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Enhancing student experience and career knowledge through alumni engagement: Case study of a sport and exercise science course

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ABSTRACT

The aims of this project were to utilise alumni to enhance Sport and Exercise Science students' knowledge of possible career pathways and enhance student engagement through relatable real-life applications. The project began by contacting all Alumni from the BSc (Hons) Applied Sport and Exercise Science degree at Robert Gordon University since its commencement in 2012 ($n = 329$). Thirty-one percent of graduates responded to this initial contact and the information gained from this and associated follow up led to the creation and implementation of four key outputs. These outputs were 1) a careers journey's document, 2) work placement opportunities, 3) guest lecturing, and 4) careers testimonial videos. The implementation of these outputs was evaluated via online questionnaires.

When asked to evaluate the careers journey's document 90% of students found it useful, and 92% agreed it encouraged them to think about their future career. Six of the eight students who completed a work placement created by the project reported it was beneficial to work with a graduate and all the placement supervisors who responded reported that being a graduate from the course helped them as a placement supervisor. Ninety nine percent of students fed back positively that they found live guest lectures from alumni interesting, and 89% reported that they would like to hear from more graduates in the future. When evaluating the use of video snippets from graduates rather than live guest lectures there were no significant differences in the evaluation responses ($P > 0.05$). Ninety six percent of students found the careers testimonial videos interesting, and 71% were encouraged to act regarding their own career/personal development.

In conclusion, the use of alumni enhanced student's knowledge of career options and pathways post-graduation, it encouraged students to think about and take action regarding their future careers. Students engaged with content from alumni finding it interesting and requesting more in the future. Input from graduates should be embedded into courses where possible.

1. Introduction

Sport and Exercise Science (SES) is the application of scientific principles to the promotion, maintenance, and enhancement of sport and exercise related behaviours and has become a popular subject to study at undergraduate degree level ([The British Association of](#)

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Sport and Exercise Sciences, 2018).

SES degrees are multidisciplinary in nature covering a range of topics typically including, but not limited to, physiology, biomechanics, psychology, exercise prescription and delivery, research methods, and data analysis (Kittel et al. 2023). Consequently, SES degrees lead to a large range of career pathways. The British Association of Sport and Exercise Sciences outline three overarching career areas for the discipline, these are 1) Elite Sport and Performance, 2) Research, Teaching, Coaching and Sport Development, 3) Clinical Exercise, Health, and Fitness. Within these three areas they identify 19 different job roles. This highlights the range of career options for graduates who remain in the discipline, in addition to this there is even wider scope for graduates to transfer their skills into other sectors with approximately 30% of graduates gaining employment out with the sector (The Physiological Society, 2019).

Students typically choose to study SES at degree level because of an interest in sport, this has been evidenced by Spittle et al. (2021) who used an adapted version of the Attractors and Facilitators for Physical Education questionnaire (AFPE) to examine reasons behind students' course applications. Spittle et al. (2021) found through exploratory factor analysis four key factors associated with students' decision to study sport and exercise science. These were: sport association and continuation (love of sport and desire to remain involved through study and career), significant others and low perceived demand (choice based on others involved in the field and that the course was easy, the only option or has job security), interpersonal reasons and means to an end (wanting to work with and help others and to provide career options), and subjective warrant and prestige (the individual believes they have what it takes to be successful in exercise and sport science). These factors accounted for 22.5%, 10.6%, 6.5%, and 3.9% of the variance respectively. Research by Minten and Forsyth (2014) found that SES students do not necessarily begin university study with a defined career path with students typically making decisions regarding their careers during their studies and post-graduation. Minten and Forsyth (2014) consequently advocate that SES higher education providers should provide support to students in exploring their career needs and values and how these relate to the range of career opportunities that are available to them.

