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**Benchmarks for**

**the use of Technology in Learning and Teaching**

Working Version 1.0 (January 2019)

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The Benchmarks for the Use of Technology in Learning and Teaching incorporates the openly licensed 3E Framework for technology-enhanced learning developed by Keith Smyth. The 3E Framework and associated guidance which is incorporated in adapted form in this document was first published under a Creative Commons license by Edinburgh Napier University, Edinburgh, Scotland 2011, in their Benchmarks for the Use of Technology in Modules (authored by Smyth, K., Bruce, S., Mainka, C., and Fotheringham, J.)

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## 1. Introduction

The **Benchmarks for the use of Technology in Learning and Teaching** provides guidance and exemplars for the effective use of the university’s new Virtual Learning Environment (hereafter referred to as ‘learning environment’ or Brightspace) and other technologies for learning and teaching in pedagogically sound and evidence-based ways.

The benchmarks and associated guidance and exemplars defined and provided here are aligned with the university’s Learning and Teaching Enhancement Strategy, and will enable the embedding of the Learning and Teaching Enhancement Values in how we use the learning environment and other technologies to support learning, teaching and assessment.

**Note**: the Benchmarks for the Use of Technology in Learning and Teaching is a working document, which will evolve as colleagues begin to engage with and utilise Brightspace ahead of teaching formally being supported in the new learning environment from the start of the Academic Year 2019/2020. This is **Version 1.0** of the benchmarks document.

**1.1 Key components of the Benchmarks**

The Benchmarks for the use of Technology in Learning and Teaching, in current Version 1.0, comprises five key components and a mapping template which are outlined below:

1. Overview of the university’s **Learning and Teaching Enhancement Values**.
2. Definition of the **learning environment benchmarks for the module and unit spaces** in Brightspace that have been approved by the university. This includes the Threshold benchmark that establishes the minimum requirements for how modules and units will utilise Brightspace and associated technologies to support learning and teaching, and the Developed and Exemplar benchmarks for reflecting a further embedding of the Learning and Teaching Enhancement Values in the use of technology.
3. Overview of the evidence-based **3E Framework** for guiding the design and implementation of technology-enhanced learning activities for face-to-face, blended and online contexts, and informing the selection of appropriate technologies.
4. A mapping of **illustrative examples, for a broad range of learning, teaching and assessment activities**, that are aligned to the 3E Framework and which are intended to provide ideas for how you may use the learning environment and other associated technologies to support and engage your own learners in appropriate ways.
5. **A mapping of the university’s Learning and Teaching Enhancement Values to a range of the tools and features in Brightspace**, and aligned to the 3E Framework, to provide further guidance contextualised specifically to the new learning environment.
6. A **planning matrix** that colleagues can use in conjunction with the benchmarks and mappings above, to identify how they can utilise the learning environment and other technologies in their own modules and units in ways that are consistent with the guidance provided in the benchmarks document, and with the Learning and Teaching Enhancement Values that are relevant to their modules or units.

**2. Learning and teaching enhancement values**

The Benchmarks for the use of Technology in Learning and Teaching, including the associated guidance and exemplars presented in this document, are informed by and aligned with the Learning and Teaching Enhancement Values in the university’s Learning and Teaching Enhancement Strategy 2017-2021. The LTES summarised here:

<https://www.uhi.ac.uk/en/learning-and-teaching-academy/supporting-innovation/learning-and-teaching-enhancement-strategy/> and the full strategy downloadable from:

<https://www.uhi.ac.uk/en/t4-media/one-web/university/learning-and-teaching-academy/files/other-docs/learning-and-teaching-enhancement-strategy-2017-2021.pdf>

In the **learning environment benchmarks for module and unit spaces,** and in the associated guidance and exemplars provided, you will see specific references to the twelve Learning and Teaching Enhancement Values and how they can be embedded in how we use the learning environment and other technologies to support learning, teaching and assessment.

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| **Value** | **Ethos** |
| **Learning for**  **employment** | We will engage our students in learning activities and experiences that reflect and replicate how they will work and collaborate in the vocation, profession, or field they are preparing for. As a student progresses through their chosen unit, module or programme, they will engage in activities that will help them to further transition into the working environment. |
| **Learner choice**  **and personalisation** | Students will be engaged in helping to shape and create their learning through choice and negotiation relating to the individual and collaborative activities that they undertake. Wherever possible this should extend to what students focus on and produce for their assessed work. |
| **Providing a connected learning experience** | We will create opportunities within and through the curriculum for students to engage and learn with peers inside and across cohorts, to engage with the professional and scholarly communities to which they belong or will come to join, and to engage within wider learning communities locally and beyond. |
| **Evidence-based educational practice** | Our approaches to learning, teaching and assessment will be informed by existing scholarship and research relating to effective educational practice, through feedback received from our students and evidence relating to their engagement and success, and through staff undertaking their own educational scholarship and research. |
| **Engaging our**  **students as researchers** | We will engage students in research-based activities appropriate to their subject and level of study, including discovery and enquiry based learning. Research-based learning and teaching will become more prominent as students progress throughout levels of study, with an increasing focus on students undertaking research projects that have value for groups, communities and contexts beyond the university. |
| **Assessment and**  **feedback for learning** | Assessment practice will be rich and varied, and place an emphasis on students undertaking forms of assessment that present relevant learning opportunities. Formative assessment and feedback should allow students to reflect upon and refine their work, with feed forward opportunities supporting students in making decisions in how they progress within their studies. |
| **Active and creative**  **use of technology** | Will be embedded throughout learning and teaching to support active individual and collaborative learning, including allowing students to have meaningful and connected learning experiences regardless of their location or how their curriculum is delivered. This will incorporate co-creative approaches to learning within which students use technology to create and share digital resources, and to develop their digital literacies. |
| **Integrated and sustainable teaching practice** | More integrated and sustainable approaches to learning, teaching and assessment will be enabled through practices including: designing assessments that bring together work from related units and modules; using blended approaches to engage students prior to and between face-to-face classroom or online sessions; and repurposing relevant content and resources. |

