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ANALYSIS OF DIGITAL MEDIA: SUPPORTING UNIVERSITY-WIDE ONLINE LEARNING VIA MOODLE

**THE UNIVERSITY OF GLASGOW
LEARNING AND TEACHING DEVELOPMENT FUND**

FINAL PROJECT REPORT JULY 2015



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1.0 EXECUTIVE SUMMARY

This report aims to provide an overview of a project which explores teaching and learning within a blended mode of study. Specifically, it looks to analyse the production of digital media and online social networking with a view to enhancing the learning experience.

It was the overall aim of the project to contribute to the University's Learning and Teaching Strategy by developing media content; exploring the production process, analyse digital participation and explore the challenges and opportunities locally within schools.

The project objectives where:

1. Use a variety of equipment and processes to create and edit media so that we may compare production processes, the cost of development and the end quality - to determine which offers the best value for money for teaching staff within schools.
2. Build capacity to deploy innovative pedagogy across a range of courses at undergraduate and taught postgraduate level.
3. Enhance our current suite of online media resources so that we may contribute to the development of the wider college strategy for e-learning and e-assessment.
4. Provide staff and students with a framework for local media production which can be used for career long professional learning e.g. media development, social networking skills, employability skills and developing graduate attributes.

The project has placed emphasis on the production principles which enhance our online courses whilst providing a consistent quality of experience – recognising that our students often access course material produced by staff from across schools and colleges.



Mr Lee Dunn
University Teacher in Education Studies and Technology
Project Leader

2.0 ACKNOWLEDGEMENTS

The Learning and Teaching Development Fund (LTDF) bid was written by the wider project team. The success of this project is largely down to key contributions made by Mr Lee Dunn, Dr Beth Dickson, Dr Jon Trinder, Mr John Kerr and Mr Marc Andrews.

Special thanks to ALL the students and staff who engaged in the process of teaching and learning on the pilot course *What's the point of education: constructing an educational mindset*, and those who contributed across The School of Education, the School of Engineering and across the College of Social Sciences.

Others have influenced this work and gratitude is expressed to colleagues from the University of Glasgow Learning and Teaching Centre and to The Dean of Learning and Teaching within The College of Social Sciences. Your support and guidance has been invaluable.

3.0 THE PROJECT TEAM

Mr Lee Dunn	Project Leader	The School of Education
Dr Beth Dickson	Director PGT	The School of Education
Dr Jon Trinder	Technician and Tutor	The School of Engineering
Mr John Kerr	Learning Innovation Officer	The College of Social Sciences
Mr Marc Andrew	Student Representative	The School of Education

4.0 INTRODUCTION

4.1 Rationale

With recognition given to the increasing popularity of online learning, we have yet to determine the most cost effective process of local media development i.e. generating the sorts of technical constructs *which will best express pedagogical content*. We must look to provide people with the knowledge and capability to integrate Technology Enhanced Learning (TEL) into their teaching practice. This report will investigate personalised learning and digital media within a virtual learning environment. It will explore the process and costs of online media production to inform the future development of online teaching.

Crucially, the report will suggest a transferable framework to build capacity for innovative and sustainable integration of digital media within existing and new courses at undergraduate and taught postgraduate level.

Key findings which provide an evidenced based approach are built upon a project undertaken within The University of Glasgow School of Education. The project was funded through the university Learning and Teaching Development Fund (LTDF). The focus was on the production methods available locally, with emphasis on creating and editing sustainable and interactive resources.

4.2 Scope

It was intended that the initial scope of the project will be within the School of Education, but the output and lessons learned will benefit the wider university, for example, identifying how staff can be supported in the use of TEL to fulfil the ambitions of the distance learning strategy. Likewise, the concepts outlined within this report may also be of interest to the wider Higher Education (HE) community.

We recognise that any VLE is more than a repository for presentations and documents. The scope of this project has allowed us to identify and illustrate how, when and why our students engage with a variety of content, for example, recorded lectures, social media, augmented realities and audio / visual media.

