

Using digital tools to encourage teamwork and establish distance learning communities

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Introduction

- Ulster University provides an IBMS accredited e-learning MSc programme in Biomedical Science.
- Students are from varied geographical backgrounds with many in full time employment and established in their profession.
- The formal delivery of modules within this programme is flexible permitting students to have a bichronous experience¹ i.e., blending self-learning and asynchronous approaches² with synchronous tutorial sessions.
- It is reported that distance learning students can feel isolated due to minimal opportunities to interact with their peers.
- Cooperative learning group activities would enhance students to collaboratively apply their acquired knowledge to critically evaluate real-world problem scenarios and develop higher order cognitive skills³.
- It has been reported that students do not recognise creative learning opportunities in biomedical science programmes and as such educators have the responsibility to embed creative learning activities within the curricula⁴.



Objectives

To engage students and build online learning communities, to nurture the development of confidence in digital capabilities and gain an appreciation of digital and collaborative transferable skills, through online synchronous group activities.

Methods

- Students (n=20) enrolled in a Microbiology module (30 credits) were divided into groups of four to address a problem-based assessment activity relating to current global infection topics.

Problem-based topics

• The online group task required the use of digital tools to critically evaluate these topics & prepare a slide deck learning resource for their peers.

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Digital tools used

- Individual student video & written reflection.

Strategy	Prepare	Output	Reflect
Plan Mode of Communication Meeting Dates Research Strategy Appoint a Leader	Slide Deck (20 slides) - Up-to-Date Evidence - Epidemiological Data - Critical Evaluation - Reference Style - Aesthetical layout	How to deliver the presentation? - Slide Deck (PPT) - Webinar (BBL Ultra)	Evaluate Fears Challenges Learning Points Future Video (FlipGrid) & Written

- Students (n=14) completed a pre- and post-assignment survey to evaluate their perspectives on the development of digital skills and skills most valued by employers. (Ethical approval Biomedical Sciences Research Ethics Filter Committee, Ulster University (FCBMS-19-091))

Results

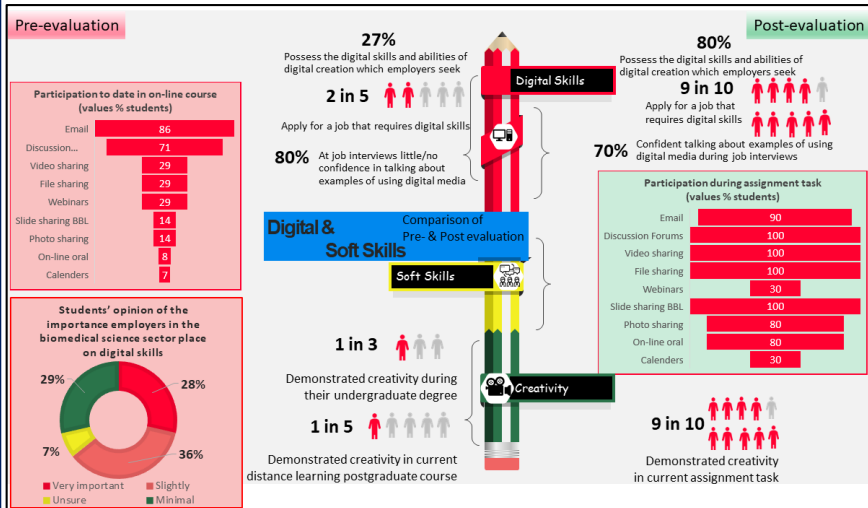


Figure 1: Analysis of pre- and post assignment digital skills survey

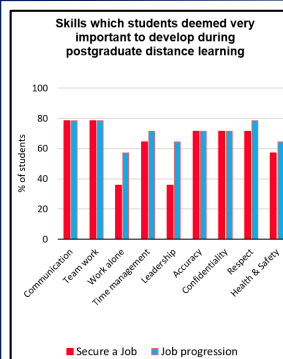


Figure 2: Student feedback (n=14) on important skills development

STUDENT FEEDBACK

I enjoyed using these platforms and feel empowered to use new tools in the future workplace.

Nice to have this kind of peer interaction as the opportunity doesn't often arise during distance based learning

Taking the BBL is not something I am used to doing as I am the youngest and least experienced member of staff in the lab I work in and so I feel I learned a lot from the experience and it gave me confidence

I feel I will be able to create a presentation for continuous professional development purposes for CDRX much easier now I have gained vital skills for making it

I am very surprised at how much I enjoyed the whole assignment and I really do hope that I get to work on similar assignments at some point during the remainder of this masters programme

will now try and produce slides for CPD presentations in my workplace

took some time to get comfortable with the idea of working with people I did not know and would not meet

As the NICE progresses towards becoming a paperless workplace it is important to have confidence in the use of digital communication skills

I will be able to create a presentation for continuous professional development purposes for CDRX much easier now I have gained vital skills for making it

Developed skills for use in the workplace

Give everyone a chance - different people have different strengths

Figure 3: A selection of reflective comments from students following completion group task

Discussion & Conclusion

- The introduction of group-based activities into a distance learning course was initially met with trepidation by students (Figure 3)
- On completion of the task students reported they
 - enjoyed participating in the assessment task which enabled them to acquire a deeper knowledge of the subject area & create a valuable learning source for themselves and their peers
 - felt more confident in applying for jobs which required digital skills (Figure 1) having used new digital tools.
 - demonstrated creativity during the group task (Figure 1)
 - developed collaborative, digital, reflective skills and soft skills (Figure 2) which they could implement in their current workplace (Figure 3)
- Such online tasks helped build online learning communities and relationships which students reflected were supportive and reported these relationships will continue throughout the next stages of the MSc degree programme.

In conclusion, the use of digital skills and educational strategies to promote the establishment of online learning communities by means of group-based activities should be encouraged, particularly amongst healthcare professionals who provide online-tutor roles.

¹Martin et al., (2020) available from <https://er.educause.edu/articles/2020/9/bichronous-online-learning-blending-asynchronous-and-synchronous-online-learning> (last accessed 09 Feb 2022)

²Tareen H & Haand MT (2020). A case study of UTM post-graduate student' perceptions of online learning: Benefits & challenges. *IJARP* 4(6): 86-94

³Brame CJ & Biel R (2015) available from <http://cft.vanderbilt.edu/guides-sub-pages/setting-up-and-facilitating-group-work-using-cooperative-learning-groups-effectively/> (last accessed 09 Feb 2022)

⁴Kim AM et al., (2019) Why don't students recognize creative learning opportunities in a biomedical science program? *Biochemistry and Molecular Biology Education* 47(6): 656-68