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Stebbing, Georgina ORCID logoORCID: <https://orcid.org/0000-0003-0706-2864>, Mackintosh, Chris ORCID logoORCID: <https://orcid.org/0000-0001-7798-5125>, Burden, Adrian and Sims, Dave ORCID logoORCID: <https://orcid.org/0000-0003-0152-866X> (2020) Webinars in distance learning - the key to student progression? In: HELMeTO - International Workshop on Higher Education Learning Methodologies and Technologies Online, 17 September 2020 - 18 September 2020, Bari, Italy (Virtual). (Unpublished)

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Webinars in distance learning – the key to student progression?

Stebbings, G.K.¹[0000-0003-0706-2864], Mackintosh, C.¹[0000-0001-7798-5125], Burden, A.¹[0000-0002-1105-312X] and Sims, D.¹[0000-0003-0152-866X]

¹ Department of Sport & Exercise Sciences

g.stebbings@mmu.ac.uk

1 Introduction

Distance learning (DL) typically assumes a constructivist approach to learning, whereby students actively construct their own knowledge through consultation and engagement with learning resources. Opportunities for collaborative learning and interaction between staff and students, both of which are necessary for effective social constructivism [1], are also often encouraged through online discussion forums, activities, emails and video calls.

The 5-year, part-time Sport and Exercise Science (Distance Learning) programme at Manchester Metropolitan University has been running for over two decades, recruiting approximately 40 new students each year. Students on this degree complete each subject unit consecutively in a synchronous manner, but the pace of their learning, and thus timing of engagement with online discussion forums and activities is asynchronous. Asynchronous learning poses a significant challenge for maintaining effective social interaction and a sense of community, without which DL students can feel isolated and are less likely to progress [2].

Webinars offer a convenient, accessible and cost-effective solution to this challenge by providing a synchronous opportunity for staff-student and student-student interaction, that both staff and students enjoy [3]. Webinars reportedly strengthen the social presence of DL students whilst simultaneously enhancing learning through the notion of the 'Zone of Proximal Development' [4], whereby students develop their learning and understanding from interactions with knowledgeable others [5]. Whilst webinar-based learning in traditional settings is associated with trivial improvements in educational attainment compared to face-to-face delivery [6], it remains unclear as to what extent webinar integration into DL might improve attainment. Furthermore, no studies to the authors' knowledge have yet investigated the impact of integrating webinars in DL on student progression, or the factors that may contribute to this.

The aims of this study, therefore, were to assess the effectiveness of webinar-based learning for unit attainment and student progression, and to gain insight into the factors that may contribute to improvements for students on the Sport and Exercise Science (Distance Learning) undergraduate programme at Manchester Metropolitan University.

2 Method

The local Ethics committee of Manchester Metropolitan University granted ethical approval for this study, which utilized two different methodological approaches to address our research questions. Firstly, a quantitative analysis of unit performance data for a single Level 4 unit over a 4-year period (Sept 2016-April 2020), which included two years prior to webinar integration (Pre) and two years post webinar integration (Post), was undertaken. Unit performance data included attainment and progression, as well as the number of webinars that were delivered, how often these were viewed and by what proportion of the student cohort.

For the second approach, an online survey was developed (Jisc Online Surveys, <https://mmu.onlinesurveys.ac.uk/the-use-of-webinars-to-support-distance-learning-in-support>) that comprised a maximum of 18 questions. Due to differences in webinar engagement, respondents were not required to answer all survey questions. Questions included those requiring responses to a 5-point and 10-point Likert scale, plus two open-ended questions asking participants about their experiences, or perceptions, of webinar engagement. Thus, both quantitative and qualitative data were obtained. A link to the survey was emailed to ~150 potential respondents, from which 50 responded and 49 gave their consent to take part (staff = 19; students = 30). Data from the online survey were exported from the Jisc online platform for subsequent analysis.

Data were analysed using Microsoft Excel and SPSS (v25, IBM Statistics), and unit performance was compared pre and post webinar integration using chi-squared tests or one-tailed independent t-tests, where appropriate, and reported as mean \pm standard deviation (SD). Quantitative survey questions were reported separately for staff and student groups using the median statistic. Responses to open-ended questions were subject to a simple thematic analysis and were reported according to their relative frequency to provide a deeper insight into experiences and perceptions of webinar-based learning. Alpha for all tests was accepted as < 0.05 .

3 Results

On average, $48 \pm 6\%$ of students engaged synchronously with the webinars. Asynchronous engagement with the webinars, via viewing recordings of the original webinars, was also evident with an average of 80 ± 3 views per webinar (range 54–156 views), completed by $44 \pm 11\%$ of the student cohort at a rate of 7 ± 3 views per webinar, per student.