Peer assisted learning is a widely researched pedagogical strategy and articles such as those by Fennell (1993), Terrion and Leonard (2007), and Keerthirathne (2020) are amongst those which can provide an overview in the context of higher education. Briefly, peer learning is the acquisition of knowledge and skills through active helping and support among peers who are equals in standing or are a matched companion (Topping and Ehly, 1998). Gamlath (2022) proposed an undergraduate peer learning framework in which alumni were identified as a valuable part of the process. This could be argued to fall under the adjunct of peer assisted learning named 'near peer' teaching often used in the education of medical and health care professionals rather than peer assisted learning per se (Zhang et al. 2022). This depends on whether course alumni are considered to be 'peers' of those currently on the course or whether the term 'peer' applies to those currently on the course only. Gamlath (2022) proposed that alumni engagement would be beneficial for students, enabling them to receive advice from someone who has already been through the process of finding employment, explore career interests, attain personal growth and leadership skills, and improve their practical knowledge. Lawson (2018) disseminated a range of alumni job profiles to their current students alongside career information from their respective professional body and found that students preferred the information from the graduates. Students appreciated the "real world" nature of the alumni careers information because it reflected actual jobs obtained by graduates from their university (Lawson, 2018). A similar finding was obtained by Craig et al. (2020) who found that undergraduate students preferred hearing from guest speakers who were alumni from their course than those who were not, concluding that these were more relatable role models.

Collectively these findings suggest that embedding authentic experiences of graduates within a curriculum can have a positive impact on the experiences of current students. Further research regarding the impact this has with student engagement would be beneficial. Consequently, the aims of the project were to utilise alumni to enhance SES students' knowledge of possible career pathways and enhance student engagement through relatable real-life applications. The aim of this paper is to evaluate the impact of this project on current students' career knowledge and engagement with careers resources and evaluate the students' experience of the project.

2. Materials and methods

This project was completed via a case study of alumni engagement in the BSc (Hons) Applied Sport and Exercise Science Degree at Robert Gordon University in Aberdeen. This project was approved by the School of Health Sciences Research Ethics Committee.

2.1. Contacting alumni

The project began by contacting all Alumni from the BSc (Hons) Applied Sport and Exercise Science degree at Robert Gordon University since its commencement in 2012 ($n = 329$) through the use of emails, LinkedIn, and snowballing techniques. This initial contact took place in August 2022 using the email addresses stored on the graduate's electronic student files and a manual search of LinkedIn for all 329 graduates. Alumni were also encouraged to share the contact made with peers who they were still in touch with. In this initial contact, graduates were sent a link to an online survey via Microsoft Forms. This survey contained 13 questions concerning year of graduation, employment and education history, opinion of the course, and interest in being involved further in opportunities linking back to the course (hosting placements, guest lecturing, completing a video or written testimonial). As a result, 110 responses to the survey were collected (33% response rate), this response was made up of graduates from the following graduation years 2012 $n = 3$, 2013 $n = 3$, 2014 $n = 9$, 2015 $n = 20$, 2016 $n = 10$, 2017 $n = 9$, 2018 $n = 15$, 2019 $n = 13$, 2020 $n = 10$, 2021 $n = 16$ and unknown $n = 2$. From the initial survey the following outputs were created: a career journeys document, additional placement opportunities, invites to input into teaching and careers testimonial videos.

2.2. Career journeys document

Using the information obtained from the Alumni survey concerning their employment and education history post-graduation, the graduates' journeys were characterised by current job role with 12 categories identified by the lead author and sense checked by the second. These were: Elite Sport, Active Schools, Clinical Physiology, Coaching, Education, Fitness Industry, Physiotherapy, Public Health, Sports Development/Community Roles, Wellbeing, Transferred to other Sectors, and Further Study. Within each of these sections an outline of the professional journey of each individual graduate was included. This outline included the graduates' current job role, year of graduation, employment history since graduation and education history since graduation. This "career journeys" document was disseminated to all current students through utilisation within class time and via email. Current students were then asked to complete an anonymous online questionnaire via Microsoft Forms to provide feedback on the document, 82 students completed this questionnaire out of a possible 153 students in the 2022/23 academic session indicating a 54% response rate.

2.3. Work placement opportunities

In response to the survey 59 graduates expressed an interest in finding out more about hosting student placements. These graduates received a follow up email with full information of how to become involved in placements. This resulted in eight new placement providers for academic session 2022/23 and two graduates interested in offering placements for 2023/24, however, these 2023/24 placements did not come to fruition. In addition, 10 graduates investigated further but their employer was not in a position to take on placement students. The eight new placements were evaluated through two online questionnaires one for the placement providers (graduates) and the other for the current students who undertook the placements.

