



Blended Learning for STEM at Levels 3-6 during the Covid-19 Pandemic and its implications for pedagogy and skills

This research project with Leeds College of Building and York College is focused on reviewing the student experience of blended learning during the lockdown periods. The research explores STEM subjects, which do not traditionally lend themselves to blended learning due to the significant practical elements required of students.

The research identified that a student-based intervention could be used to support the progression of Level 3-6 STEM students into the workplace using blended learning. This extract from the research report provides some more detailed suggestions of the indicative content that could form the basis for each of the individual modules/sessions.

Table 12.2: Indicative Content for student digital skills and employability modules

No.	Session Name	Indicative content of the modules
1	Know your reps, cohort, and tutors	<ul style="list-style-type: none"> • An opportunity to get to know each other and the tutors which could take the form of a more informal team building session or enrichment activity.
2	Academic and professional writing	<ul style="list-style-type: none"> • Word (and open-source equivalent) hints and tips • Answering the question • Formatting • Writing concisely and in the third person • Embedding diagrams and charts
3	Presentation skills	<ul style="list-style-type: none"> • Advantages and disadvantages of different approaches • PowerPoint (and open-source equivalent) hints and tips • Less (text) is more • Design approaches • Embedding media
4	Study skills and resources	<ul style="list-style-type: none"> • I do it because I want to, not because I have to • Time management and avoiding procrastination • Research and reading • Paraphrasing and summarising • Referencing • There's more to life than Google: An overview of online databases and journals
5	Independent learning	<ul style="list-style-type: none"> • These three modules could run as a series looking at more advanced study skills for progressing to higher education and employment.
6	Critical thinking	<ul style="list-style-type: none"> • The indicative content would explore strategies for developing greater independence and resilience during academic study.
7	Self-motivation and resilience	<ul style="list-style-type: none"> • Also ties in with module 11 (productive learning environments)

8	Professional bodies and CPD	<ul style="list-style-type: none"> • Overview of relevant professional bodies • Making the most of professional bodies • Membership • Networking • Events and competitions
9	Networking and professional social media	<ul style="list-style-type: none"> • Keeping your CV up to date • Overview of professional social media • Making the most of LinkedIn • Getting involved in employer marketing • Continuing Professional Development
10	Making the most of the VLE	<ul style="list-style-type: none"> • This will need to be specific to the approach adopted by each department/institution. • Module contents will focus on topics such as: navigation, accessing resources, assessment, and collaboration
11	Productive learning environments	<ul style="list-style-type: none"> • This module would ideally provide an interactive forum which focuses on enabling students to work out what works best for them in terms of: <ul style="list-style-type: none"> ○ Study time ○ Study location ○ Work-Life balance and mental health ○ Time management
12	Creating and using group networks	<ul style="list-style-type: none"> • Using social media productively and responsibly (professional practice) • Collaboration rather than collusion • Inclusivity • Open vs. closed networks (e.g., MS Teams vs. WhatsApp)
13	Fundamentals of engineering maths support	<ul style="list-style-type: none"> • The intention of this module would be to provide additional reassurance and support for those that find the step up from level 3 to levels 4 and above difficult. Many departments will do this already. • This could include online examples and quizzes for students to self-evaluate their own skills.
14	CAD/Revit troubleshooting	<ul style="list-style-type: none"> • As with the previous module, this could supplement existing courses to provide additional support and reassurance. • If tutors were to utilise or develop online practicals to support in-class learning, these could be utilised here.
15	Exam writing for FE and HE	<ul style="list-style-type: none"> • Structuring your exam time • Providing an initial outline and then more detail • Don't forget study skills from other assessments

16	Note taking, why bother?	<ul style="list-style-type: none">• Value of notetaking in theory and practical sessions• Explanation and demonstration of relevant techniques (e.g., the Cornell method)• Value of diagrams and sketches
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