4.3 Background Information

The School of Education uses a range of digital and online technologies to support learning. It should be noted that transformational change does not necessarily occur within the technology itself, but resides in the agency from teachers to learners (Younie and Leask, 2013). Likewise, there is a fundamental difference in *learning* with technology and *teaching* with technology (Dunn, 2012). Indeed, to enable teaching staff to fully explore innovative pedagogical framing; resources and content must provide intellectual rigour, stimulate thinking and increase capacity for students to engage in contemporary forms of self-directed, autonomous learning. Duffy and Jonassen (1992) conclude that poorly structured learning environments are likely to create problems for the teacher and the student as a matter of course. The instructional design must allow the learner to fully interact with the intended cognitive nature of the course objectives. The experience and behaviour of the learner must be considered at all times. The composition of an online course demands a logical schema, which in itself mirrors the digital literacy practices and mastery of technologies which we (the teacher) expect from our students. There needs to be a strong catalyst for developing graduate attributes and to enhance learning.

This project has demonstrated that the premise is two-fold:

1. The teacher must consider the *course* holistically;
2. The teacher must consider the *content* specifically;

5.0 PROJECT CASE STUDY

5.1 Architecture, Design and Theories of Learning

Downes' *An Introduction to Connective Knowledge* (2005) suggests that emerging web-based technologies bring with them new access routes to information. Although connectivism (Siemens, 2005) as a learning theory has been debated in recent years (Forster, 2007 and Kerr, 2007) the concept of information residing in specific virtual domains is sound, and that the premise would suggest that these pockets can be described as nodes. Kopp and Hill cite Siemens' interpretation on Driscoll as:

"...objectivism, pragmatism, and interpretivism. According to objectivism, reality is external to the mind, and knowledge and perception are experientially acquired. Pragmatism suggests that knowledge is a negotiation between reflection and experience, inquiry and action, and interpretivism posits that knowledge is an internal construction and is informed through socialisation and cultural cues." (Siemens, 2008; cited in Kopp and Hill 2008, pp. 2).

We are concerned with the pedagogical application and we know that this requires any knowledge building to be carried out through an interactive environment (Younie and Leask, 2013). Likewise, the epistemological framework (Table 1) can thus be widely articulated to other theories of learning:

Table.1 Illustration of connectivism and other theories of learning

Epistemologies	Theories of Learning	Concept
Objectivism	Behaviourism (Watson, 1924)	Personal conditioning to source appropriate information.
Pragmatism	Cognitivism (Piaget, 1963)	Looking towards the internal acquisition of knowledge.
Interpretivism	Constructivism (Vygostky, 1978)	The use of social networking to distribute cognition and to build knowledge.

The use of technologically supported environments to stimulate *interactive* learning is not new to education, though typical issues which arise in the use of such nodes of online learning include inconsistencies in design, style and content - the very dangers described earlier by Duffy and Jonassen. These all lead to poor student feedback and they exist across four levels of system architecture (Fig. 1). There are two broad 'design' aspects to the VLE. The *teacher* (or learning content creator) and the VLE

architect. Notably, the teacher often has little or no control over level 1 or level 2, but is likely to be able to influence what happens at course or programme level (level 3 and 4). There requires a mutual interpretation and standardisation of the architecture and design so that learning content is easily accessible, transparent and consistent.

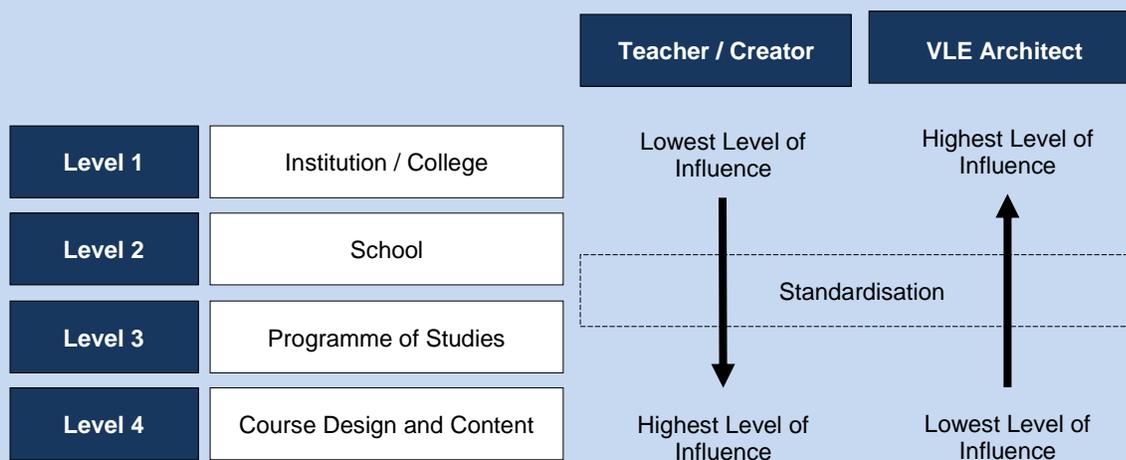


Fig.1 Levels of system design within the VLE.

