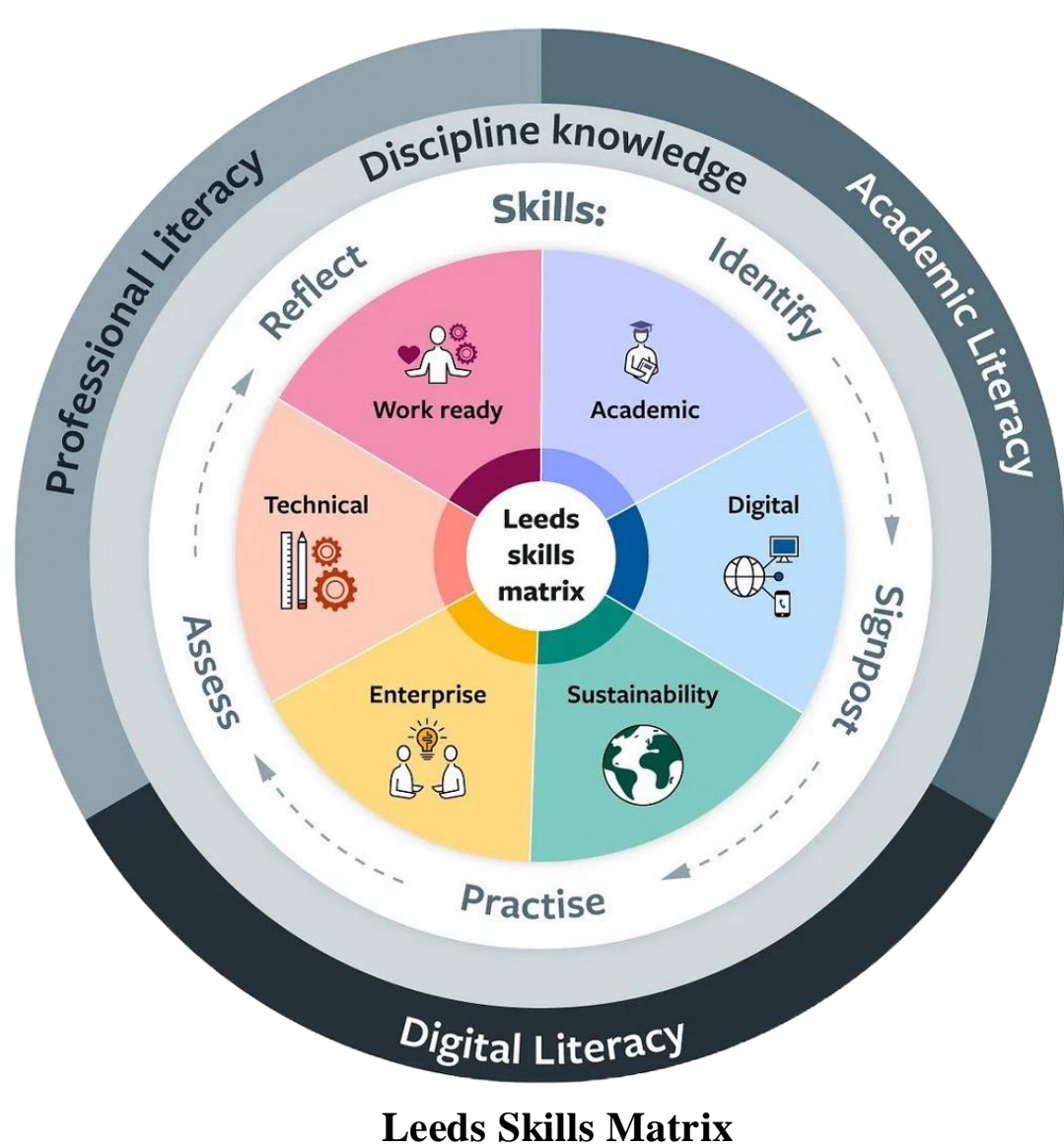


Assessing the Graduate Skills Gap in Biomedical Sciences

Introduction

As many graduates from the School of Biomedical Sciences do not enter laboratory-based careers after graduation, a structured pathway within programmes of study has been developed where students learn transferable skills that assist their studies during their degree and their career beyond the degree. This is comprised of modules which allow experiential transferable skills development through a team-based project related to cutting-edge science. The modules are formatted so that the students learn about a skill, apply it to the project and learn authentically through assessment, to encourage the development of competencies in the students.

As this is a novel process for skill development and involves authentic co-creation of knowledge with students, there are a number of aspects of the module that are being evaluated and explored. These include the student learning gains, perspectives and motivations, staff perspectives including those directly teaching and supporting the module, as well as those outside of the module and faculty, and the perspectives of industry partners. The goal of this work is to create a model of skills teaching that is applicable beyond the School of Biomedical Sciences and equips students with the skills required for success in university and beyond. The aim of the work completed was to collect and form recommendations for these taught modules based on the perspectives and input of staff, students and industry partners.