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| **Harnessing open**  **education approaches** | Developing online and other open education practices and approaches to support and enhance learning and teaching, to use, create and share open educational resources, and to widen access to education including within our local communities. |
| **Supporting the**  **learner as an individual** | Our learning, teaching and assessment practices will ensure that all students have the opportunities and support they require to succeed, and that diverse and individual student needs are met through inclusive approaches to curriculum design and delivery, and contextualised personal and professional development. |
| **Reflective practice and continuous improvement** | At individual, team, departmental and institutional level we will review the effectiveness of our teaching practices, reflect on the potential for improvement and actively plan for a better educational experience for current and future students. |
| **Supporting professional development in learning and teaching** | We will provide a range of opportunities for our educators to engage in relevant professional development activities that are focused on enhancing and sharing effective learning and teaching practice, and which are open to all colleagues who directly support student learning. |

## 3. Learning environment benchmarks for module and unit spaces in Brightspace

A set of learning environment benchmarks for module and unit spaces within Brightspace have been approved by the university. The benchmarks comprise three broad descriptors, or categories of use, relating to different ways or extents to which the learning environment and associated technologies can be used to support learning, teaching and assessment in ways that reflect an increasing embedding of the university’s Learning and Teaching Enhancement Values through technology-enhanced educational practices.

The three benchmarks – Threshold, Developed and Exemplar – are defined below:

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| **Benchmark** | **Requirements** |
| **Threshold** | To encompass all essential module and unit information, guidance to support effective learning, and ‘minimum presence’ requirements as outlined in the [**Brightspace VLE Checklist**](http://staffresources.uhi.ac.uk/support_portal/resources/enhancing-learning-environment/index.html)  And:  A minimum of two simple and straightforward opportunities for active online student engagement either with the content of the module, with supportive media, for self-reflection, and/or for peer interaction. This is congruent with the LTES value ‘**Making active and creative use of technology’**.  The 3E Framework as outlined in sections 4 and 5 provides guidance and illustrative examples at the Enhance stage of the 3E Framework that exemplify what simple but effective opportunities for active online engagement can comprise.  **Meeting the Threshold benchmark above is the mandatory minimum requirement for any module or unit in Brightspace** |

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| **Benchmark** | **Requirements** |
| **Developed** | Module and units aligned with the ‘Developed’ benchmark will encompass the ‘Threshold’ requirements outlined above, in addition to evidencing embedded pedagogic practice in relation to the Learning and Teaching Enhancement values of:   * Assessment and feedback for learning * Providing a connected learning experience; and * Supporting the learner as an individual. |

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| **Exemplar** | Module and unit spaces which exemplify advanced practice in blended and online engagement in learning and teaching through meeting the requirements of Developed, in addition to evidencing the embedding of the LTES value of ‘Learner choice and personalisation’, and **one or more** of the values:   * Learning for employment * Integrated and sustainable teaching practice * Harnessing open education approaches * Engaging our students as researchers |

In engaging with or working towards embedding technology-supported learning and teaching practice in line with one or more of the benchmarks, it is important to recognise:

1. The benchmarks are not intended to reflect of an overall ‘standard’, relevance or robustness of learning and teaching within modules and units, but instead to inform and reflect the extent to which the learning environment and other associated technologies are being used in to support learning and teaching.
2. Similarly, as the benchmarks relate specifically to the use of the learning environment and associated technologies in learning in teaching, it is also important that the benchmarks are not intended or interpreted as an indication of the overall nature, quality or effectiveness of learning and teaching, as effective practice and engaging learning and teaching will also be occurring in the classroom, field, lab, workshop, studio and other educational environments.
3. The benchmarks are not intended to reflect a continuum of practice in which the ‘Exemplar’ is presented as an ideal. Instead, the ‘Threshold’ benchmark is intended to encompass a level of good technology-enhanced practice that is relevant to all modules and units, with the ‘Developed’ benchmark representing a significant further development of good practice specifically in relation to how technology is being used to embed particular LTES values. The ‘Exemplar’ benchmark is one that may be most applicable at more advanced levels of study, or in heavily blended and fully online learning and teaching, where it would be appropriate for at least some of the more aspirational LTES values indicated above to be embedded in technology-enhanced learning and teaching.

## 4. Overview of 3E Framework (Enhance, Extend, Empower) for technology-enhanced learning

To guide decision making about how to use technology in learning and teaching in ways that are relevant to the discipline, level of study, and experience of staff and students, the **Benchmarks for using Technology in Learning and** **Teaching** includes (below and in section 5) an adapted version of an established framework for designing technology-enhanced learning that is widely used in in the context of educational policy and practice, curriculum design, and staff development in the Further Education and Higher Education sectors.

The 3E Framework is based on an Enhance-Extend-Empower continuum, with illustrative examples of tried and tested approaches to using technology in simple-but-effective ways that increase active engagement in learning (Enhance), through to uses of technology that give students more responsibility for key aspects of their learning (Extend), and to underpin more sophisticated, authentic activities that reflect the real world, professional and vocational environments for which learners are preparing (Empower).

