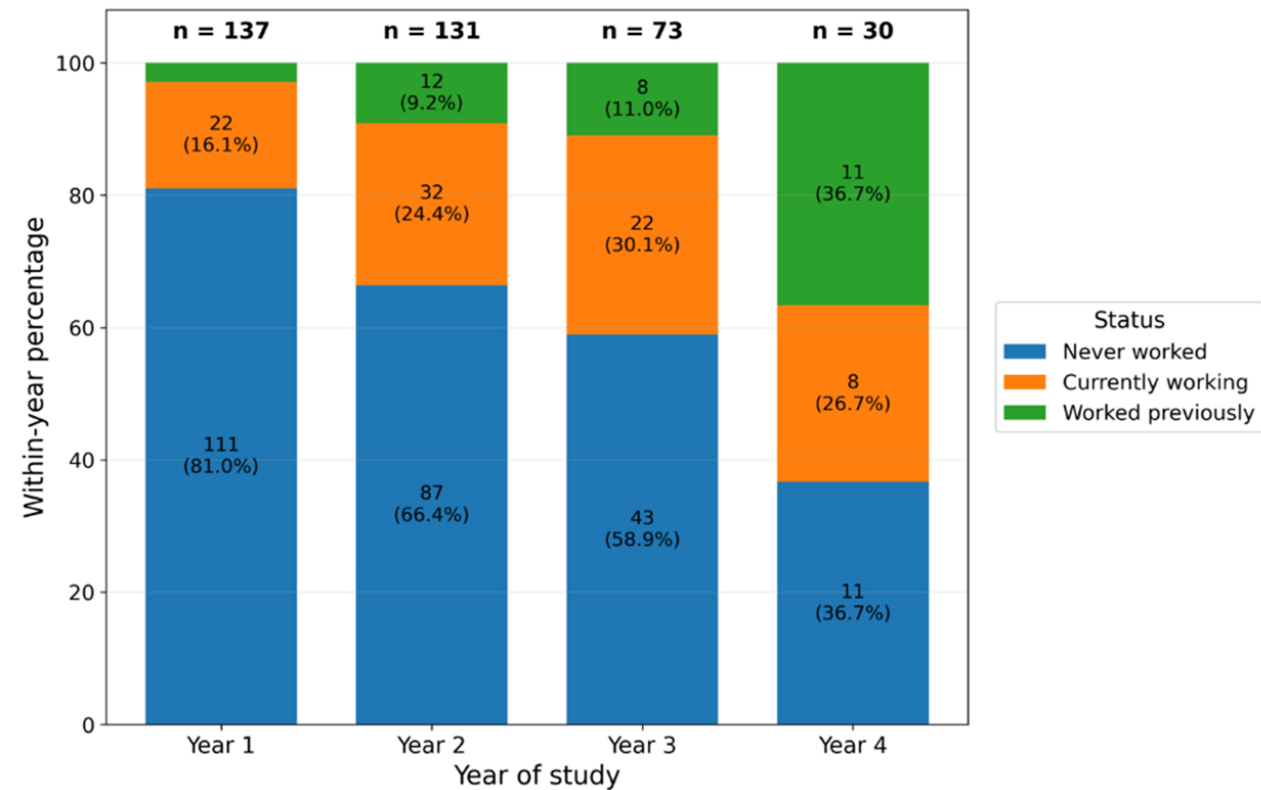
Students in term-time employment – Jiatong Du

Student distribution

Sample distribution by year of study (N = 371)

