

Suggestions for Developing Digital Capacity in MLS Tutors (July 2020)

A person with adequate *MLS Digital Capacity* competence should be able to: profile their level of digital confidence; demonstrate knowledge of ways in which technology has been used to enhance pedagogy in MLS; demonstrate knowledge of a range of digital tools that can be employed to enhance MLS; identify one aspect of their MLS work that can be enhanced digitally, find or develop a learning object to address this, trial the tool and reflect on its effectiveness.

To demonstrate these abilities the person undertaking the learning is expected to have done the following (or equivalent):

- a) Completed a profile of their level of digital confidence.
- b) Demonstrated a knowledge of ways in which a variety of digital artefacts or techniques or technologies can be used to enhance learning of mathematics.
- c) Conducted a trial of a small digital learning object that can be used to enhance MLS in their institution and written a one-page reflection on the use of the tool.
- d) Set up a basic Eportfolio to contain the digital artefacts developed.

Given the changing nature of the software tools and approaches that underpin the skills outlined above, the use of a variety of online materials (including those developed as part of the *All Aboard* project, <https://www.allaboardhe.ie/>) has been identified as being more suitable approach to achieve the learning associated with the *MLS Digital Capacity* competence rather than traditional workshop materials used for the other competences. What follows is a discussion of possible materials and approaches which coordinators (and tutors) may find useful in completing the learning and associated tasks. The discussion is divided into separate sections, each dealing with one of criteria descriptors *a*, *b*, *c* and *d* above.

a) “Completing a profile of their level of digital confidence.”

One approach a tutor might take in profiling their own digital confidence is to use the tool that can be found at https://www.allaboardhe.ie/AAlessons/profiler/story_html5.html or an equivalent digital confidence profiling tool that individual institutions may use for staff development. Another approach might be complete some of the assessments that can be found at <https://www.digitalliteracyassessment.org/>. Alternatively the tutor might use the *Jisc Teacher profile higher education* http://repository.jisc.ac.uk/6620/1/JiscProfile_HEteacher.pdf to write a short reflection on their digital capabilities at present and identify 3 areas for growth.

b) “Demonstrating a knowledge of ways in which a variety of digital artefacts or techniques or technologies can be used to enhance learning of mathematics.”

The intention here is to make tutors aware how a range of technologies and already existing digital artefacts can be used to enhance student learning in mathematics.

- (i) One approach to satisfying this might be for the tutor to find 3 suitable examples (see suggestions menu/useful websites lists below – not exhaustive!!) from the variety of technologies and digital artefacts that exist to enhance student learning in mathematics and then write a 150 word explanation/description as to which students each chosen example might help and most importantly why the chosen example would be useful to those students learning in mathematics.

Suggestion menu:

- online quiz
- visualisation file (produced using packages such as GeoGebra, Maple, SAGE, R or similar)
- worksheet (using a nominated piece of software like Geogebra, Maple, Excel)
- screencast
- video clip
- podcast
- mathematics discussion forum
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Useful websites (not exhaustive!!)

TELU Open online courses for educators:

- <http://telu.me/all-courses/>

Teaching Mathematics Online Resource list:

- <http://talmo.uk/resources.html>

Selected Online Quiz tools:

- Numbas: <https://www.numbas.org.uk/>; <http://www.teame.ie/resources/>
- STACK: <https://www.ed.ac.uk/maths/stack/>
- Moodle quizzes:
https://www.researchgate.net/publication/304775876_Preparing_students_in_the_second_level_education_system_for_Engineering_Mathematics

Sample visualisation tool:

- GeoGebra: <https://wiki.geogebra.org/en/Tutorials?note=fa>
- GeoGebratube: <https://www.geogebra.org/m/QcjzgrR4>


Sample Screencasts/videoclips:

- Mathcentre: <http://www.mathcentre.ac.uk/>
- Khan Academy: <https://www.khanacademy.org/>

Sample customised online teaching whiteboard for Mathematics/Statistics:

- GeoGebra Notes: <https://www.geogebra.org/notes?lang=en> with tutorials: <https://www.geogebra.org/m/fp7bctpr>

- (ii) Another approach to satisfying this Criterion aspect might be for the tutor to complete a selection of the many (short) lessons and associated badges from the *All Aboard* metro map (see <https://www.allaboardhe.ie/map/>). One possible selection might be

the following: Screencasts, : <http://www.allaboardhe.ie/screencasts/>, VLE (includes blogs and online communication), <http://www.allaboardhe.ie/vle/> (in

particular VLE lesson for staff ) and Flipped Classroom 

<http://www.allaboardhe.ie/flipped/>.

(iii) Another approach to satisfying this Criterion aspect might be for the tutor to attend a conference focussed on enhancing learning digitally (for example Edtech, <http://ilta.ie/project/edtech-2019/>), and then to produce a one page of take away points from the conference and a brief description of how they would use or are using (at least) one idea from the conference to address current issues in their MLS or in MLS in general.

c) “Conducting a trial of a small digital learning object that can be used to enhance MLS in their institution and writing a one-page reflection on the use of the tool.”

The intention here is to encourage tutors to experiment using digital artefacts to enhance their work with students and that the intervention should be low risk in terms of time investment from the tutor with as much emphasis on reflection on the use of the tool or artefact as possible.

d) “Setting up a simple Eportfolio to contain the digital artefacts developed.”

The intention here is to introduce tutors to the concept of Eportfolios and to get them to set up a basic one on which to place their materials and links that they have found whilst undertaking the tasks *a,b*, and *c above*..

One approach is to use a software tool to set up an Eporfolio. A good overview of the software to set Eportfolios up is at:

<http://eportfoliohub.ie/wp-content/uploads/2016/08/examples-of-eportfolio-platforms.pdf>

Tutors may find the following pages helpful in learning how to use google tools to set up an Eportfolio:

<https://sites.google.com/site/resourcecentereportfolio/how-to-use-google-sites> which leads to <https://sites.google.com/site/resourcecentereportfolio/build> and <https://sites.google.com/site/eportfolioapps/online-tutorials-sites/sites-how-to>.

Other good resources for learning how to use google tools to set up an Eportfolio are:

<https://www.blogger.com/start> and <http://eportfoliosblog.blogspot.com/p/using-blogger-to-maintain-eportfolio.html>

For alternative approaches using other freeware, tutors may find the following useful:

<https://www.foliospaces.org/>;

<https://www.weebly.com/ie> ;

<https://www.smore.com/b5x5-weebly-com-for-eportfolios>; <https://wordpress.com/> (with nice how to video <https://www.youtube.com/watch?v=KBX0NZwgvhQ>);

<http://mahara.org/>;

Another approach to achieving this may be to use a blog to do this and there is a short *All Aboard* badge which introduces this, called Blogs in education, <http://www.allaboardhe.ie/blogging/>