As an example, a possible application of the 3E Framework for harnessing technology to encourage early engagement in key concepts, at each of the 3E stages, is provided below:

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| **Enhance** | **Extend** | **Empower** |
| Adopting technology in simple and effective ways to actively support students and increase their activity and self-responsibility | Further use of technology that facilitates key aspects of students’ individual and collaborative learning and assessment through increasing their choice and control | Developed use of technology that requires higher order individual and collaborative learning that reflects how knowledge is created and used in the professional environment |
| **Encouraging early engagement in key concepts** | | |
| Have students take turns in defining one or two key terms or concepts for each week for inclusion in an online class glossary (e.g. in a wiki) | Have students work in pairs to create an online guide to a particular topic (e.g. a ‘scavenger hunt’ of places on the web for peers to explore) | The use of online resources (collaborative spaces, links to readings, video clips) that students can use in case and problem based learning tasks |

Within the 3E Framework, a ‘small blends’ approach is suggested as the initial starting point for beginning to make active use of technology in modules and units, in ways consistent with the requirements for the Threshold benchmark defined in the previous section.

In considering what the 3E Framework, including the illustrative examples provided, generally indicates about the kinds of changes to learning, teaching and assessment practice that can be effectively supported through technology, the following should be kept in mind:

1. Although the 3E stages can be seen as a continuum of change in technology-enhanced learning and teaching practice, they should not be viewed as mutually exclusive. In any single unit module context, there may be a range of learning activities that align with any of the three stages within the Framework.
2. Similarly, although the 3E Framework is most likely to be applied within a modular or unit context, it can equally be applied at programme level where common technology-enhanced approaches are used across modules, or to support collaboration and progression to more advanced learning across programme stages.
3. In being part of a continuum the 3E stages are not clearly distinct categories, and it is to be expected that some technology-enhanced activities will blur the boundaries between one stage and another. This point perhaps applies particularly at the Enhance and Extend levels, and maybe less so at Empower.
4. Where students are new to a topic, and likely to be new to or relatively unfamiliar with the subject matter, then activities at primarily the Enhance stage are often going to be most appropriate. Similarly for students newly enrolled on a programme of studies, for example first year undergraduates, a balance towards predominantly Enhance level activities may be more appropriate initially.
5. Enhance activities can work well in any subject at any level of study. In encouraging the development of learner autonomy and other key skills and attributes required in the workplace, an increase in Extend and Empower activities is more appropriate.
6. The 3E Framework does not promote the Empower level as an ideal, and an important part of the ethos of the framework is that tutors and their students will start from (and may end up at) different points on the 3E continuum in terms of applying and using technology in a particular learning and teaching context.
7. If the tutor is doing a lot of work at Extend, then aiming for the Empower stage in some aspects of what they do would be very worthwhile. However, if a tutor wants to begin by Enhancing several aspects of what they already do, then this is an equally valuable step in the adoption of technology-enhanced learning.
8. As students transition along the 3E continuum the tutor is relinquishing more control and responsibility to their learners. While this brings benefits, it can take adjusting to and requires the tutor to be comfortable with assuming a facilitating role or, for some kinds of activities, a co-learning role (e.g. in student-led seminars).

**5. Learning and teaching activities and 3E Framework matrix**

The matrix below provides illustrative examples of technology-enhanced approaches and interventions for a range of common learning, teaching and assessment activities, from the simple but effective (Enhance) through to those that are more learner-centric or intended to support more sophisticated, or deeper, forms of engagement in individual and collaborative learning (Extend and Empower). The examples below are evidence-based, having been developed and/or applied through the use of the 3E Framework in a range of educational contexts.