2.4. Invites to input into teaching – guest lecturing

Eighty-three survey respondents expressed an interest in finding out more about guest lecturing. Further contact with these graduates via email led to 21 indicating which aspects of the course their expertise and job role best aligned. From this, 13 were selected to present to current students spread across the full range of stages and modules on the course. Out of this 13 only three sessions occurred in the 22–23 academic year. Barriers to the implementation of these guest lectures included: other priorities for module leads, responsiveness of graduates to communications, and matching availability. To enhance the opportunities for graduate involvement in teaching in the 2023–24 academic session the project lead met with all members of the teaching team during June/July 2023 to discuss the use of graduates as guest lecturers and the opportunity to create video snippets with graduates to embed into teaching, to remove the main barrier previously highlighted by staff in terms of availability logistics. During these meetings there were different levels of enthusiasm across the team, 2/7 of the staff had some pushback around the additional workload, others could see the value and understood the purpose, but only one was enthusiastic. The project lead sent follow up emails to the teaching team with details of the project and contact details of relevant graduates. Follow up emails were sent to staff requesting progress updates and offering support at the start and end of semesters one and two. During the academic year 2023–24, six live graduate guest lectures were completed and video snippets from two graduates were used within modules. The video snippets of graduate content created ranged from 7 to 13 min in length. Finally, during the 2023–24 academic year, current students completed an online questionnaire evaluating the live graduate input and the video input. This online questionnaire was completed immediately after the graduate input had taken place with 84 responses received following live input and 15 following video input.

2.5. Careers testimonial videos

In response to the survey 38 graduates expressed an interest in competing a testimonial video. These 38 received a follow up email with full information of how to create a testimonial video using their mobile phone or giving them the option of arranging a video call during which the testimonial video would be recorded. Following this email and some further follow ups eight testimonial videos were created. The videos were for careers in the following identified categories: Wellbeing, Sports Development, Clinical Physiology, Elite Sport, and Education. As part of class time in years 1–3 of the BSc (Hons) Applied Sport and Exercise Science degree students were required to watch at least one of the careers testimonial videos and complete an anonymous online feedback questionnaire via Microsoft Forms, 68 students out of a possible 119 completed the questionnaire giving a 57% response rate.

3. Results and discussion

3.1. Careers journeys document

A total of 82 students completed the anonymous feedback questionnaire. Of these 82 10% strongly agreed that before reading the document they had a clear idea about their future career, 41% agreed, 32% were neutral, 11% disagreed and 6% strongly disagreed. When asked to rate the document out of 5 the mean rating obtained was 4.2 ± 0.7 . When asked to evaluate the document 90% of students found it interesting, 90% found it useful, 92% agreed it encouraged them to think about their future career, and 75% agreed it had highlighted job opportunities they were unaware of. The full breakdown of these results can be seen in [Fig. 1](#).

The findings here are aligned to that of [Lawson \(2018\)](#) with students reporting that the information regarding alumni careers was interesting. In addition, it is reported here that this method also introduced students to careers that they were unaware of. This may be

because approximately 30% of the sample were first year students and so have had less exposure to the variety of topics and career opportunities in SES at this stage. A larger 17% of this sample were unsure about their future career compared to 9.3% of Exercise and Sport Science degree students in Australia surveyed by [Spittle et al. \(2021\)](#).

3.2. Work placement opportunities

All eight of the students who undertook the new placements completed the evaluation questionnaire, when asked to rate their placement out of five the mean score was 4.8 ± 0.5 . Seven of the eight students were aware that they were working with a graduate and six of these seven reported it was beneficial to work with a graduate. Reasons given as to why it was beneficial included: the graduate's knowledge of the course and placement assessments enabling them to assist students, and the ability to discuss career journeys post-graduation in a relatable and authentic manner.

Only three of the graduate placement providers responded to the questionnaire. All three indicated that being a graduate from the course helped them as a placement supervisor. The main reason cited was that they were able to empathise with the students. Additionally, having been on placements themselves, they fed back that this helped them ensure the level, volume, and variety of experiences was appropriate for the student. Finally, it was reported that they thought their knowledge of university processes and assessments enabled them to ensure that current students met their objectives. All three also reported that hosting a placement was a positive experience, that the placement assisted them in achieving their objectives, and that they would have a placement student again.