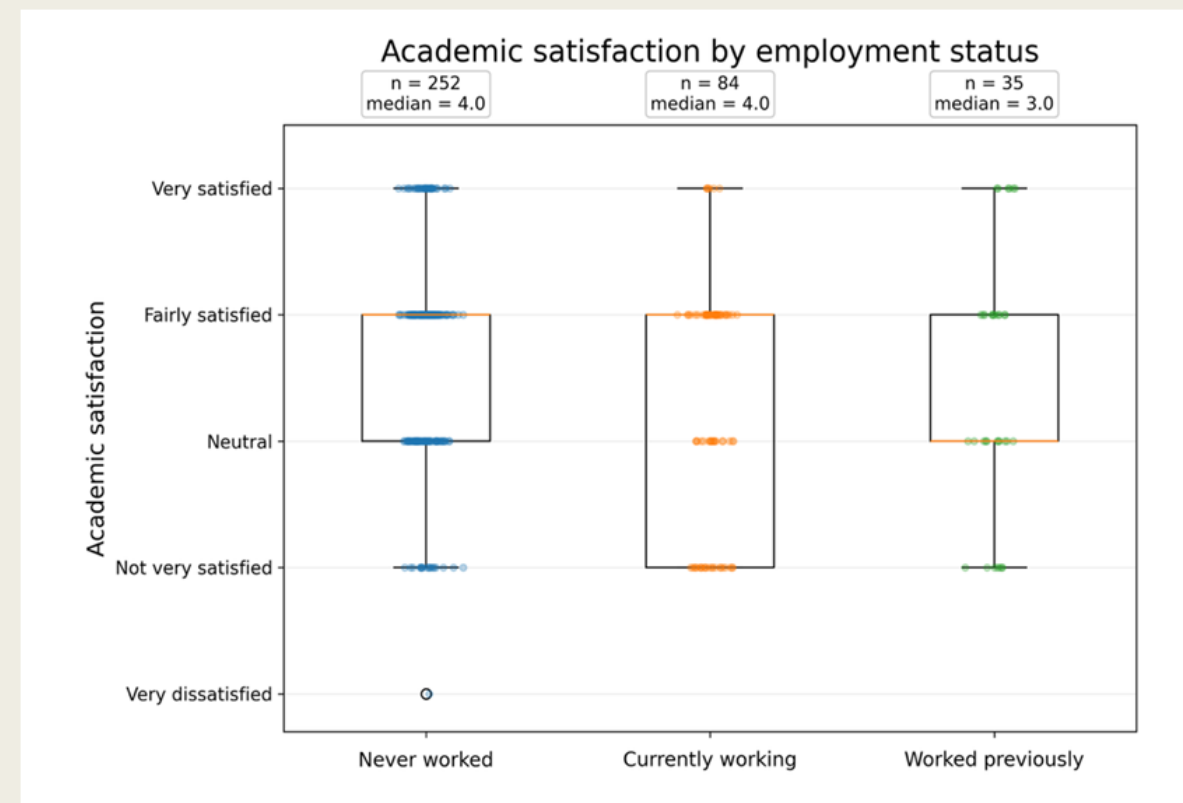


Employment status by year of study



Students in term-time employment – Jiatong Du

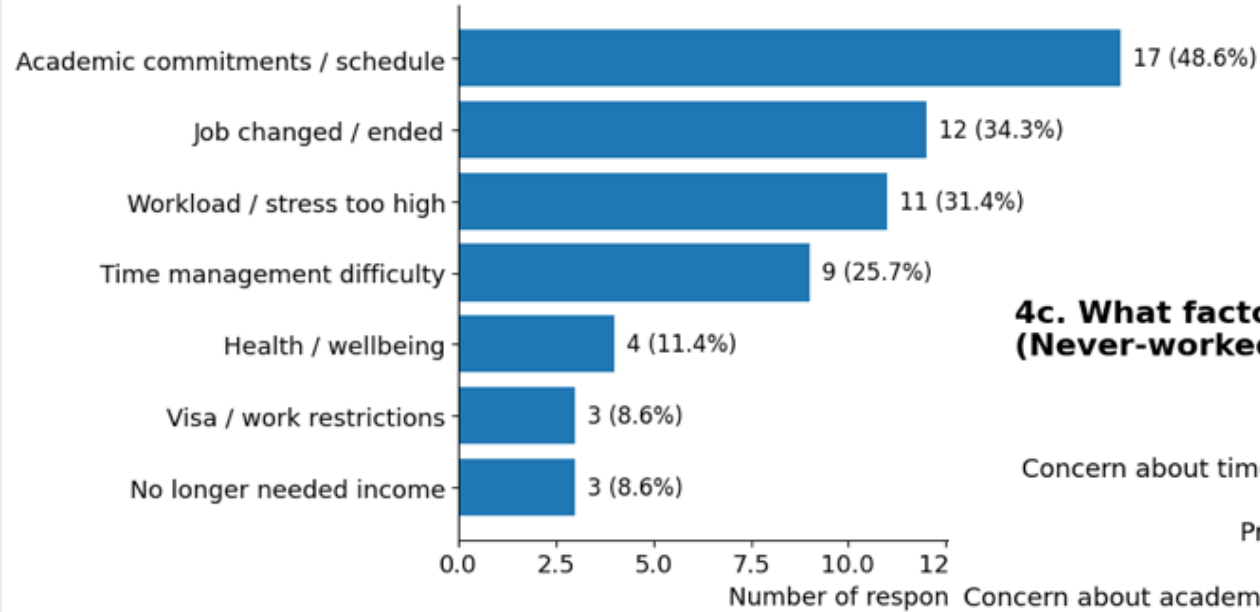
Stress and academic performance



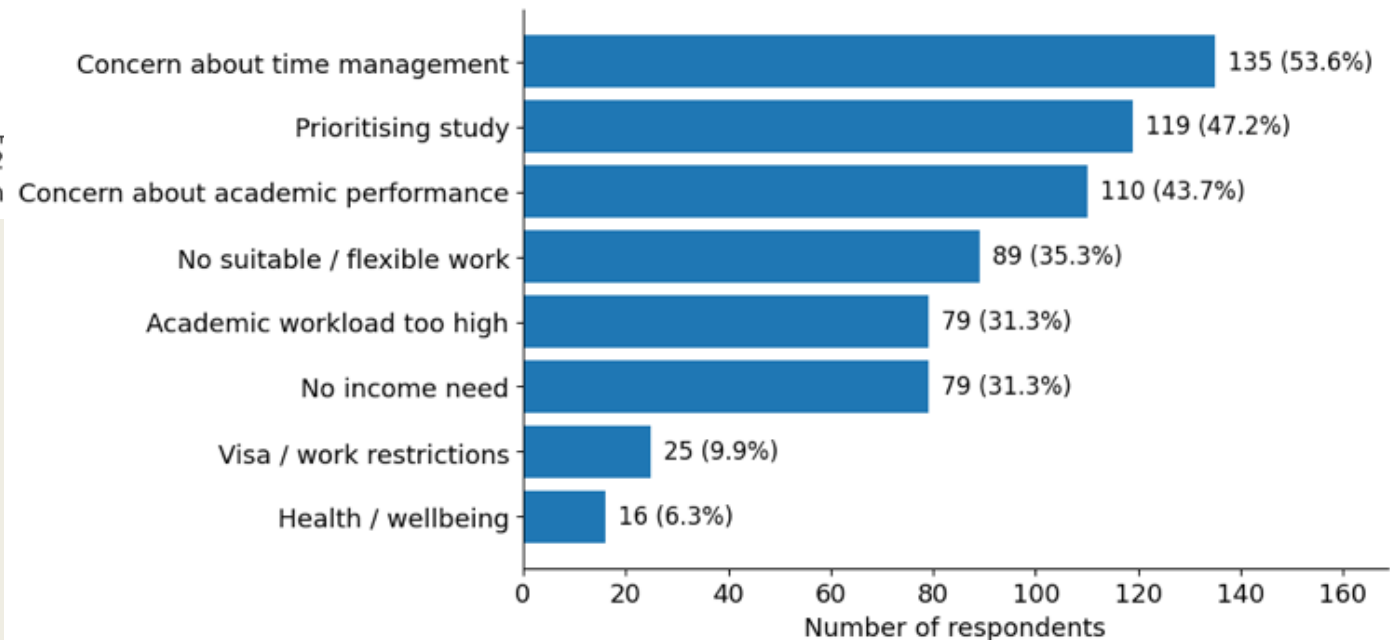
Students in term-time employment – Jiatong Du

Factors impeding term-time employment

4b. What factors led you to stop term-time employment? (Previous workers, n = 35)



4c. What factors led you not to take up term-time employment? (Never-worked students, n = 252)



Students in term-time employment – Jiatong Du

Quotes

Table 2. Themes, subthemes, and selected supporting quotations from the thematic analysis.

Theme	Subtheme	Supporting quotations
Motivation for engaging in term-time employment	NA	"It's mainly due to the fact that I kind of have to, otherwise I won't have enough money to cover my living expenses." (P1,Y3) "Mainly just for rent, to be honest... I don't really have money left over for food and everything else." (P4,Y4) "The main reason is money. If you don't have extra money and you still have to pay everything, then you have to work." (P2,Y2)
Reduced capacity to engage with study	NA	"Sometimes after a shift I just don't feel like I have the energy to sit down and do anything properly." (P1, Y3) "By the time I get home from my shift it's already like two in the morning and my brain's still kind of wired." (P4, Y4) "If you are working, you are not studying, resting, or doing something else. And energy is energy as well." (P2, Y2)

Strategies for managing and mitigating the academic impact of term-time employment

Time management and task prioritisation

"I try to plan my studying and my workload... around my planned work time." (P1, Y3)

"Plan it out in advance and think, right, what do I need to get done on which day." (P3, Y4)

Adjusting working patterns

"If I know I've got a busy week or deadlines coming up, I can reduce my availability." (P1, Y3)

"During exam time I'll ask for less, if I can." (P4, Y4)