The examples are intended to provide you with ideas for how you may use the learning environment and other associated technologies to support and engage your own learners in appropriate ways, or which you could tailor or adapt to your own modules and units.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Enhance** | **Extend** | **Empower** |
| **Learning and teaching activities** | Adopting technology in simple and effective ways to actively support students and increase their activity and self responsibility | Further use of technology that facilitates key aspects of students’ individual and collaborative learning and assessment through increasing their choice and control | Developed use of technology that requires higher order individual and collaborative learning that reflects how knowledge is created and used in the professional environment |
| **Essays** | Create a series of short weekly or periodic announcements (e.g. using the learning environment announcement tool) that tell students where you expect them to be in the essay research/writing process by the end of that week. | Create a short 4 or 5 item self-test quiz on a particular topic that ‘releases’ an example of a good essay on successful completion  Provide online spaces for formative tutor and peer review of drafts. | Have students engage critically and directly with the public knowledge base in their subject area by having them produce essays as critical blog posts, or as accurate scholarly pieces for online resources like Wikipedia. |
| **Groupwork and**  **groupwork**  **management** | Make the group working more manageable and ‘visible’ by having each group post a weekly update of progress to a private discussion forum visible to the group and tutor. | Consider the use of wikis or other collaborative document tools for the authoring of group reports to aid version control, provide a space for formative feedback and to see the pattern of individual contributions. | Use wikis and other online spaces to allow peer review and assessment of group reports (e.g. reviewing a report online, then completing a peer review survey in the learning environment). |
| **Lectures** | Provide skeleton notes online for students to explore ahead of the next face-to-face or online lecture, and to assist with their note taking in the lecture itself. | Have students work individually or in small groups to prepare a mini presentation slot on a particular topic as part of an upcoming face-to-face or online lecture. | Provide skeleton lecture slides for small groups of more advanced students to research and complete as the basis for a lecture they facilitate or co-facilitate, either for their peers or for students at an earlier stage. |
| **Tutorials**  **(preparation and**  **participation)** | Provide links to online case studies, online readings or news clips for students to explore ahead of discussion in class. | Have students work individually or in pairs in sourcing relevant case studies or resources to be shared online (via a discussion forum, wiki, social bookmarking space, or other collaborative document) and engaged with prior to a tutorial. | Have students work individually or in small groups to produce an online case study on an allocated topic to be presented in the learning environment, or other digital space, prior to online or face-to-face tutorial sessions. |
| **Seminar**  **participation** | Provide a discussion forum for students to post follow-up comments (queries, issues that are still not clear) to that week’s face-to-face or online seminar, to be picked up during first part of the next week’s lecture or seminar session. | Encourage more equal engagement in seminars by having students take turns (in pairs or small groups) to produce a summary of that week’s face-to-face or online seminar that is posted to the learning environment, perhaps with a follow-up question to be tackled by the rest of the cohort. | Have students work in pairs or small groups to design and lead online seminars for particular topics, weeks or units, with guidance from the tutor on their proposed topic and approach. |
| **Making teaching**  **more interactive** | Use copyright cleared online video and multimedia clips, or other interactive open online resources (OER) to reinforce points and examples in face-to-face or online lectures, seminars or workshops. | Bring guest experts into discussion forums or live virtual classroom webinars for guest speaker spots, lectures or Q&A sessions. | Have groups of students make short audio or video recordings, to share within or via the learning environment, relating to particular topics, issues or concepts. This could be as part of their participation in online learning activities for a module or unit, or produced and shared as part of their formal coursework. |
| **Supporting large cohorts** | Direct students to use ‘general questions’ discussion forums to handle any general, no-confidential questions about the subject matter or coursework, so that the tutor or lecturer’s answers to common questions are there for all to see. This approach may also encourage peer support in large groups. | Use online spaces in the learning environment, including discussion forums or virtual classroom spaces, to bring associate tutors or more experienced peers into the cohort as part of a broader team teaching or student mentoring arrangement. | Where possible use online tools, spaces and resources to support creative and authentic projects that drive collaborative learning from the outset, thus reducing the reliance on teacher-led ‘instruction’ in large groups. |
| **Student liaison and representation** | Use the option within standard online module or student feedback surveys to include open ‘feed forward’ questions that can be used to enhance learning and teaching and/or provide additional online guidance for future cohorts. | Use a discussion forum in the learning environment (anonymised or not) to allow students to reflect on and articulate views on the effectiveness of module or unit delivery, ask questions that ‘link forward’ to what comes next in their course of studies, and suggest or provide input into upcoming learning activities. | Support student-staff consultation and learning enhancement activities through more open and visible means for participation, with a collaborative online area where agendas and relevant documents can be shared and questions raised in advance, and where videoconference or virtual classroom tools can allow remote participation in joint student-staff consultations and programme planning meetings. |
| **Self-testing** | Use short online multiple choice style self-tests to allow students to gauge their understanding of key terms, concepts and topics at important points during their module or unit. | Link online self-tests to the release of different sections of material including model answers to common questions or the ‘tutors view’ on complex or contentious issues. | Have students collaborate in designing online self-tests that can be reused with future cohorts, perhaps as part of their own assessed collaborative work. |
| **Encouraging timely engagement in key concepts** | Have students take turns in defining one or two key terms or concepts relevant to current or upcoming activities, assignments or lectures, for inclusion in an online class glossary (e.g. in a wiki or other shared space or document), to support timely learning within their own cohort and to provide a useful learning resource that can be repurposed by the tutor. | Have students work in pairs or small groups to create an online guide or engagement activity for a particular topic (e.g. a ‘scavenger hunt’ of relevant and reliable sources and resources on the web for their peers to explore). This could be linked to the requirements for collaborative coursework activities, or produced as evidence for an online portfolio. | Provide a range of relevant online resources within or via the learning environment (e.g. collaborative spaces, links to readings, reports and video clips) that students can use in undertaking case and problem based learning activities. |
| **Supporting engagement with relevant scholarly and professional communities** | Provide links to resources such as the social networking spaces of relevant professional groups, or the blogs or Twitter feeds of noted experts in the field, for exploration online and as part of class activities. | Arrange for online guest expert sessions that are co-constructed by the students themselves who collectively determine the questions to be asked and discussed during the guest expert’s online seminar or Q&A, which also has the benefit of minimising preparation time for the tutor and the guest speaker. | Have students find, engage in, and report back on relevant online supported professional communities that could support continued learning and professional development post-graduation (e.g. as part of an activity in which students create an online directory of relevant groups and communities in a wiki or other collaborative online document or space). |
| **Work-based learning** | Provide online work-based learning tips and guidance for those new out on placement, including a discussion forum where general questions can be handled by the tutor while students are on placement.  Help maintain social connections and support amongst students on placement through setting up a Twitter group or #tag for the cohort, or harnessing other social networking platforms and spaces. | Hold weekly or fortnightly work-based learning meet-up sessions via a virtual classroom tool. Consider having students take turns to share their work, experiences and lessons learned from their placements. | Consider technology-supported forms of assessment that will allow students to engage with the academic side of their work placement as an integrated part of the experience (e.g. maintaining a reflective blog that leads in the development of a final report, documentary, or Patchwork Text). |
| **Preparing for and undertaking laboratory and field work** | Provide links to video or narrated visual tutorials of safe laboratory and field work procedure as a means to prepare effectively. Consider linking these to a short online self-test to help students gauge their readiness for practice. | Make lab and field work more engaging through the use of mobile applications including: QR codes for ‘point of use’ information and explanation of equipment and field samples; personal technologies such as cameras, video and mobile phones to record lab and field work; applications which employ ‘pin drop’ features to record locations; and even the use of Geocaching to provide a structure to field activities. | Have students work in small groups to prepare a ‘virtual field trip’ or ‘virtual lab tour’ that will bring together a range of relevant resources (e.g. documents, websites, video clips) that can be assessed as an output of their lab or field work and used as a learning artefact for future cohorts of students. |