The benefits of work placements have been widely studied from a student ([Reddan and Rauchle 2021](#)), academic ([Malone, 2017](#)), and industry ([Ferkins, 2002](#); [Stewart et al. 2016](#)) perspective. By having alumni as the placement provider, students also gained the benefits of alumni mentoring as advised in [Gamlath \(2022\)](#)'s peer learning framework, in particular with regards to career guidance ([Dollinger et al. 2019](#); [Lorenzetti et al. 2019](#)). Reflections from both the students and the alumni acting as placement providers concerning the benefits of alumni being knowledgeable with regards to the expectations of the placement, its assessment, and the broader course, are aligned with the findings of [Ragland and Boylan \(2017\)](#). [Ragland and Boylan \(2017\)](#) surveyed cooperating teachers (experienced educators who served as a mentor to student teachers) with regards to their experiences of working with student teachers and found that they rated their experiences more positively when working with current students from their alma mater.

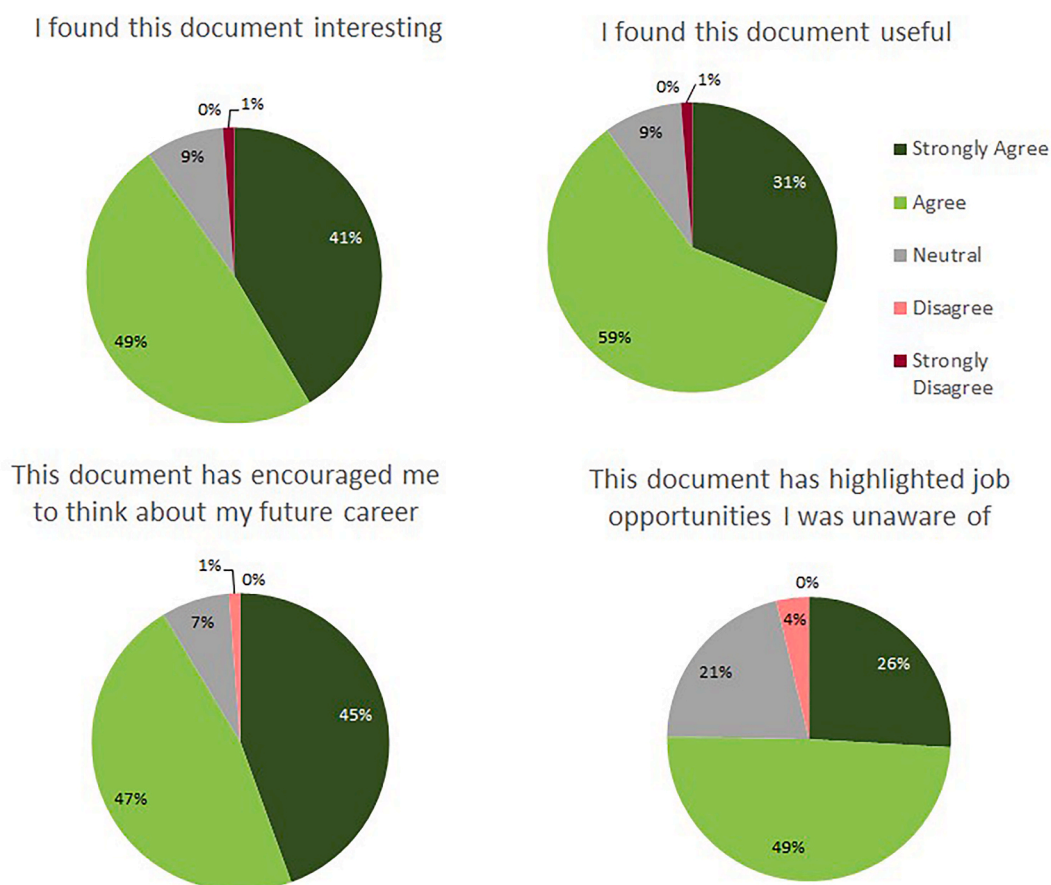


Fig. 1. Percentages of student agreement in response to evaluation questions concerning the careers journeys document.

3.3. Guest lecturing

3.3.1. Live guest lectures

Following the six live guest lectures 84 responses from current students were received from the evaluation questionnaire. When asked to rate the graduate input out of five the mean score was 4.5 ± 0.5 . Ninety nine percent of students fed back positively (agreed or strongly agreed) that they found the session interesting, 87% thought it added context to the module, 81% thought the graduate enhanced the session and 89% would like to hear from more graduates in the future. For more detailed breakdown of these evaluation results see Fig. 2.

Qualitative comments obtained by the questionnaire were predominantly focused on the sessions being interesting and enjoyable, and providing insights into pathways/career opportunities post-university.

