

Embedding stakeholder engagement within an undergraduate Biomedical Science university curriculum



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Introduction

According to the Northern Ireland (NI) Skills Barometer 2021 (4), the total number of professional scientific jobs in NI is set to rise by 2030, increasing by 11% (8.8K), making science-based professions including Biomedical Scientists the second highest employer sector.

The changing needs of the National Health Service (NHS) and educators must be carefully considered in relation to the ongoing health service challenges:

- Increase in acute/chronic pathology
- Emerging roles for Biomedical Scientists
- Institute of Biomedical Science (IBMS)/Health Care Professions Council (HCPC) regulatory requirements
- Imbalance of higher education Level 6
- Employment expectations of graduates

Furthermore, it is possible that employer attitudes and perceptions have not adjusted at the same pace as those in the education system. It is therefore important when delivering teaching and learning in higher education to ensure that students are 'workplace ready.' One strategy to address this issue is to strengthen partnerships between education and health providers.

In a rapidly changing world personal and transferrable skills are key to accessing employment, career progression and becoming resilient to the unknown. A recent survey by Ulster University (UU) highlighted that, in addition to scientific practical skills, communication, digital knowledge, leadership qualities and problem solving were the most desirable skills identified by NI graduate employers (4).

With the alignment of the UU Graduate Attributes strategic objectives 'Nurturing success for every student' employability skills for Biomedical Scientists must be carefully considered.

Thriving Individual

- Enhancing potential
- Confidence/Resilience
- Well-being
- Growth mindset

Engaged Learner

- Subject specialist
- Problem solver
- Researcher
- Critical thinker

Collaborative Professional

- Team player
- Communicator
- Innovator
- Digital professional

Active Citizen

- Integrity
- Inclusion
- Sustainable
- Future Thinking

Methods

Hypothesis:

Focusing on the UU Curriculum Design Principles of Employability, it was proposed that the inclusion of employer engagement would strengthen the learning outcomes and student experience, and future-proof them for employment.

Biomedical Scientists from the NI Health and Social Care Trust (HSCT) laboratories were involved with teaching delivery, skills workshops, interview preparation and career fairs as part of the undergraduate UU Biomedical Science degree programmes between 2020-21 and 2022-23.

The cohorts included:

- 3864 BSc Hons Biomedical Science n=40
- 3871 BSc Hons Biomedical Science with Diploma in Professional Practice (Industrial placement) n=24
- 8185 BSc Hons Applied Biomedical Science with Diploma in Professional Practice (Pathology placement) n=20

Evaluation of project design, implementation and effectiveness of the interprofessional approach was undertaken through UU module surveys, National Student Surveys (NSS), and graduate outcome classifications.