| **Supporting articulation and transition** | Provide incoming direct entrants with links to pre-arrival and pre-enrolment online information and resources about studying in Higher Education, and what is expected on the course itself. Feature wherever possible the voices of students who have successfully made the transition from FE into second or third year of an HE programme. | Allow articulating and other direct entry students to have online access (pre-arrival and/or on arrival) to online readings, lecture recordings and other resources from modules that ran in the prior to their direct entry to the programme. | Provide new students including direct entrants with pre-entry opportunities to engage with the peers who will be part of their year or wider programme cohorts (e.g. through online social network groups, or through a virtual drop-in session run through a virtual classroom space or videoconference meeting).  Create formal learning opportunities between current students and those from FE that are on an articulation route for a named programme (e.g. by having HNC/HND students undertake joint tasks or activities including online seminars, discussions or lectures with those in the cohort they will be joining). |
| **Contributing knowledge to the public domain** | Establishing the means for students to create or curate content and contribute it to the public domain in an informed way. This could involve a discussion within the learning environment covering: 1.Intellectual property, knowledge exchange and issues relating to the publication of content in the public domain; 2. Determining the digital medium of choice; 3. Deciding on how and where to host or contribute material for online public domain access. | Students are tasked with curating a hosted video channel or podcast feed on a given topic or research question. A discussion is held online between the group members to decide what to include and exclude. The guidelines for the curation are drawn up online to result in a collaboratively produced shared reference document. The public domain contribution is the curated channel or feed, including title, description and ‘follow’ or subscription options. | Postgraduate students are encouraged to join an established online research community or professional group in their discipline, e.g. via LinkedIn, where they begin sharing their work, expand their personal learning network, and learn from more established peers. |
| **Peer support and mentoring** | Establish online peer-peer support opportunities at programme level, within a dedicated programme space on the learning environment, where cohort wide peer-peer discussion and sharing can be enabled, in addition to peer mentoring opportunities within mentor group discussion forums. | Consider using digital tools, spaces and resources to support structured individual mentoring opportunities and dialogue for students, e.g. through one-to-one videoconferencing or virtual classroom discussions, or a closed blog or reflective online journal that the mentee maintains and the mentor has invited reader access to. | Establish an interdisciplinary peer mentoring space within the learning environment, or other appropriate online space, to providing mentoring opportunities and/or critical discussion and reflection on mentoring approaches across disciplines and programmes in which mentoring is used or required for professional development and accreditation purposes (e.g. Nursing). |
| **Interdisciplinary learning** | Establish ‘core skills’ online forums (e.g. for assistance with numeracy, information literacy, etc) that are available asynchronously to avoid timetable clashes, and where students could seek online advice from study skills advisors and each other (this could be linked into peer-mentoring initiatives where more experienced students help less experienced peers).  Within discipline-specific course provision provide from the outset access to exemplar projects and case studies available online that place the discipline the student is studying in a wider interdisciplinary context. | Establish a space within the institutional learning environment, or utilising another appropriate platform, for students from different disciplines to share project ideas, resources, and ask questions of the wider student community. For example, a computing student wishes to develop a healthcare app for their Honours or Masters project, and can seek input, ideas and suggestions for recommended readings from peers in nursing or health sciences. | Harness the learning environment, and other appropriate digital spaces, to support ‘horizontally integrated’ projects that cut across different programme cohorts and allow students from different disciplines to work together on a relevant community or industry focused initiative or development. Online tools and spaces can be used to plan and co-ordinate the work and make key outputs (e.g. reports, case studies, videos) available as digital artefacts for wider dissemination and future reuse. |
| **Providing globalised learning opportunities** | Provide students with links and subscription information for online news feeds, podcasts, professional groups, blogs and Twitter accounts that are good sources of regular international news and information in their discipline area. Make a point of using news and updates from these sources yourself in face-to-face and online activities, and get your students involved in regularly sharing what they have discovered from these sources as part of online discussion and debate. | Consider using virtual classroom technology to hold periodic seminars involving your students and the tutors and students from similar modules or programmes running in other countries and cultures, or to bring in guest experts who can help your students explore the nature and practice of their discipline from different cultural and geographic perspectives | Harness the learning environment and other appropriate online spaces to allow your students to collaborate with students from other countries and cultures, e.g. a view to undertaking a particular project that relates to their discipline within a globalised context, but also with a focus on learning about each other’s culture and cultural practices. |
| **Engaging undergraduates in research-based activity** | Establish a wiki or other collaborative online document or resource on a controversial topic, and ask students to identify and contribute relevant article links.  Help students explore simple online research tools and apps (e.g. for creating questionnaires, managing reference material and citations) that they can start to use relatively easily for their own research and inquiry related purposes. | Have students critique Wikipedia articles you know have omissions and inaccuracies, and undertake further research to help them prepare more current and accurate articles to post online. You can assess these against equivalent kinds of criteria as an essay, but allow the student the additional satisfaction and confidence that might come from adding their work to the publicly available knowledge in their discipline area (see also the further examples under ‘Contributing Knowledge to the Public Domain’)  Consider offering an asynchronous research ‘mini-conference’ to prepare and support undergraduate students during project work. This could be an online conference running over a couple of weeks in which all the students in a cohort outline their research project plans (e.g. for small-scale research projects or dissertations), contribute literature resources to a shared page of links, and use discussion forums to formulate and ask questions about the research process. | Involve students who are new or less experienced as researchers in ‘apprentice researcher’ roles on research projects undertaken by students further on in a programme or being led by the tutor, assessing them on their contributions in terms of collecting and presenting data, literature, and authoring project updates to be shared within an online space (e.g. blog, wiki, website) for the research project  Arrange for students to interview established researchers in their field and produce a podcast/video of the interview along with an online ‘resource base’ of links, articles, and presentations of their work. |
| **Support and networking for research students** | Introduce research students to institutional and appropriate external digital technologies that can support their research activity from the outset of their projects. This could include reference management tools like RefWorks, EndNote or Mendeley, or introducing the #phdchat tag on Twitter as a means to interact with other research students elsewhere  Webinars open to research students across departments, schools or faculties could be used to bring together and guide groups of research students at similar stages, or for supervisors and guest experts to offer ‘masterclass’ sessions on particular methods and approaches | Have students explore and use institutional research repository as a means to disseminate their work, and have them engage with other open access repositories and networks, or discipline focused communities (for example LinkedIn groups) for the purposes of public engagement, professional networking and building their academic and research profiles  Have research students present their work to a wider network of peers by delivering or leading online webinars (as part of a departmental, subject network, or faculty series open to invited guests). If recorded, this will give the student a useful means of reviewing the session, including questions tackled, that could help prepare them for wider public presentations of their work. | Help research students establish their own online-supported community where they can share their work and support one another, organise events and social gatherings, and where recent post-docs can offer peer mentorship and begin to develop skills that could be of use when they move into co-supervising and supervising roles. An online community of this kind could feature an online research students journal or periodical that would allow them to disseminate their work more widely, and provide links to personal blogs that research students use to establish and build their academic public profile |
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**6. LTES values and Brightspace tools and features matrix**