Positive feedback regarding the use of guest lecturers, especially those from industry, is common in higher education. This has been evidenced in a range of different disciplines from business (Riebe et al. 2013) to nursing (Zou et al. 2019). With regards to guest lectures, students fed back that they get the most from individuals who are good communicators, that are interesting/engaging, who can relate the topic to both curriculum and industry and can give relevant/specific 'real world' examples (Riebe et al. 2013). By using alumni, it was felt that authenticity, and the alignment to both curriculum and industry is enhanced. Because the graduates have been through the course, they are aware of the curriculum the students are engaging with and can give examples as to how they have then used this in the 'real world' post-graduation. This is supported by the work of Craig et al. (2020) who found that students preferred their guest speakers to be alumni from the course as they were more relatable.

3.3.2. Video snippets

Following the use of graduate video snippets in the teaching for two modules 15 responses were received from the evaluation questionnaire. When asked to rate the graduate input out of five the mean score was 4.5 ± 0.6 . Eighty percent of students fed back positively (agreed or strongly agreed) that they found the video(s) interesting, 93% thought they added context to the module, 93% thought the graduate enhanced the content and 87% would like to hear from more graduates in the future. For more detailed breakdown of these evaluation results see Fig. 3.

Only three qualitative responses were obtained in this evaluation, similar to the guest lectures, comments were regarding the insights into pathways/career opportunities post university. However, in addition students also reported that the videos helped with comprehension of module topics.

When comparing the results of the evaluation questionnaire between the live guest lecture and video snippets using a Mann-Whitney *U* test there were no significant differences in the evaluation responses $p > 0.05$. Although caution must be taken due to the divergent sample size ($n = 84$ live guest lecture, $n = 15$ video snippets) it is promising that when comparing the quantitative evaluations, the video snippets appear as valuable as the live guest lectures without the constraints of synchronising the availability of the alumni with the students' timetable. Previous research by Kong et al. (2022) reported positive effects on student engagement and satisfaction by embedding short 3–5 min videos created by graduates into preparatory materials for biochemistry laboratory classes, this aligns with our qualitative findings that the video snippets helped students with the module topics. This is despite the videos

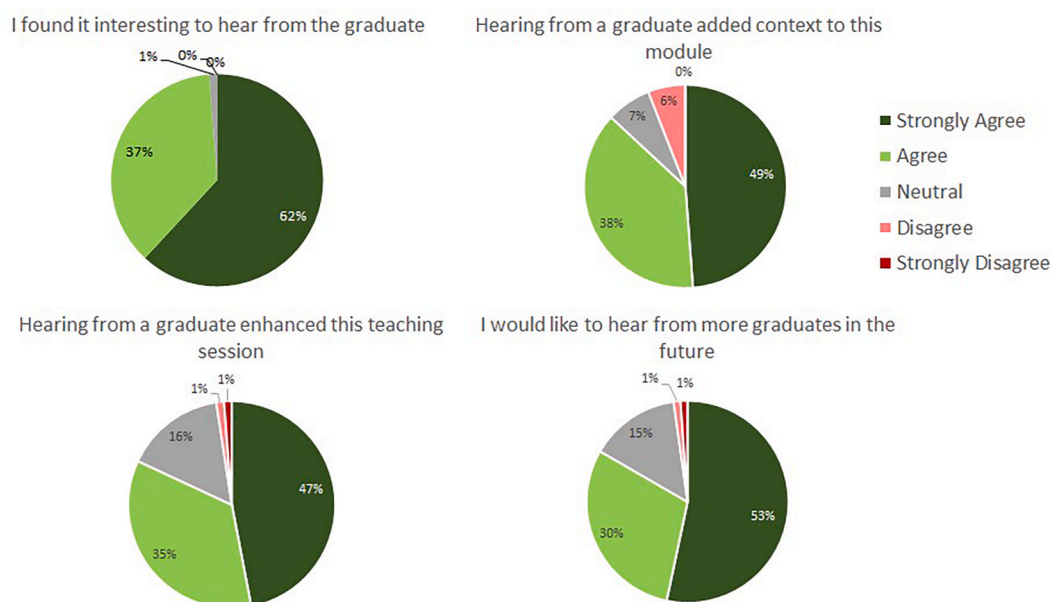


Fig. 2. Student responses to evaluation of live graduate guest lectures.