With increasing emphasis on blended and distance learning, satisfaction will be based on what our students think and feel about the VLE, both in the sense that they will see similarities and differences from one course to the next within their programme of studies. To this end, the teacher must be aware of the sum of the parts and not just the components for which they control as individual course designers and/or content creators.

The case study was driven by the need for evidence-based approaches to VLE content creation and online pedagogies of learning, building upon previous work, for example (Dunn, 2013 and Trinder, 2012) and on previous work undertaken via the LTDF bid process (Welsh, 2013 and Dickson, *et al*, 2008). The technological construct must be relevant, appropriate and accessible. Above all else, they must offer a rich and diverse experience which contributes to the intellectual rigour and ethos commensurate for the level of study.

What's the point of education? Constructing an educational mindset is an elective course within Year 1 of the new MEd Primary degree programme. It is a 20 credit course which runs during semester one (broadly, September to December).

Students meet a contemporary, eclectic mix of exciting ideas which challenge them to think for themselves. The course is delivered through the VLE (Moodle) and students

are expected to engage in professional dialogue by blogging and/or participating in discussion through social networking platforms such as *Twitter*. Learning expectations are supported through an initial lecture and two face-to-face peer group seminars. The course aims to enable students to demonstrate understanding of the foundational content and values of education and to be able to articulate a personal stance towards the discipline. It aims to enable them to engage with conventional and new modes of communication as well as facilitating personal confidence and collaborative styles of working.

Students are assessed individually and also in groups. The individual component of assessment will require them to create a learning portfolio which demonstrates how they have engaged with the weekly topics - individuals will need to illustrate their stance on a chosen theme. Groups will produce an artefact of their own design that contains visual and verbal elements outlining their thoughts on a given brief. Embedded in the artefact will be a rationale for the selected mode and a description on how the group has collaborated to inform their submission.

5.2 Technological Construct

The course includes using social media as a professional medium and students study the General Teaching Council for Scotland Professional Guidelines on the use of Electronic Communications and Social Media (GTCS, 2011). The theoretical basis of using Twitter as a professional medium is taken from a recent study (Dunn, 2013).

Students undertake a series of online tasks as illustrated in Table 2. The technology is merely an interactive element that performs as an actuator between the teacher and the student. The technological construct was chosen based on the pedagogical need. Rather than begin from scratch, the design framework was based on activity learning theory as described by Sharples *et al* (2005). Social networking was used throughout the course to apply a social constructivist design, thus allowing personal experience, beliefs and values to mediate internal knowledge and distributed cognition.

By combining this approach with the associated theories of learning, the construct which underpins the course design can be illustrated as shown in Fig. 2. The adopted framework can be applied to any course within any discipline and it could also be used to produce flipped versions of teaching or the online delivery of more traditional methods of knowledge transfer e.g. lecture, seminar etc.