The matrix below provides illustrative examples of technology-enhanced approaches and interventions that are specifically aligned to the university’s Learning and Teaching Enhancement Values and a range of tools and features with Brightspace itself, referenced to the stages of 3E Framework. The intention is to provide to provide further guidance on making effective use of technology in learning and teaching that is contextualised to: the LTES values; key Brightspace functionalities; and different kinds or depths of challenge and engagement for learners.

The examples are intended to provide you with ideas for how you may use the learning environment to embed whichever LTES values are relevant within your own modules or units, and which you can use or adapt to support and engage your own learners in appropriate ways.

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|  | **Enhance** | **Extend** | **Empower** |
| **LTES Value** | Adopting technology in simple and effective ways to actively support students and increase their activity and self responsibility | Further use of technology that facilitates key aspects of students’ individual and collaborative learning and assessment through increasing their choice and control | Developed use of technology that requires higher order individual and collaborative learning that reflects how knowledge is created and used in the professional environment |
| **Learning for employment** | The **content** tools in Brightspace will allow you to provide your students with a wide range of content. You will be able to upload a variety of written content as well as video and audio resources for your students that help prepare them for the transition into the working environment. | **Quizzes** can be used in a range of ways to support your students in exploring the types of skills and knowledge expected in a particular sector, and can also be used to extend the breadth and depth of information the in learning content that is explored by learners.  The **discussions** tool can be used to promote interaction and discourse with peers and tutors which engenders confidence and personal agency that can contribute to a student's future employability. This could be through discussion activities that are used to explore the types of skills and knowledge expected in a particular sector, and to extend the breadth and depth of subject and wider professional knowledge explored by learners. | Depending on their future field of work, students might benefit from co-creating a **rubric** to evaluate one of their **assignments**. Engaging students in this type of learning activity can replicate how they might work and collaborate in the vocation, profession or field which they are preparing for. |
| **Learner choice and personalisation** | The **content** tool will allow you to provide your students with a wide range of content that students can choose from when exploring a new topic. You will be able to upload a variety of written content as well as video and audio resources for your students. | Using further features of the **content** tool, you will be able to create a range of activities and assessments for your learners which allow them to further explore the topics of interest to them.  **Quizzes** can be used to engage students in shaping and creating learning activities.  Students can be asked to design and submit questions as part of the creation of a quiz, students can be asked to create a quiz as a collaborative exercise and students can be given choices as to the level or topic of a quiz they undertake. | By working in **groups**, students have the agency to shape and co-create their learning experiences through choice and negotiation in discussion forums or group-specific assignments. Particularly when the use of the **groups** tool in Brightspace is aligned with authentic projects and activities that reflect the nature of collaborative learning in the vocation or discipline students are preparing for. |
| **Providing a connected learning experience** | The **groups** tool can provide an opportunity for students to work with their peers inside their module. It is especially useful for grouping if a tutor wants to group together students with a similar subject-based or research interests. | Adding **content** and linking to **activities** should afford learners a connected learning experience where they can apply what they have learned in collaboration with their peers, with this potentially extended to interaction with the wider online professional and scholarly communities in their field. | Tutors can choose and create **assignments** that will allow students to engage and learn with their peers inside and across cohorts, and are applicable and meaningful to the professional and scholarly community to which the students belong or which they will come to join. |
| **Evidence-based educational practice** | The examples within the mappings provided here in the Benchmarks for the use of Technology in Learning and Teaching can be utilised in making informed decisions about activities and approaches that will support effective learning, teaching and assessment at the Enhance stage of the 3E continuum.  You should also explore the educational literature in relation to technology-enhanced learning in your own subject area to further inform your own evidence-based practice in using Brightspace to support your students. | The examples within the mappings provided here in the Benchmarks for the use of Technology in Learning and Teaching can be utilised in making informed decisions about activities and approaches that will support effective learning, teaching and assessment at the Extend stage of the 3E continuum.  You should also explore the educational literature in relation to technology-enhanced learning in your own subject area to further inform your own evidence-based practice in using Brightspace to support your students. | The examples within the mappings provided here in the Benchmarks for the use of Technology in Learning and Teaching can be utilised in making informed decisions about activities and approaches that will support effective learning, teaching and assessment at the Empower stage of the 3E continuum.  You should also explore the educational literature in relation to technology-enhanced learning in your own subject area to further inform your own evidence-based practice in using Brightspace to support your students. |
| **Engaging our students as researchers** | The **Announcements** tool can be used to begin to actively engage new students in with relevant scholarship and research in their field, for example by using the announcements tool to offer weekly or periodic ‘Did you know?’ announcements that provide concise introductions to key concepts and models, useful journals, and commonly used research methods in their discipline, as a means of foregrounding research related issues they will explore in more detail as they progress through their studies. | Providing different types of **content**, aligned to appropriate activities and **assignments**, will enable you to engage your learners in discovery and enquiry based learning which can also prepare your learners for later research based activities. Structure learning content to encourage them to think beyond the boundaries of the module or unit. In addition, consider using **release conditions** to unlock new announcements and content as your students progress through the module or unit, further facilitating discovery and enquiry based learning activities. | **Groups** can be used to support learner-led collaborative discovery, enquiry -based and research-based learning activities in which students interested in the same research topic (within different levels of the same cohort, or from across different units, modules or programmes) could collaborate on a project that has value for their peers, or for communities and contexts beyond the university. |
| **Assessment and feedback for learning** | The **content** tool allows you to link to different types of **assessment** and **activities**. This enables you to ensure that your students will to have a smooth transitions between learning content and from engaging with your content to partaking in formative and summative assessment.  The **grades** tool allows you to categorise grade items for ease of understanding, and provide comprehensive and constructive feedback, including associated rubrics and/or learning objectives for the benefit of students. In addition, you can opt to release the grades so students can see their overall standing and progression in the course. | **Assignments** can enrich the learning activities undertaken by students and encourage different approaches to learning content. Formative assignments are an effective way of encouraging students to reflect on their knowledge and skills and to identify areas of further learning, while summative assignments can push encourage students to further toward developing research as well as other skills for their future jobs | Using **groups** for **assessments** can allow for rich and varied varying assessment practices providing the students with relevant and authentic learning opportunities. It can be used for formative and summative assessment on a collaborative level for a group of students participating in a discussion, or working together on the same assignment. |