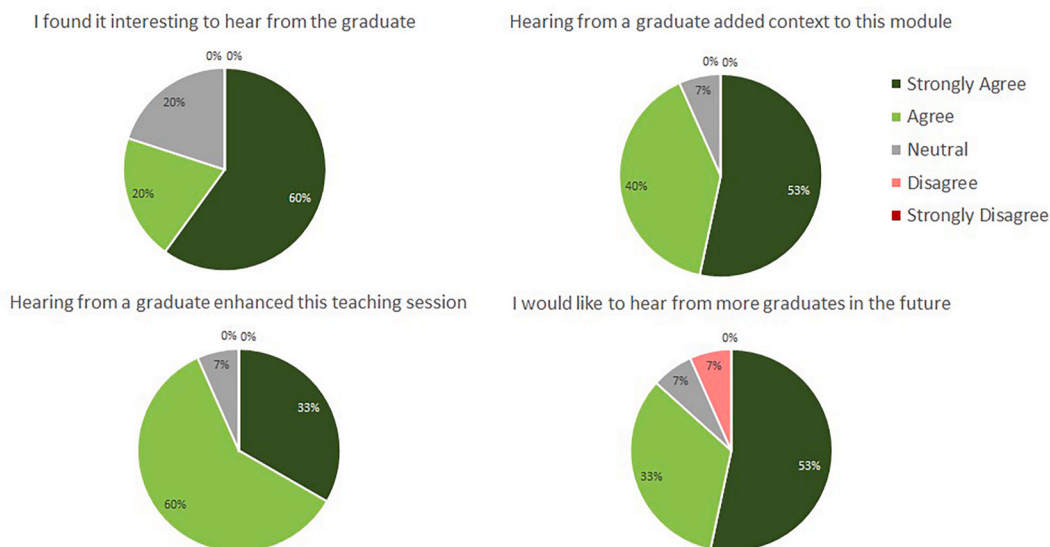


Fig. 3. Student responses to evaluation of graduate video snippets.

created in this project being longer in length (7–13 min) than Kong et al.'s. Previous research has advocated the use of shorter <6 min long videos to enhance student engagement (Afif 2020), although it is not just about the length, the pace of the video and the ability to pause also influences engagement (Aalioui et al. 2022). A recent systematic review by Noetel et al. (2021) showed that implementing additional video resources in teaching in higher education led to strong learning benefits (Hedges's $g = 0.88$). These benefits may in part be due to maximising the cognitive theory of multimedia learning by combining both visual and auditory information (Mayer, 2008). Videos also have the advantages of being able to be used asynchronously as well as synchronously allowing students more perceived control which can enhance motivation and help regulate cognitive load (Noetel et al. 2021).

3.4. Careers testimonial videos

A total of 68 students completed the anonymous feedback questionnaire. Of these 68 students 75% had a potential idea about a career they would like to pursue with the remaining 25% being unsure. Forty one percent of students wish to have a career in elite sport