Comparison of unit performance pre- and post-webinar integration revealed an 8% increase in mean unit attainment ($P = 0.03$), despite no differences in maximum attainment ($P = 0.36$; see Fig. 1). A significant reduction in the number of first time fails ($P = 0.02$) was also apparent, with minimum attainment significantly higher post-webinar integration (41%, $P = 0.003$; see Fig. 1). Ultimately, student progression post-webinar integration increased 11% compared to pre-webinar integration.

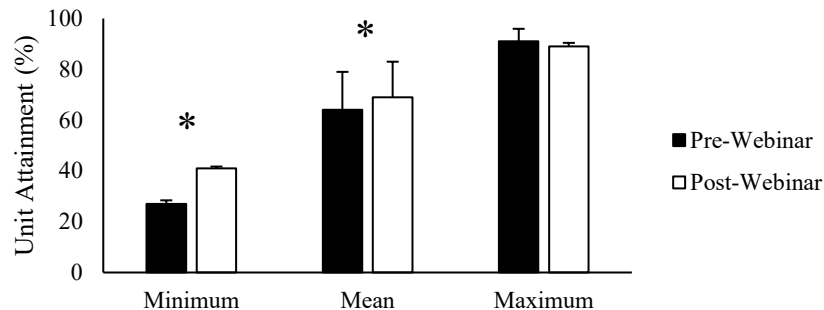


Fig. 1. Comparison of unit attainment between pre- and post-webinar integration. Data are mean \pm SD. * denotes $P \leq 0.03$.

Of the survey respondents, 93% of students reported attending webinars as part of their programme, whilst 51% of staff reported delivering a webinar as part of their teaching. Both students and staff rated the addition of webinars to the DL programme positively on a 10-point Likert scale (median = 9 & 8), with students rating the educational (8 & 7) and technological (8 & 6) quality of the webinars higher than staff. In response to the open-ended questions, both students and staff reported finding webinars useful for facilitating student understanding (60% & 26%) and enjoyed the opportunity for social interaction (37% & 42%). Technical issues, including poor sound quality and inexperience with webinar platforms were reported most frequently as the biggest challenges by students (23%) and staff (26%). Notably, staff training was listed as the primary factor (60%) that would encourage those staff yet to deliver a webinar to do so in future.

4 Discussion

The aims of this study were to assess the effectiveness of webinar integration for improving unit attainment and student progression, and to gain insight into the factors that may contribute to any improvements for DL students in sport and exercise science. Post-webinar integration, we observed an increase in mean unit attainment and student progression. In addition, staff and students both highlighted the opportunity for social interaction and effective facilitation of learning as primary factors for engaging with webinars.

Poor student progression and retention is widely reported across DL [2, 7], which has been attributed to feelings of isolation negatively affecting motivation to learn, amongst other factors [2, 7]. The opportunities for synchronous collaborative learning afforded by webinars encourages intrinsic motivation [8], and may explain the enhanced unit attainment following webinar integration observed here.

Interestingly, it appears that those students most at risk of failure benefitted from webinar-based learning to the greatest extent. Indeed, the observed increase in minimum attainment and reduction in the number of fails, rather than an increase in maximum attainment, contributed to the overall increase in mean unit attainment and improved student progression. Through interactions with more knowledgeable peers and

staff, the least capable students seem better able to develop the higher learning skills necessary to progress through our DL programme post-webinar integration [9]. Unsurprisingly, survey responses highlighted social interaction and facilitation of learning as primary factors for student engagement in webinars. Furthermore, as the webinar experiences of staff and students was overwhelmingly positive, integrating webinar-based learning for DL, particularly in sport and exercise science, is justified.

Nonetheless, webinar-based learning on our DL programme is low (5 of 15 units), which, based on survey responses, is attributed to a lack of training deterring staff engagement. Effective webinar-based learning is largely dependent on session design and appropriately-matched group sizes, network infrastructure and ability to use appropriate online platforms [3], emphasizing the need for appropriate staff training to maximize the benefits of webinar-based learning.

In conclusion, integration of webinar-based learning into sport and exercise science DL undergraduate programmes is beneficial for improving unit attainment and student progression, and is perceived positively by both staff and students. Considering the adoption of online and eLearning tools has been accelerated as a consequence of the current Covid-19 crisis, the results of this study are likely to have relevance beyond distance learning and identifies webinars as a potential tool for traditional campus-based programmes to support students at risk of failure in future. Nonetheless, before webinar-based learning can be fully integrated into any educational context, staff must receive suitable training.

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