| **Active and creative use of technology** | **Announcements** enable you to communicate course updates, changes and new information which will be immediately visible to students when they log into Brightspace. You can use the Brightspace's **release condition** feature which helps to make sure that students see an announcement at the right time of their progression through their unit or module. | The **assignments** tools and functionalities can provide a wide range of approaches to providing students with synchronous and asynchronous learning activities, and choice in how they engage in assignments including written submissions as well as video or audio recordings, which can be produced either individually or in collaboration with their peers. | Co-creative assignments, activities and approaches, which engage learners in co-producing, co-creating and sharing learning resources and artefacts, can be enabled through the **content** and **discussion** tools, and the **learning repository** which allows learners (not just their tutors) to create and share digital knowledge and learning artefacts within and across unit, module and programme cohorts, and to disseminate beyond these contexts. |
| **Integrated and sustainable teaching practice** | Online **quizzes** can be used effectively as preparatory work for face-to-face learning opportunities and support students to make connections and build on their learning across individual and collaborative activities.  The **groups** tool can help provide space for collaboration and communication outside the face-to-face or online classroom. | You could ask your students to help create a **rubric** to evaluate one of their assignments. That way students are actively thinking about what the evaluation process is like internalizing the evaluation criteria. Rubrics can be shared with colleagues and developed.  The **content** tool allows you to create a flow of learning by engaging students prior to, and between and following face-to-face classroom and online sessions. Students will be able to explore content as well as assignments and activities in their own time and at their own pace. This can provide opportunities to reinforce what was learned in face-to-face classroom and online sessions, or to introduce new content. | The **learning repository** can be harnessed by both tutors and students to share **content**, **activities**, **assignments** and other resources, to support the reusing, reworking and remixing of digital content and resources that reflects how digital content and open educational resources are increasingly being utilised both within formal education and for wider educational purposes. |
| **Harnessing open education approaches** | Utilise the **announcement** tool to provide students with timely alerts relating to openly available online educational resources (videos, interactive materials, online tutorials, open access journals, open textbooks) that might provide additional support for their learning. | Utilise the features in the **learning repository** that can allow you to link to content from various external repositories (e.g. ClickView, Flickr, MEDIAL) to embed a rich range of external resources in the **content** you provide for your students to engage with and explore, linked to **discussion** activities in which students share what they have learned from their explorations.  Alternatively, implement **assignments** that allow students to link to and draw upon open educational content in external repositories to produce rich digital artefacts that evidence their own learning pathways. | Harness the **open architecture** features of Brightspace in order to enable access to learning content and resources to learners who are not already registered students, e.g. for offering short online informal learning or CPD courses.  Allow open access to educational content, materials and resources through the option for creating public access **learning repositories**. |
| **Supporting the learner as an individual** | You can attach **release conditions** to **announcements**. This way you won't overwhelm your students with too many announcements. Instead, students will see an announcement when it becomes important to the module. You can also support individual learners by releasing new announcements based on their individual progress in the unit or module, so they only see the announcements that are important for them at the moment.  The **classlist** tool can help you keep monitor how often students are engaging with online learning content and provide valuable information on levels of engagement, making it easier to identify students who may need additional support or guidance to get engaged. In addition, you could use the **pager tool** to answer individual questions or provide real-time input if both yourself and the student requiring support are online. | You can support the student as an individual by creating and uploading a variety of materials. In addition, **release conditions** added to certain content items can help learners explore any given topic at their own pace and to ensure that they succeed by receiving the input in the intended order.  Feedback within the **grades** tool can be individualised. Additionally, the tutor has the choice between written, video or audio feedback, providing further scope to meet any specific needs that an individual learner has for the format through which they can most easily engage with feedback. | You as the tutor can support your learners as individuals by providing them with **assignments** that meet their own professional development needs and goals, to help every student succeed and get the most out of their module maximise their learning.  The **badges and awards** tool can be used to provide awards (badges and certificates) to students based on various aspects of their engagement and activity, to evidence merit, pro-active participation, and the development of wider skills and literacies that are relevant to their current or future practice. |
| **Reflective practice and continuous improvement** | Utilise the **surveys** tool at key points in the delivery of units, modules and programmes to allow students to provide formative (rather than end of course) feedback on their learning experiences in order to ensure this is proving active and engaging, and to identify any issues or areas for enhancement or clarification.  Similarly the **discussions** tool could be used to establish a ‘general questions’ forum where students can post questions or queries relating to issues that are unclear in the subject matter, assessment requirements, or other aspects of the unit or module or programme. | Tutors can collaborate and learn from each other in providing a rich, active and engaging learner experience, through utilising the features in Brightspace that allow **Content** created in one unit or module to be downloaded, exported/imported, and otherwise shared, including through the use of the **Learning Repository**, to support continuous improvement of materials and assessments.  Use the **discussion** tool to establish a dedicated forum (which could be anonymised) for allowing students to reflect on and articulate views on the effectiveness of module or unit delivery, ask questions that ‘link forward’ to what comes next in their course of studies, and suggest or provide input into upcoming learning activities. | For formal student-staff consultation and learning enhancement activities, including student engagement in module and programme reviews, establish more open and inclusive digital means for participation, with a collaborative online area where agendas and relevant documents can be shared and questions raised in advance, and where the **virtual classroom** tool can allow remote participation in joint student-staff consultations and programme planning meetings. |
| **Supporting professional development in learning and teaching** | Provision of self-directed and professional development opportunities for colleagues that are facilitated through Brightspace and allow them to experience and how common tools such as the **content**, **discussions**, **assignments**, and the **virtual classroom** can be used to support learning active learning in simple but effective ways. | Create staff focused programme or discipline related spaces within Brightspace that allow colleagues who are teaching in the same or similar area to share effective practice and resources, and harness tools in Brightspace (including **discussions** and the **virtual classroom**) to facilitate online dialogue, webinars and workshops to share and develop good practice. | Ensure internal taught education programmes for lecturers and other colleagues with learning and teaching responsibilities utilise Brightspace in ways that role model and immerse staff in approaches to learning, teaching and assessment that embody the Learning and Teaching Enhancement Strategy Values, and align with the Benchmarks for the Use of Technology in Learning and Teaching.  Harness the **learning repository** to allow tutors to share content, activities, assignments and other resources, to support the reusing, reworking and remixing of digital content and resources that reflects how digital educational content including open educational resources are increasingly being utilised within education. |
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**7. Module and unit planning matrix**

