Using Digital Tools: inclusive assessment as learning

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Abstract

In this paper we describe the design and delivery of a pilot team-based peer-assessed activity delivered in year one of the MBChB, the Medicine and Surgery degree programme. There is a desire to incorporate more inclusive alternative assessment into the MBChB, but there is little precedence for this given the regulatory landscape in which the medicine degree sits and the demands of the programme. We used digital tools to scaffold the activity and assessment, and here we outline how learning technology was embedded to respect student differences, facilitate working together rather than in isolation, and promote learning.

Introduction

This paper reflects on changes made to formative assessment in the first year of the MBChB (Batchelor of Medicine, Batchelor of Surgery) programme at Lancaster Medical School (LMS). We wanted to make the assessment more inclusive and engaging and build in more opportunities for reflection and feedback to enhance learning. Being inclusive by design means designing curricula that facilitate multiple means of engagement for students, multiple means of representation of the material, and multiple means of action through learning or expression through assessment. This anticipatory approach removes barriers to learning and reduces the need for ad hoc adaptations or adjustments for inclusivity. Technology can be a useful tool to enable students to access content, engage with learning, and demonstrate they have met learning outcomes. Curriculums that take seriously the principles of Universal Design for Learning (UDL) support learner preferences and meet the needs of learners while minimising the need for adjustments to plans and content during delivery. An Inclusive Pedagogical Approach in Action (IPAA) incorporates and builds on the principles of UDL by encouraging educators to consider how their pedagogical approach supports deep learning and creates meaningful learning opportunities through a more inter-connected learning community. Technology facilitated content delivery, assessment and

feedback, and supported directed independent learning (DIL) (Thomas et. al., 2015) and inclusion, in synchronous and asynchronous settings.

MBChB Curriculum Structure and the Role of Special Study Modules

The MBChB is a 5-year programme split into two parts, pre-clinical and clinical, with a student intake of129. The programme is highly interdisciplinary and includes practical skills training alongside academic content. The curriculum is dense, and assessment points are limited. Assessment is predominantly written examination (a mixture of multiple choice, short answer, and single best answer questions) and Applied Knowledge Test/OSCEs and is therefore only somewhat applicable to practice and not very inclusive, despite being high stakes for students (Sambell et. al., 2012).

The student selected component of the MBChB at LMS, Special Study Modules (SSM), runs across years one and two. SSM is designed to give students the opportunity to explore their interests, while developing professional skills (particularly communication and interpersonal skills, and ability to use information effectively and safely) and professional knowledge (particularly around clinical research and scholarship), as specified in General Medical Council's (GMC) *Outcomes for Graduates* (GMC, 2025). The programme is held as a model of best practice in collaborative teaching across the department, learning development team, and faculty librarians. There is a focus on skills development in year one and summative assessment in year two.

The formative assessment in SSM year one aims to promote learning and encourage growth. Student engagement in the assessment was low. Student feedback indicated that the students did not always understand how the previous assessments aligned with the teaching or with programme level outcomes. We resolved to review the formative assessment to make it more meaningful and inclusive. Here we focus on one piece of formative assessment, which we changed from a peer-reviewed abstract writing activity (delivered online with a focus on individual DIL), to a team-based poster task (delivered in person, with a focus on team-working).

Rethinking formative assessment

We wanted to make the assessment authentic to the summative SSM assessment in year 2 and better aligned to the GMC Outcomes for Graduates. We also wanted to make the learning and assessment more inclusive. We used an anticipatory approach to inclusion to accommodate diverse student needs, which may or may not be formally identified. The assessment design took seriously the principles of Universal Design for Learning (UDL), which supports learner preferences and meets the needs of learners while minimising the need for adjustments to plans and content during delivery. We developed the teamwork elements of the task in line with an Inclusive Pedagogical Approach in Action (IPAA), which incorporates and builds on the principles of UDL by encouraging educators to consider how their pedagogical approach supports deep learning and creates meaningful learning opportunities through a more inter-connected learning community (McGhie-Richmond & de Bruin, 2015).

Using technology to facilitate working together while respecting student differences

The IPAA approach is an anticipatory approach to inclusive learning that creates learning environments that are available to all learners, avoiding ad-hoc adjustment for any learners experiencing difficulties. It encourages participation and co-creation by focusing on what learners can do and not on what they cannot. Formative assessment and reflection support learning (Florian & Black-Hawkins, 2011; Florian 2015). The activities we designed were structured around an initial workshop, focused on skills building and task management, and final conference style lightning poster presentations, with built-in peer-review and self-reflection. Technology was integral to the in-person delivery of sessions and facilitated asynchronous DIL and team-based learning.