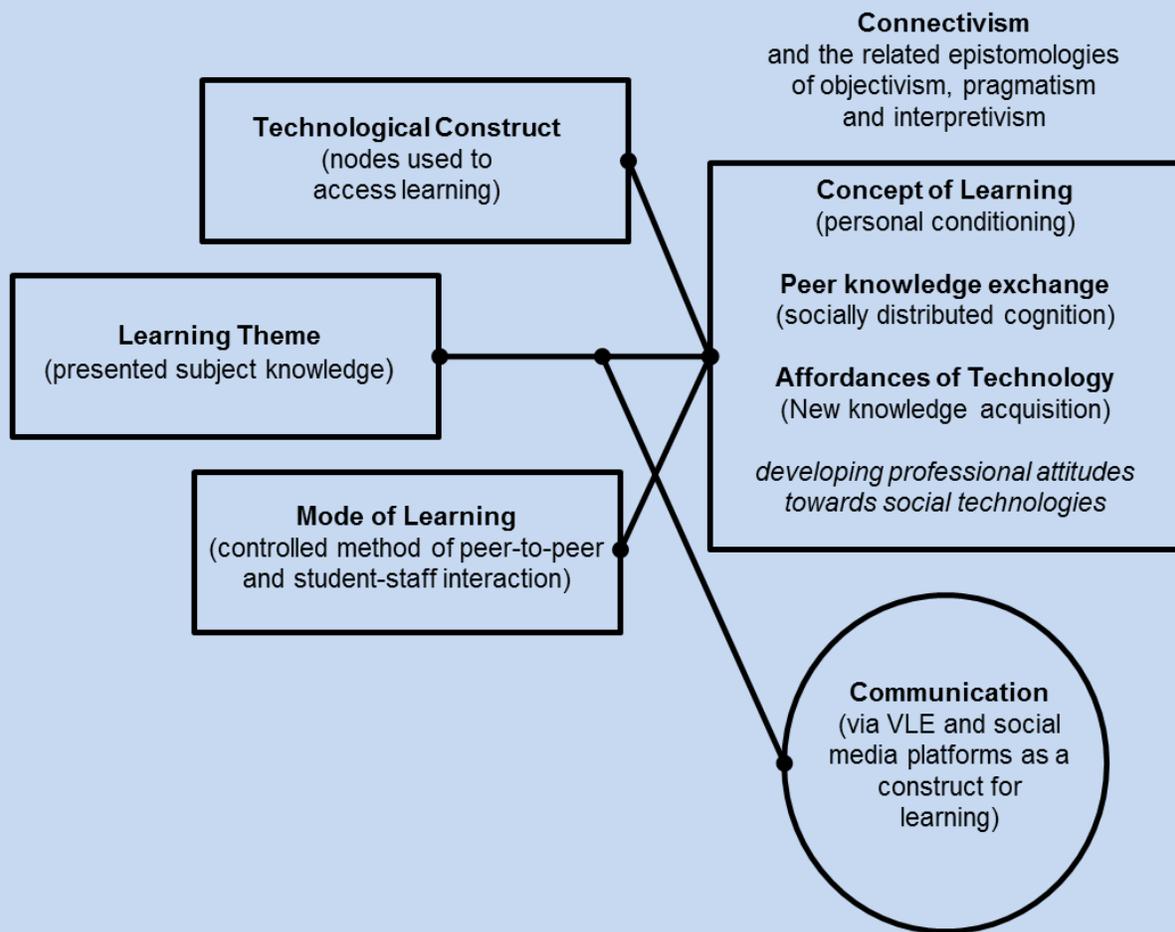


Fig.2 Illustration of how the theoretical framework has led to the adopted technological construct.

In turn, this framework can be used to slice the presented subject knowledge into sections, allowing the learning to be created in a context which is appropriate. The content creator needs to consider the pedagogical characteristics, for example, what type of technology would allow the most effective exchange of information and how can the knowledge be structured as to promote critical thinking and higher-order skills development.

Typical examples within any technological construct would include activity tracking (to monitor learners' progress), digital media streaming, podcasts, webinars, embedded hyperlinks to useful resources, embedded social networking, forums and chat rooms and a range of other tools which allow the learner to fully explore the epistemological values which will establish the concept of learning, peer knowledge exchange and the affordances of technology. Such examples can be translated into a more recognisable format (table 2), which allows the course design to be implemented.

Table.2 Framework overview and structure of the course and technological construct