Employer engagement

Northern Ireland Health & Social Care Trusts

Student cohort of study

BSc Hons Biomedical Science

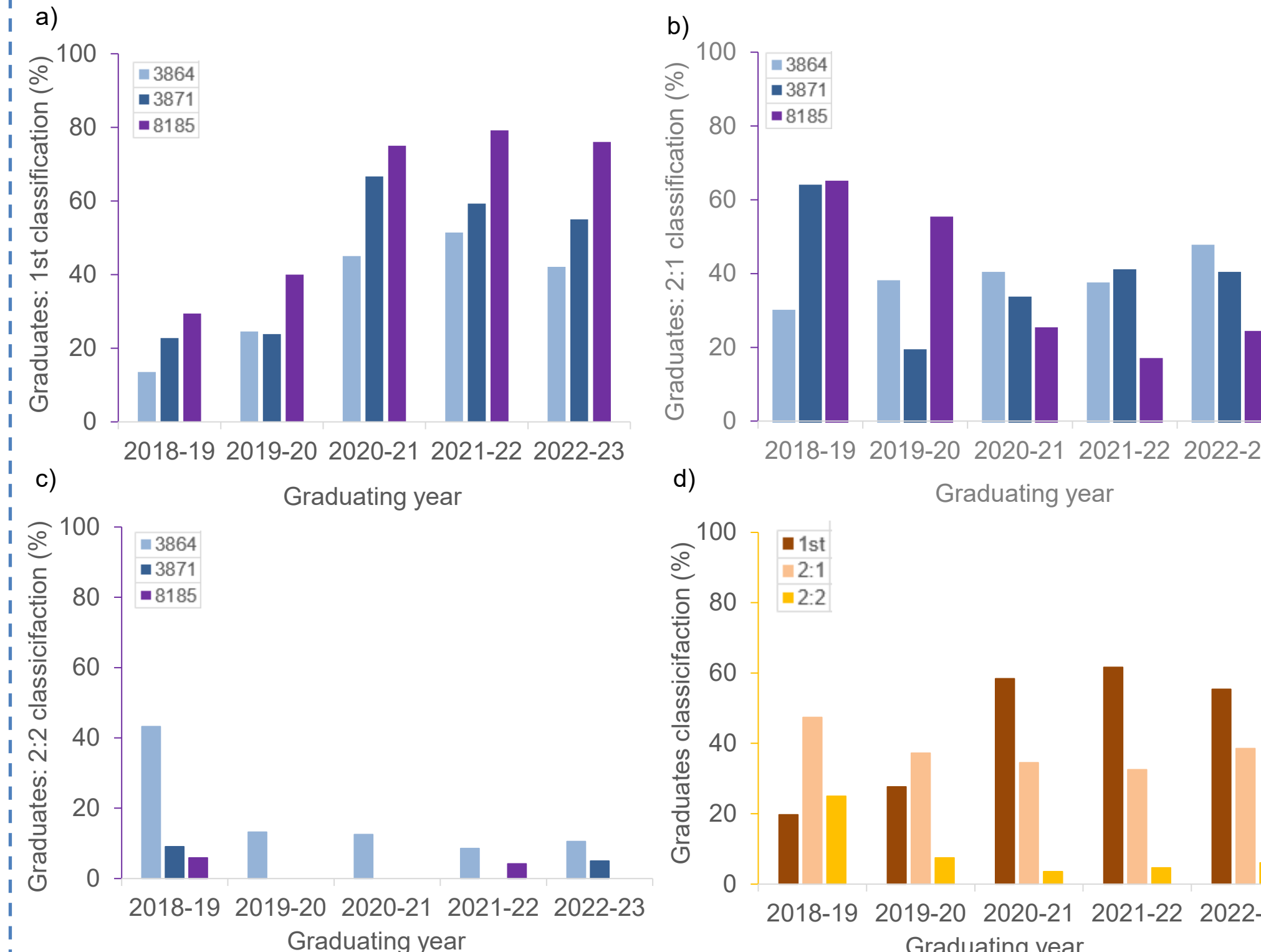
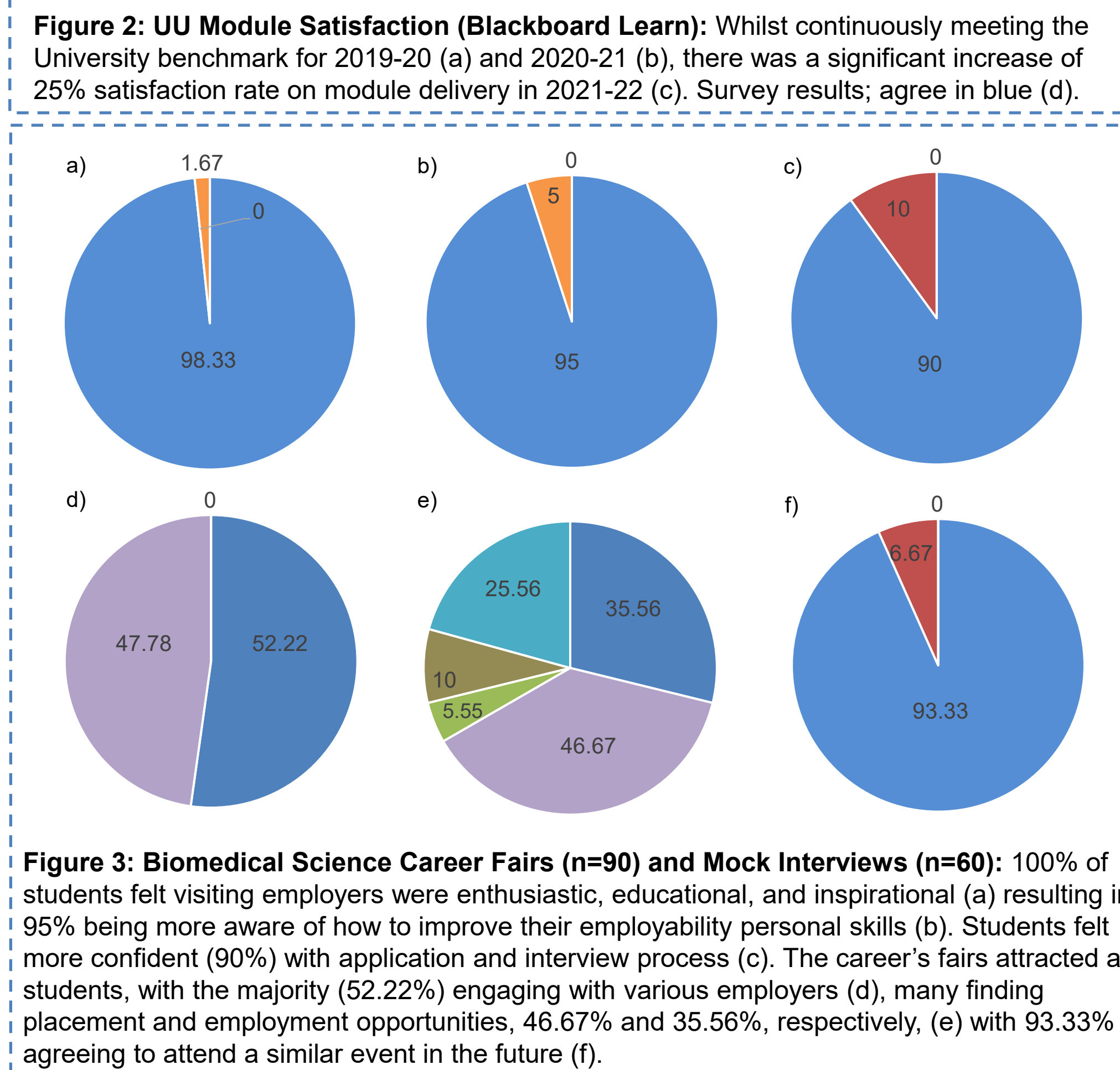
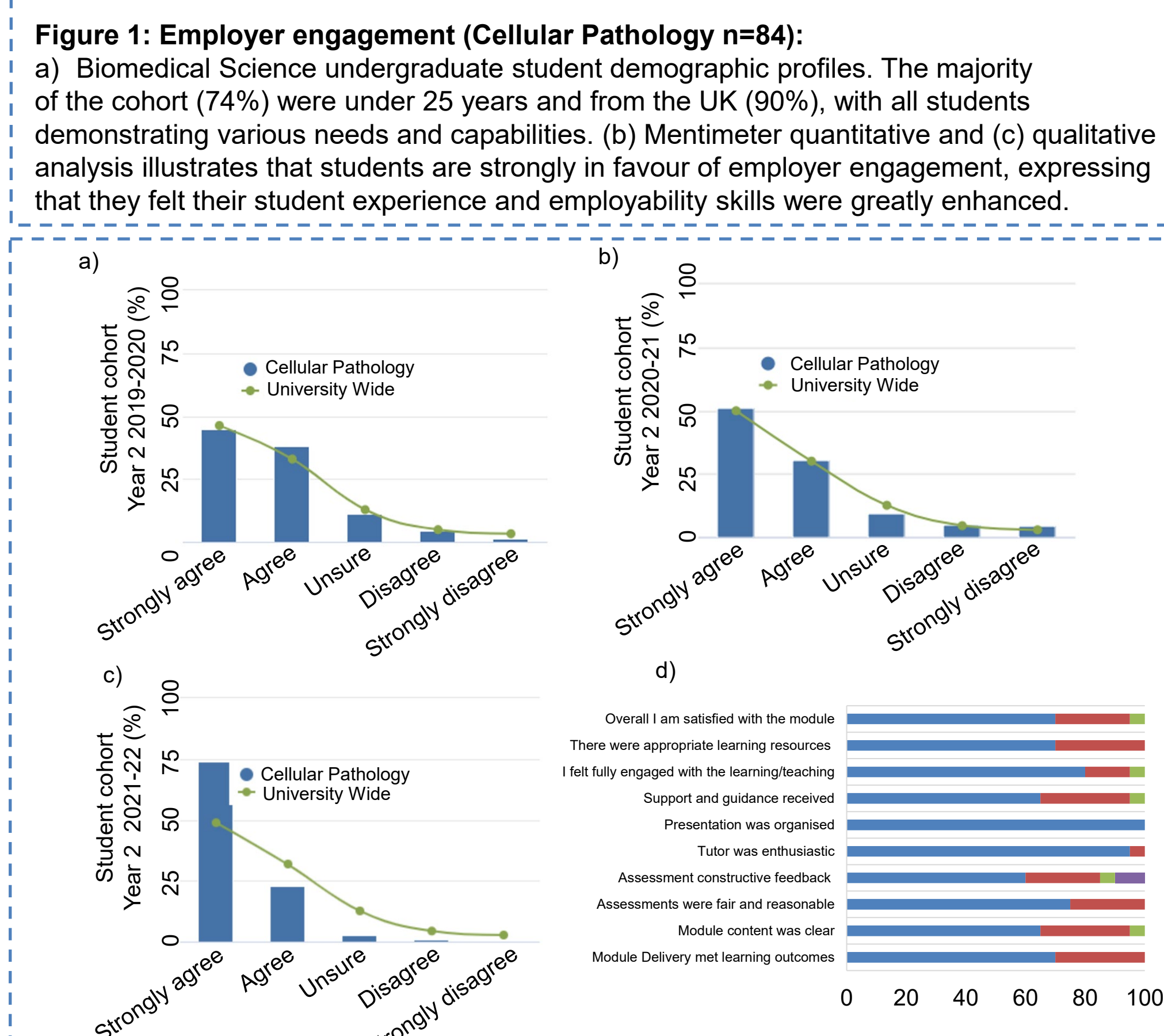