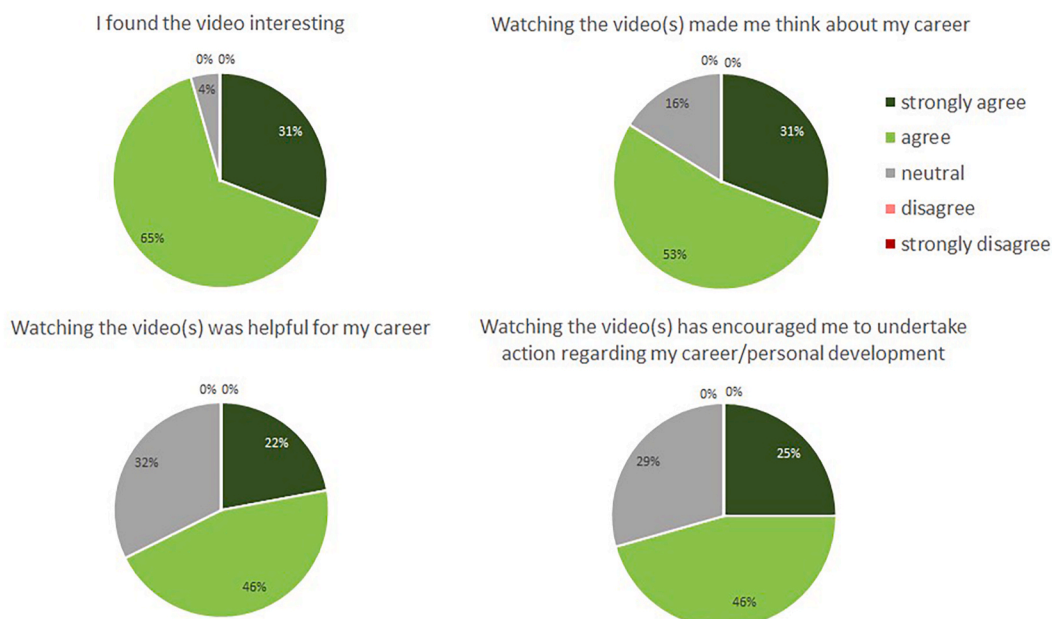


Fig. 4. Percentage agreement of students to evaluative statements concerning the careers testimonial video(s).

with 18% interested in physiotherapy, and 10% in education. When asked to rate the video(s) watched out of 5, the mean rating obtained was 4.2 ± 0.6 . Fig. 4 below illustrates the percentage agreement by the students with regards to evaluative statements about the video(s).

Qualitative comments obtained by the questionnaire tended to concern the fact that students found the videos informative, interesting, and relatable. In addition, several students requested more videos for more careers.

The career goals highlighted by this sample of students have some similarities with that of Spittle et al. (2021) who surveyed Australian SES students. Both the current sample and Spittle et al. (2021) identified elite sport, physiotherapy, and education as career pathways. The current sample produced a similar percentage interest in physiotherapy (18% vs Spittle et al.'s 19.6%), a higher level of interest in education (10% vs Spittle et al.'s 3.5%) and a higher level of interest in elite sport (41% vs Spittle et al.'s 5.5%). However, the range of jobs encompassed under elite sport in this study were broader than that of Spittle et al. (2021) who had separate categories for careers such as strength and conditioning (5.5%) and exercise physiology (7.4%).

The provision of 'careers advice' in higher education has been constantly evolving, discussed comprehensively in a review by Dey and Cruzvergara (2014) who highlighted "The mission of the career centre of the future will be to build meaningful connections through partnerships with employers, experiences, and mentors, and developing career communities of learners and networkers that will engage students and alumni for a lifetime." These authors support the notion that career advice is becoming more about connecting students to communities including that of employers and alumni. However, although university careers centres are constantly adapting to the changing needs of students, the level of engagement by students with these services is often poor. Bradley et al. (2021) report that less than half of all undergraduates surveyed engaged with the careers centre support during their studies. Bradley et al. (2021) also highlighted the importance of embedding careers support within degrees rather than relying on parallel support offered by a central university careers service. Based on the feedback from students above embedding careers testimonials from alumni could be a useful tool to do this.

3.5. Limitations

Although the four core elements of this project outlined above produced positive feedback the project is not without limitations. Several aspects of this project relied on engagement of the wider course teaching team in addition to this manuscript's authors. As noted in the methods above (section 2.4) despite offering solutions to staff's highlighted barriers to implementation (co-ordination of alumni availability and student's timetable) and a support structure put in place for them, only 2/7 staff added alumni engagement content to their modules. When developing course enhancements engagement of staff is as important as engagement of students. Staff fed back that the following factors influenced their engagement: lack of time, low priority for them, timetabling issues, and already use video content in modules so reluctant to add more. These factors are like those previously reported by Makunye and Pelsler (2012) behind staff apathy towards personal development programs. Despite staff being aware of the value for students, this factor may not necessarily be enough to encourage them to enhance their teaching. This factor could well be due to one of Makunye and Pelsler's (2012) additionally highlighted factors, namely a lack of reward or incentive. A discussion on the theory of work motivation is beyond the scope of this manuscript but it is important to recognise that not all academic staff will be willing/able to action teaching enhancements.

4. Conclusions

The embedding of alumni engagement enhanced student's knowledge of career options and pathways post-graduation. It also encouraged students to consider, and take action, regarding their future careers. Students engaged with content from alumni finding it interesting and requesting more in the future. It is recommended therefore that input from graduates should be embedded into undergraduate courses where possible.

CRedit authorship contribution statement

Katherine Elizabeth Burgess: Writing – original draft, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Patrick Maughan:** Writing – review & editing, Project administration, Conceptualization.

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