	Learning Theme	Mode of Learning	Technological Construct
Week 1	Course Induction	Face-to-Face Lecture	Initial lecture recorded and made available to students afterwards via the VLE
Week 2	So, you think you know about education?	Online Learning	Media streaming as a synthesis of media sources
Week 3	Education is about going to school, right?	Online Learning	Digital animation designed to stimulate thinking and discussion
Week 4	What's the point of school?	Online Learning	Media streaming - digital recording of Professor discussing aspects of schooling
Week 5	Peer Group Seminar	Face-to-Face Peer Group Seminar	Discussion supported by Twitter and other social networking platforms / Forum and Chat Rooms - throughout weekly sessions
Week 6	What has history ever done for education?	Online Learning	Media streaming - digital recording of Professor discussing historical perspective
Week 7	Mrs Krabapple and teacher conception	Online Learning	Recorded lecture presentation with interactive elements and narrated audio
Week 8	Learners are people, but what sort?	Online Learning	Media streaming - pre-recorded lecture from a Professor
Week 9	Peer Group Seminar	Face-to-Face Peer Group Seminar	Students stream their own media clips, recorded presentations and blogs/social network conversations or virtual world
Week 10	What's the point of curriculum?	Online Learning	Media streaming - digital recording of Professor discussing curricula
Week 11	You want to know more about education?	Online Learning	Media streaming as a synthesis of media sources

It should be noted that the course ran for 11 weeks (semester 1) and that students experienced three face-to-face contact sessions with their peers and a member of the academic teaching staff (denoted in red - weeks 1, 5 and 9). These sessions acted as an anchor to guide discussion and keep students on track. They form an important aspect of learning and underpin the flipped/blended mode of study.

6.0 CREATING AN EVIDENCE BASED APPROACH

6.1 Methodology and Approach

There are two principle approaches which have been adopted for the purposes of writing this report. The first acknowledges the phased process required to address the project case study. That is, the key activities required to design, construct and implement the course at the core of the project. The second is concerned primarily with addressing the experiences of the learners engaged through the case study and the perceptions of the teachers creating the digital content.

The framework illustrates the pedagogic practice and the weight of evidence for impact on the student experience against the technological construct adopted to deliver the theme. This evaluation will provide an overview of the holistic learning experience and equilibrium, so that we may identify where we use too much of one media and not enough of another. The data will then inform a synthesis of evidence to suggest which modes of delivery and which types of agency are preferred by students (see section 6.2, 6.3 and 6.4).

The report will include approaches taken to both qualitative and quantitative study to include a student focus group, interviews with teachers and a student survey. In addition, the course was independently scrutinised by the MEd Primary Degree Programme External Examiner. In total, there were 68 students enrolled on the course. The survey was divided into two sections: section A explored the holistic course and section B explored the use of the digital media. The data was combined with an interim survey where response patterns were analysed and correlated for differences and similarities. There was an 84% response rate overall. The survey was based on a typical Likert scale where the results were coded, indexed and in some circumstances, summed to create an overview. The focus group consisted of 5 students and the teaching perspective was informed by 4 members of staff.

6.2 The Student Survey

Students were asked to complete a survey based on their experience of learning through *What's the point of education? Constructing an educational mindset*. Here, we

will only explore the given aspects that are directly related to the creation and inclusion of digital media or course design. References to wider course evaluation will be omitted.

Key Findings

- The majority of students felt that the course was designed adequately and that the online learning content was appropriately structured for their needs (83% definitely or mostly agreed).
- 86% also agreed that the weekly learning content and style of technological construct was appropriate and 85% agreed that the digital media was of good quality. There was a clear difference in quality between new streaming media and older streaming media which was outsourced.
- Students were asked if they felt the VLE course was easy to navigate and was clearly organised. 64% said that they definitely agreed, 21% said that they agreed, 7% remained neutral and the remainder disagreed. The differences in opinion are largely subjective but some perceptions have been captured through the qualitative analysis (see section 6.3).
- We asked students to reflect on their experiences of using social networks to support their learning. Most used Twitter (96%) and/or a Moodle Forum (89%) but it is not clear from the data if they duplicated workload e.g. posting the same content to both networks. In reality, this is a likely scenario.
- Less than half used Facebook or another network (43% and 21%) but again the survey allowed respondents to select more than one option.
- For many, Twitter was a new experience which evoked opposite reactions (see examples of feedback). Interestingly, those that have used Twitter before studying on the course used it *mostly* in a personal capacity with very few having used it for study or professional networking.
- When asked if they would continue to use it to support their learning, 43% said yes, 25% said no and the rest were unsure. Some students said that they felt forced to use Twitter and that they did not like it. This is mirrored in other studies (Dunn, 2013) and is suggestive that the use of social networking is very much a personal disposition. This presents a number of challenges to any teacher intent on integrating such a mode into their pedagogy.