Aims and Objectives

A major reason to attend university for many students is improved employability, but as many graduates do not go into careers directly linked to their degrees, there is a clear need for effective transferable skill teaching for undergraduate students. I joined a team creating a model of skills teaching applicable in and beyond the School of Biomedical Sciences and that aims to equip students with the skills required for success during and following university.

I had the opportunity to directly shape the future of skills teaching in the School of Biomedical Sciences and contribute recommendations to translate a novel model of skills teaching beyond the faculty. Our team is exploring student learning gains, perspectives and motivations, internal and external staff perspectives, and industry partners.

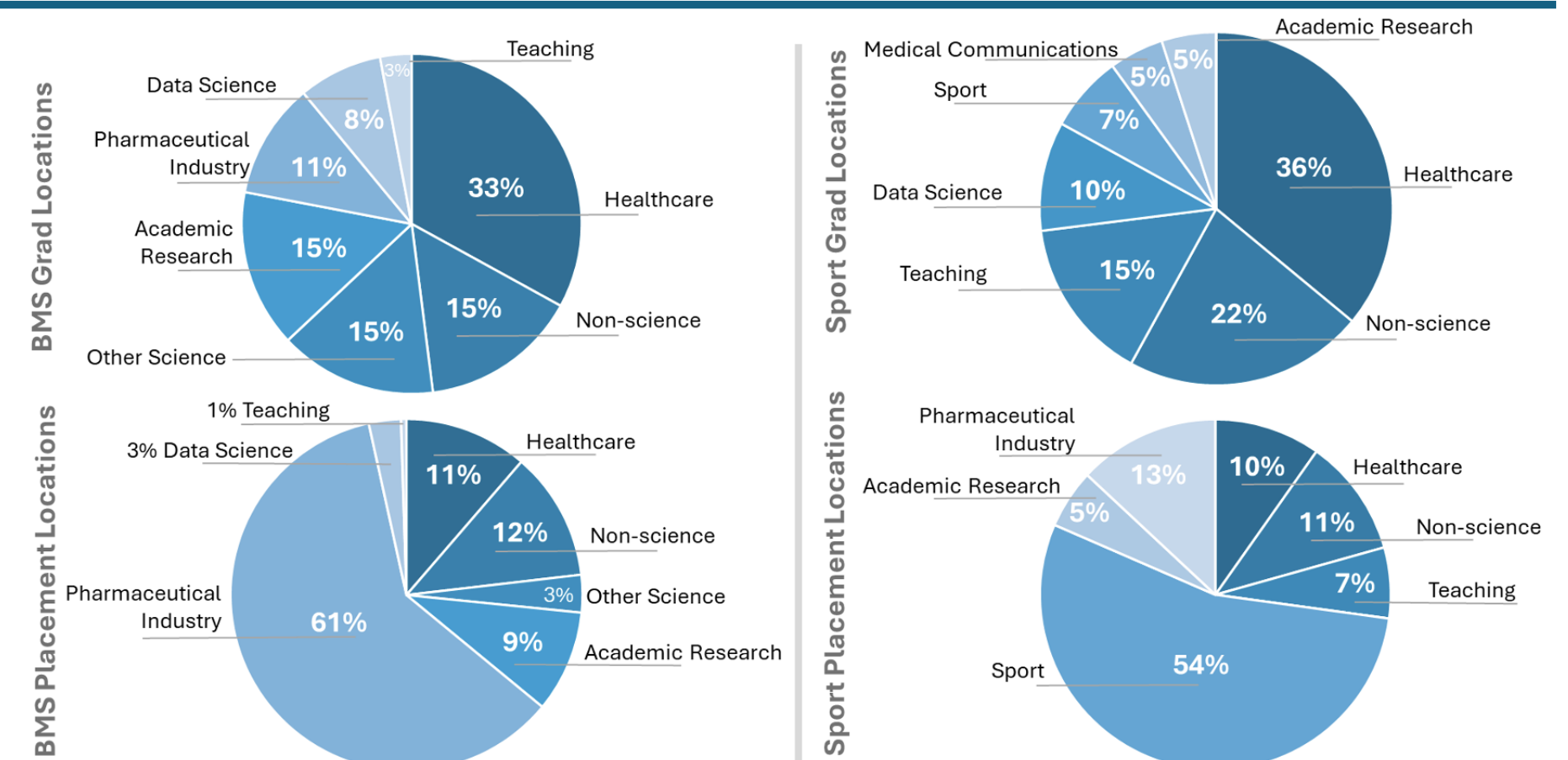
My specific focus was on staff in other faculties, students returning from industry placement and industry partners, to understand their perspectives and how these can be applied to the module to improve it and make it applicable to a wider range of subjects. This gave me the opportunity to connect with professionals beyond the university environment and I played a role in developing the curriculum at the University of Leeds.