Active but constrained coping

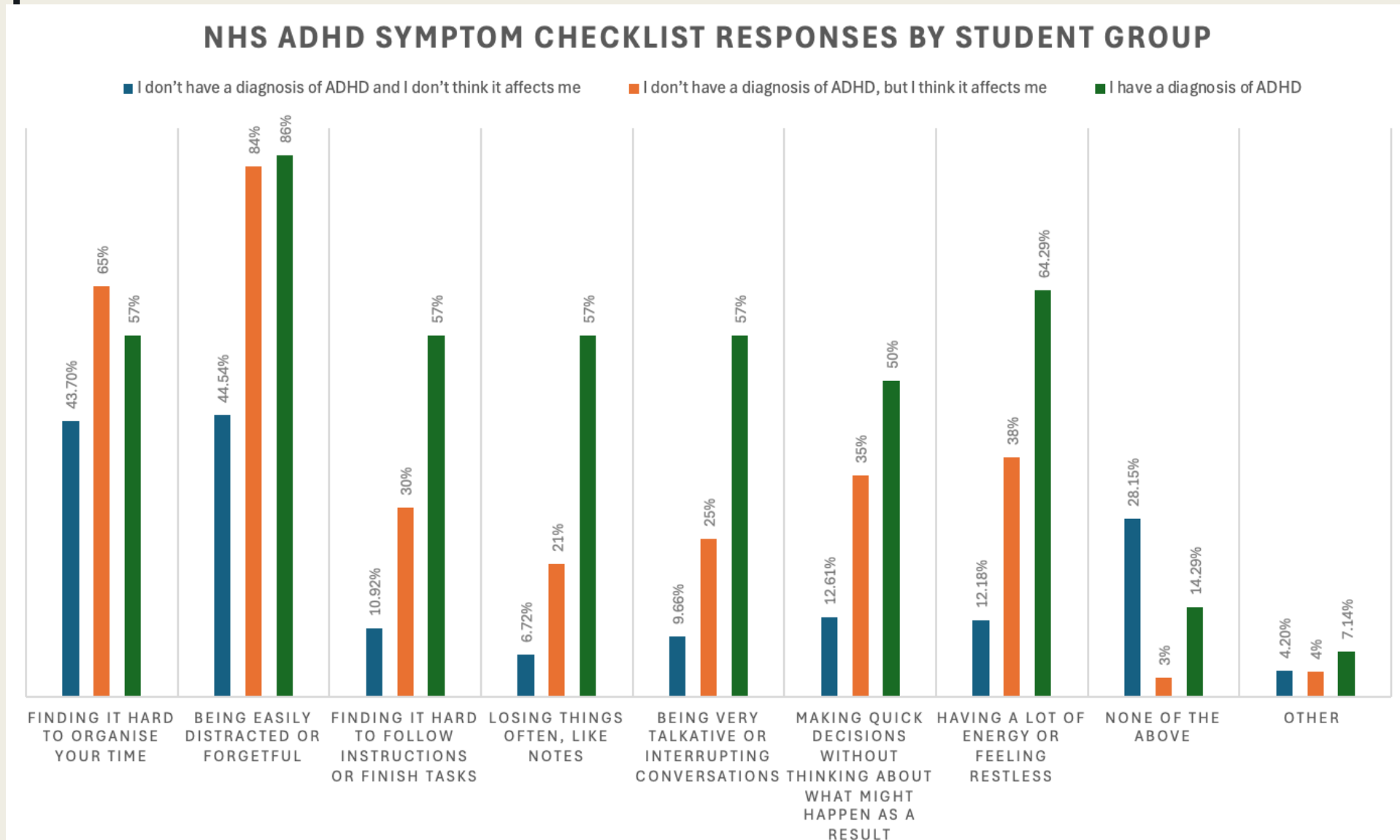
"I can reduce my availability... That helps, but obviously then I lose money, so it's not always ideal." (P1,Y3)

"I can kind of see myself getting scheduled during the day, which would mean I can't be in the lab... we weren't really allowed to schedule it off." (P4,Y4)

"I kept having things like labs clash with work... labs are like three hours long, so I couldn't just miss them." (P7, Y4)

Investigating ADHD student experiences of the new curriculum (Liuyi Lai)

Reported learning disadvantages based on selected NHS adult ADHD symptoms



Investigating ADHD student experiences of the new curriculum (Liuyi Lai)

Method: Interview

Helped

Hindered

01

Timed individual in 1st sit

02

**Group discussion in 2nd
sit**

03

**Room setting of two-stage
exam**

04

**Independent preparation
for learning**

05

Interactive lecture

06

Getting started with tasks

07

Reading long text

Investigating ADHD student experiences of the new curriculum (Liuyi Lai)

Qualitative analysis

Themes	Quotes
Interactive elements supported engagement and understanding	1. “Wooclap questions really help me understand the content because it is interactive” 2. “I like interactive lectures, I am less likely to zone out. I feel less restless after” 3. “The group discussion in the second sit helped me confirm the answers I was unsure about and made me feel more confident”
Flexible learning supported participation	1. “Self-study instead of staying in same room all the time are much more productive” 2. “I actually enjoy the presentations and essay the most because I can do my own work at my own pace and I learn more than just memorising lecture notes”
Independent preparation created barrier	1. “I spend way too much time on prep work then recommended processing” 2. “Interactive lectures have hindered my learning experience as I often forgot that there is prep work needed to be done beforehand and I find it difficult to follow along during these lectures” 3. “I can never do the prep on time so end up missing out on the lectures”