6.3 Qualitative Feedback

These comments are taken either from the survey (open questions) or are comments made by students in the focus group. They are presented verbatim:

Examples of Positive Feedback

"I enjoyed the use of video. It was good to listen to a lecturer speak rather than just read it. It was nice to have the online Twitter community talking about their experiences and views on education."

"Learning online and use of social media - felt relevant, interesting and beneficial."

"This course was one of the best I have completed so far. It was overly interesting for a university course and a lot more enjoyable than others. The assessment was so much more interesting than a written essay or dreaded exam, yet still let pupils work hard (by no means easy), work together, and put the course themes into context. The group collaboration was helpful and useful."

"I really enjoyed the way the course ran. I liked having weekly tasks on Moodle which could be completed then discussed with peers on social media. I also enjoyed being assessed in groups where we had our own choice on how to present our work. I learned so much from this course, met so many new people and now have different perspectives on education - my favourite course so far!"

Constructive Feedback

"I felt like when doing this part of the course I didn't prioritise it as important as my other courses, particularly because it was online. I also thought that it was in some way degrading education; even though it is called 'Whats the point of education' - I felt like it was mentioning a lot of negative aspects into our career paths."

"I had a slight lack of understanding on what the assessment was requiring from us due to the lack of face-to-face contact with the tutor. The way it was delivered was a negative for me as I found it particularly difficult to keep up with."

"I disliked twitter because you couldn't have proper discussions on it. I felt forced to tweet which I did not like. I feel there are more effective ways to communicate and twitter did not help to enhance my learning at all."

6.4 The Teaching Perspective

In developing rich media content for online delivery, access to semi-professional or professional filming and media development may not always be possible. There needs to be a greater concentration and empowerment locally amongst the teaching staff, to identify and create digital resources which enhance the student learning experience.

There are (broadly) four barriers which act against such an approach:

- 1) Lack of expertise in developing online pedagogies which support digital learning;
- 2) Lack of expertise in using recording equipment and editing software (to create media);
- 3) Issues related to workload and time constraints;
- 4) Poor quality equipment or no reliable access to equipment or software.

It should be noted that the data gathered throughout this project and the anecdotal experiences of the project team do not support any premise that there is a lack of enthusiasm amongst staff in producing new resources to support their teaching. Rather (in many instances) there is a great deal of frustration that the barriers can be difficult to break down.

The staff participating in data collection highlighted workload as their main challenge. It goes without saying that knowledge and expertise can be built up over time, however this does create a paradox. There requires to be an initial period of time set aside for course development and this needs to be commensurate with the time needed to design, create and integrate good quality resources. For example, total allocated resource development on this project was 30 hours. In reality, when mapped throughout the semester, the actual accumulated staff time required was around 75 hours, where the most significant investment was needed in editing the final product.

Better recording equipment generally leads to better output. A better output means less editing. If the technology becomes too complex, it can distract from the process and then generates additional problems. For this reason, there needs to be equilibrium between the equipment, the user skills and the requirements of the product e.g. what is the purpose of the media?

As illustrated within the technological construct, the project incorporated a variety of learning themes and a range of access nodes. The type of engagement between the content and the learner depends on the mode of delivery and the node chosen. This

does not always mean that high end, professional software and equipment is needed. Students preferred a 'talking head' style presentation but they also acknowledged that a variety of online teaching styles was welcome - including virtual teaching in real time scenarios through webinars and streaming media sessions.

Presentation software (Powerpoint, Prezi etc) is readily available and the traditional norm is to create a series of lecture slides and then deliver these within a face-to-face context. One of the easiest and most basic forms of producing a more interactive product is to automate and narrate the presentation, including embedded hyperlinks and streaming media. This does require some knowledge and it is also recommended that a good quality microphone (we used the wired lavalier) be used to record the audio.

In all instances of recording, editing and producing media, staff reported that they needed at least two practice runs before they felt comfortable in producing the final product.

There are issues related to identity, intellectual property and copyright, though these were not explored explicitly within the scope of this report. Original content designed for a specific discussion was preferred by students.