Methodology

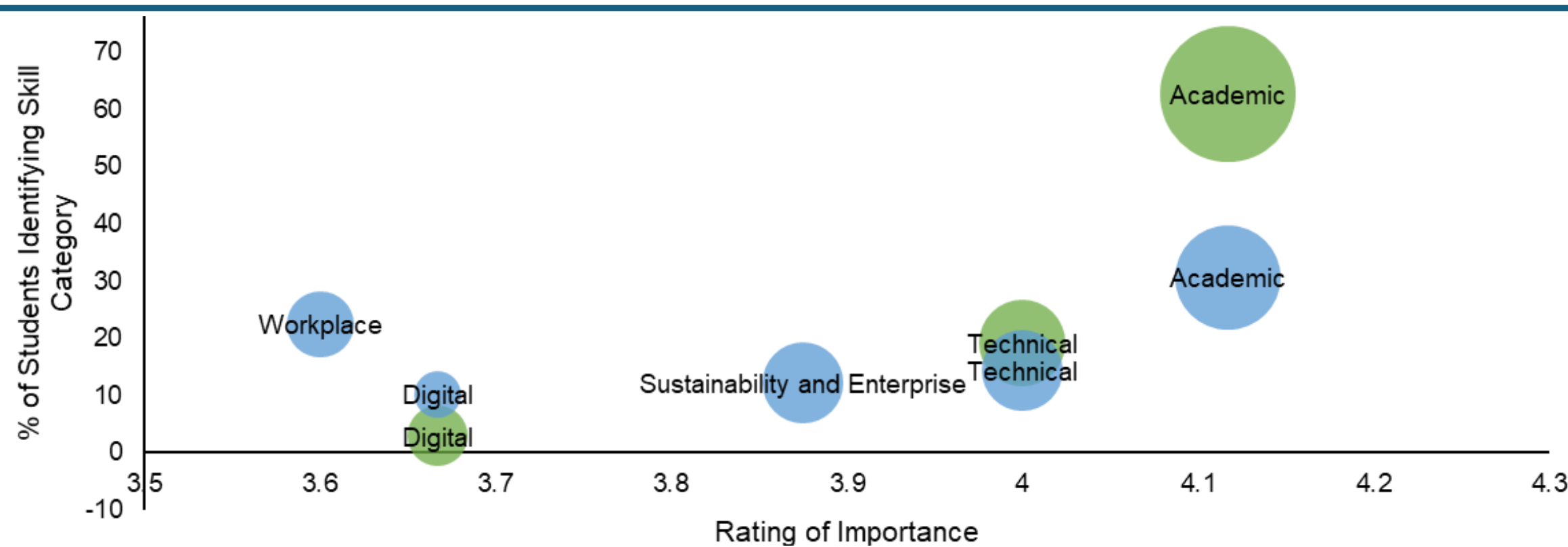
- Creating ways of disseminating the learning model to these groups
- Identifying and approaching members of staff and industrial partners
- Developing questions for and holding interviews or focus groups to gather insights
- Communicating these findings to the staff teaching and developing the modules
- Using these findings to form recommendations for further development of the modules
- Analysis of other findings associated with the evaluation of the model

Data

I analysed data for the industrial placement year locations compared to actual graduate locations and this data covered Biomedical Sciences (degree programmes included Biomedical Sciences, Neurosciences and Pharmacology) and Sport Sciences (Sports and Exercise Sciences, and Human Physiology, Physical Activity, and Health). When comparing the data, discrepancies were found between the two data sets, particularly within the Sport Sciences; over half of students completed an industrial placement year within the sport sector but only 7% go into the sector as a graduate. Furthermore, within the Biomedical Sciences degree programmes, 61% of students completed their placement in the pharmaceutical industry, but only approximately a tenth of students enter the field as graduates. These differences highlight the need for transferable skills teaching within the faculty in order to develop skilled graduates for the workforce.



Diagrams to show the placement vs. graduate locations of Biomedical Sciences Students.



Data from the Graduate Outcomes Survey with skill has developed (Green) or not developed (blue) through their degree programmes. The larger the bubble, the more skills in this domain identified by graduates. Importance rating from an Industrial Advisory Board.

Results

An Industrial Advisory Board comprises academics, visiting professors and senior industry representatives. The board sets objectives based on annual meetings where the members discuss engagement with industry, course structure, and research. In the bubble chart, the blue circles represent skills categories that have not been developed through our degree programmes, and green circles are skills that have been developed. They have also been rated on importance. The university struggles to develop workplace and sustainability skills in their graduates but excel at developing academic and technical skills.

Conclusion

Overall, preparing students for the workplace throughout their degree programmes by developing transferable skills should be the primary focus of teaching within universities. This novel teaching method combines education for professional development & education for sustainable development. The immersion in communities and cultures enables the students to start becoming global change-makers and approaches critical competencies and inclusion within the university environment. The novel teaching method is also engaging for educators and has huge potential and applicability to other disciplines.

Acknowledgements

I would like to thank my supervisor, Dr Alex Holmes, for her guidance and support throughout both my application and my research period. I would also like to extend my deep gratitude to Lord Laidlaw and the Laidlaw Foundation for funding this project and developing as a leader, research, and global change maker.