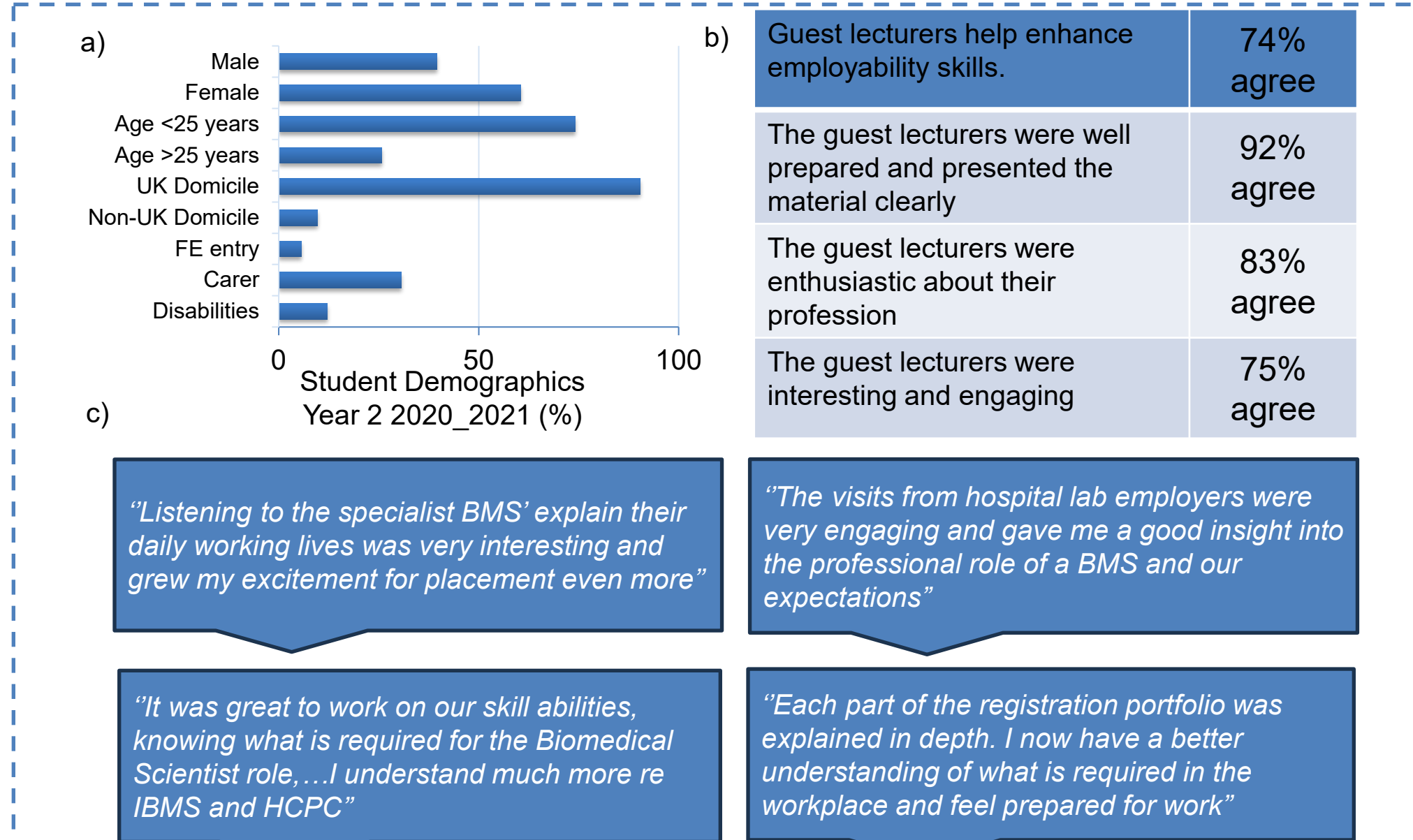
- Year 2 2020_21 (Module Cellular Pathology)
- Year Final 2022_23