Inclusive practice in the virtual learning environment

Students were enrolled on a Moodle space which was more than a repository for resources and was treated as an inclusive learning space in its own right. We redesigned the space to be more visually appealing and user friendly. The IPAA approach inspired us to include a wider range of interactive activities than in previous years that supported both whole group and independent learning. In line with the IPAA approach, the space was accessible from various devices to support inclusion and flexibility for asynchronous and synchronous activities. Students could monitor their progress via the activity completion feature in

Moodle. The "restrict access" function scaffolded learning materials and skills development. Access to resources was restricted by specific criteria so students only saw materials that were relevant to their learning journey (see Figure 1). This tailored access reduces cognitive load and overwhelm, a common problem with crowded online learning spaces.

Figure 1: This figure shows that the Week 2 materials had the restrict access by date function applied which tailored student access to material. Activity completion was turned on for 6 activities within this section for students to be able to monitor their progress as shown in the bottom right-hand corner. The image of the partially built gingerbread house reflected the scaffolding across each week of the module; the house began as loose Lego bricks and by the final week of the module was a fully completed two storey house.

All resources were made digitally accessible using Blackboard Ally, which uses colour-coded indicators to show when resources are compliant with Web Content Accessibility Guidelines (WWWC, 2024). This supports inclusion and student agency by enabling effective translation of resources into alternative formats (e.g. MP3, tagged PDF etc.). This anticipatory approach supports UDL by providing opportunities for autonomy and optimising access to resources and tools (CAST, Inc., 2024).

The IPAA approach helped us think about using formative assessment as learning. PDFs of posters were available to view on Moodle during the poster presentations for improved accessibility through multiple means of representation. Posters were peer-reviewed via a Moodle questionnaire. Paul Chin highlights that peer assessment can be effective assessment as learning, describing that students can "critique and review someone else's work and thereby reflect on their own understanding or performance" (Chin, 2016, p.13). Developing skills in giving and responding to feedback features in the GMC *Outcomes for Graduates* and this activity provided an opportunity to scaffold these skills (Carless & Boud, 2018). The questionnaire included multiple choice questions and asked for additional feedback using a feedback framework to support feedback that was meaningful, specific, and actionable (Nicol & Macfarlane-Dick, 2006).

Respecting student differences in teamwork

Students self-selected roles within their teams (e.g. organiser, poster designer, presenter) which supported inclusion through self-differentiation (Morris et. al. 2019). Digital tools supported each student in their role and enabled collaborative working during in-person activities and asynchronously. This offered students multiple means of engagement with the task (CAST, Inc., 2024) and provided opportunities for an interconnected learning community. The whole group used Mentimeter, a collaboration and polling solution, to share ideas about effective team-working, and each team then agreed ground rules.

In line with IPAA, students used technology to self-organise and work flexibly within the group, online or in person. Each team set up and used an MS Teams space. While some learners have used Teams before, they are often passive users. Asynchronous, effective teamwork requires more active use of MS Teams features so we wrote a guide to help students make best use of these. Teams facilitated effective group work as students used it to cooperate, socialise and share information, as well as to collaborate and create their posters (Salmon, 2005; Carnell, 2018). We recommended MS Planner for organising group activities. The use of these popular online tools supports students' preparation for the workplace and meets GMC Outcomes for Graduates as well as Lancaster University graduate-level outcomes (Lancaster University, 2025).

Posters were designed using MS PowerPoint or Canva and presented by one team member, multiple team members, or pre-recorded using Planet eStream.

How students demonstrated meeting the learning objectives (LOs)

Opportunities for reflection and accountability through peer feedback and self-reflection were meaningful, fully integrated into the design and delivery of the task, and constructively aligned with LOs (Biggs, 2003). Alongside peer-feedback in Moodle, there was time at the end of each poster presentation for questions and comments from the audience. Students also completed a self-reflection task on MS Forms, which asked them about what they had achieved, their participation in the team, and asked them to highlight something they did well and something they want to develop.

Student feedback and feeding forward

Students completed a module evaluation on Moodle. Their feedback reflected their engagement and enjoyment during the week. They were positive about teamworking and meeting and working with people they had not met previously. They asked for more time and space to build the team in the initial workshop which we have planned into the next iteration of the activity. Some students found the process of giving feedback on each poster repetitive so we will move this from Moodle and into Mentimeter, which will mean the feedback can be shared with teams live in the session. This year we will also use less PDFs in Moodle and use library linked resource lists to enhance accessibility.

Conclusion

Technology was embedded in the design and delivery of this formative peer-assessment activity to facilitate collaboration and respect learner preferences, strengths and needs. It encouraged students to engage with the learning materials and with each other while challenging them to develop digital and communication skills in an inclusive environment.

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