The matrix below can be copied and used in conjunction with the benchmarks and mappings above, to help you identify how you might utilise Brightspace and other technologies in your own modules and units in ways that are consistent with the guidance provided in the benchmarks document, with the Learning and Teaching Enhancement Values, and which are appropriate to the learners and learning to be supported.

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| --- | --- | --- | --- |
| **Module or unit title:** |  | | **Module/unit code:** |
| **SCQF Level:** | **Enhance** | **Extend** | **Empower** |
| **LTES Value** | Adopting technology in simple and effective ways to actively support students and increase their activity and self responsibility | Further use of technology that facilitates key aspects of students’ individual and collaborative learning and assessment through increasing their choice and control | Developed use of technology that requires higher order individual and collaborative learning that reflects how knowledge is created and used in the professional environment |
| **Learning for employment** |  |  |  |
| **Learner choice and personalisation** |  |  |  |
| **Providing a connected learning experience** |  |  |  |
| **Evidence-based educational practice** |  |  |  |
| **Engaging our students as researchers** |  |  |  |
| **Assessment and feedback for learning** |  |  |  |
| **Active and creative use of technology** |  |  |  |
| **Integrated and sustainable teaching practice** |  |  |  |
| **Harnessing open education approaches** |  |  |  |
| **Supporting the learner as an individual** |  |  |  |
| **Reflective practice and continuous improvement** |  |  |  |
| **Supporting professional development in learning and teaching** |  |  |  |
|  | | | |