Analysis and Evaluation

BSc Hons Biomedical Science

- Module subject surveys
- National Student Survey (NSS)
- Degree classifications

Results



Conclusion

Students widely expressed the opinion that they were provided with a clearer understanding of required transferrable skills and employer expectations within the Biomedical Science profession during teaching and learning.

Employers in the Biomedical Science field have provided a holistic, student centered approach to employability for UU graduates, with 93% of UU graduates either in work or undertaking further study since graduation from UU BSc Hons Biomedical Science programmes (7).

Success of the innovative approach has led to employer engagement becoming embedded as part of the Ulster University Biomedical Science undergraduate degree curriculum.

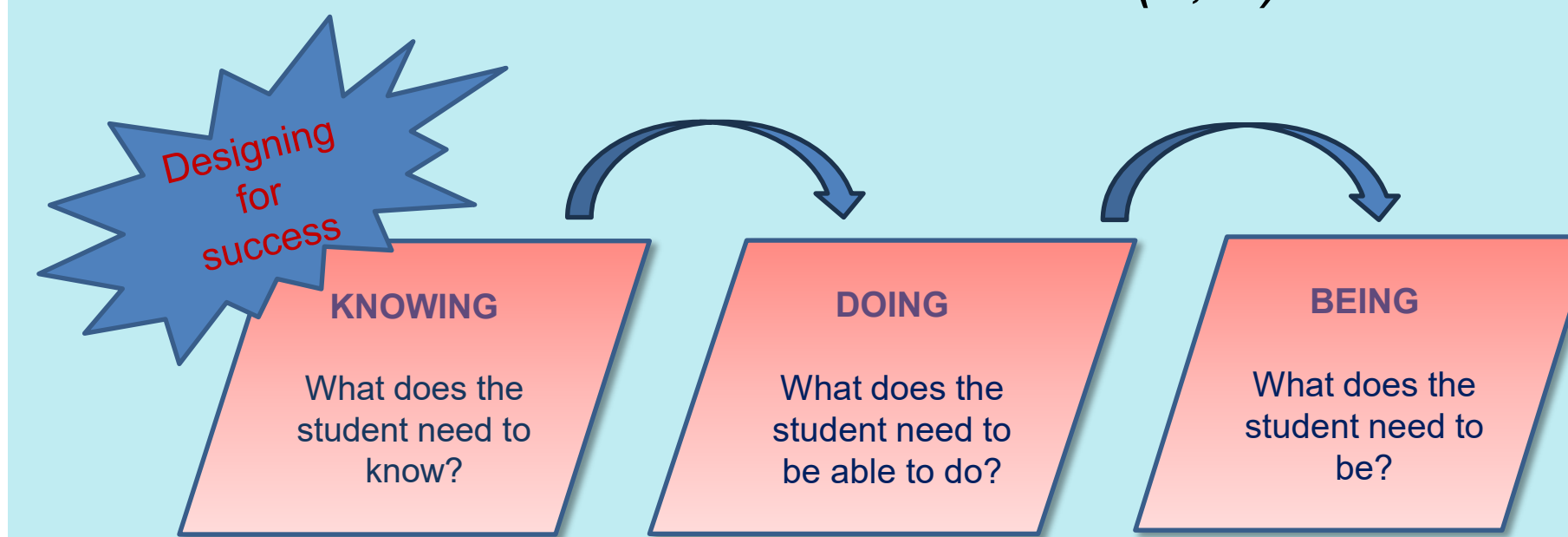
It is proposed to adopt the approach for further UU BSc Hons Biomedical Science distance learning programmes, and indeed wider University courses. Furthermore, the teaching practices are aligned with UU's recently launched Graduate Attributes framework.

This innovative approach will increase the flow of quality graduates to meet increasing sectoral demands, align with employers desired skill expectations, and enhance opportunities for UU Biomedical Science students to succeed in their field and thrive in their career.

"A successful Biomedical Scientist is a happy Biomedical Scientist," BMS, NI

Key points

- **Partnership:** employer engagement in the design and delivery of the university curriculum, enhancing sectoral communication and student employability.
- **Skills:** employability strategy enhancing the student experience and increasing skills through quality coordinated engagement with employers.
- **Quality:** Ulster University encompasses the three dimensions of higher education curriculum design 'Knowing, Doing and Being' ensuring transferrable skills for future effective healthcare (1, 2).



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