6.5 External Scrutiny

Feedback from the External Examiner - Masters in Education with Primary Teaching Qualification, was largely positive:

- There is a clear rationale for the module which is outlined in the handbook and reinforced through the VLE, which is also well resourced and easy to navigate. The icons support students in understanding the expectations and modes of learning required each week.
- There are clear expectations each week and a set structure: readings, an engagement activity such as the talking head followed by questions. There is also a system where the tutor can monitor engagement and 'check' whether students have logged on.
- The module content is academically sound and it encourages students at entry level to develop their independent learning skills as well as the ability to think and ask questions. The online content of the module is of high quality. The 'talking heads' model allows them to engage with professorial thinking at an early stage

of their course and the content dovetails with learning in other modules. The students are able to make links more explicitly than they would do through a taught session as the activities each week encourage independent thought and allow students to question what they thought they knew about education.

- This is a challenging module for entry level students but as their school experience is limited in year one this allows the students to develop their own ideas about the purpose of education and allow them to question what they thought they knew before beginning to make explicit links to practice.
- The Twitter and blogging element of the module has allowed the module leader to discuss issues of e-safety and appropriate use of social media whilst at the same time modelling the use of Twitter as a tool for developing engagement with educational issues in line with the GTCS guidelines.
- The assessment code is clear.
- Allowing students to submit a presentation online not only cuts down the time for presentation assessment in terms of timetabling restrictions but allows students parity and time to prepare.
- The quality of the students' work is of a high standard and demonstrates an engagement with literature and a level of reflection that exceeds many similar courses.

7.0 CONCLUSION AND NEXT STEPS

This report seeks to make recommendations which will allow teaching staff to contribute towards a culture of digital learning by adopting an ethos where they are able to make the most of the opportunities afforded by online learning. Some of these recommendations are implied through the report e.g. standardisation of Moodle courses (page 9). We originally identified four broad objectives and these can be discussed in relation to the barriers raised in section 6.4.

Use a variety of equipment and processes to create and edit media so that we may compare production processes, the cost of development and the end quality - to determine which offers the best value for money for teaching staff within schools.

We used project funding to source a variety of equipment which also included a Mac and PC based system. On the whole, it was agreed that output from iMovie was of sufficient quality and that it was readily available on any Mac computer. This said, those who thought themselves proficient in the use of a Windows based PC found it difficult to move to an Apple product and vice versa. The funding afforded by this project has allowed the team to purchase a variety of recording and editing technologies to ascertain the most cost effective and ease of use equipment which is required for creating rich media. A full list of equipment and costing is available in Annex 9.1. Although we are not endorsing any specific piece of equipment, this reflection (sourced from staff) (Table 3) has determined that we felt value for money was best represented in the following:

Table.3 Essential equipment which the project team felt represented the best value for money.

Use	Equipment	Approximate Cost
Visual Recording	High Definition (HD) Camera	£500
Visual Recording	Tripod with Fluid Head	£380
Audio Recording	Wireless Lavalier Set	£400
Audio Recording	Wired Lavalier Set	£80
Audio and Visual Editing	Macbook Pro (Software - iMovie)	£1300
Audio and Visual Editing	Studio Quality Headphones	£100
	Total Cost	£2760

Build capacity to deploy innovative pedagogy across a range of courses at undergraduate and taught postgraduate level *and* enhance our current suite of online media resources so that we may contribute to the development of the wider college strategy for e-learning and e-assessment.

Provide staff and students with a framework for local media production as suggested in section 5, which can be used for career long professional learning e.g. media development, social networking skills, employability skills and developing graduate attributes.

There needs to be more input by teaching staff across the school, college and institution on the creation of rich multimedia resources. Students have indicated that they prefer original filmed resources to sourced media e.g. that already exists on YouTube.

In the first instance, it is recommended that traditional taught courses adopt a single style of online delivery which allows staff to become accustomed to producing the media. For example, there could be a week of study which is taught online within every programme of study. This can gradually be increased to two weeks, three weeks and so forth until a balance is met.

We recognise that the biggest issue for teaching staff is related to workload and time constraints. We therefore make the following (specific) recommendations:

- 1) Workload plans must recognise the true cost of online course development otherwise the quantity *and* quality of digital media resources will be poor.
- 2) Workload plans must recognise that resources will need to be updated on a regular basis. Traditional lectures (in a face-to-face context) mean that the teacher can adapt their rhetoric to suite media trends, news and current events. Online modes of learning need to adopt the same approach, otherwise they will be seen as outdated.
- 3) There needs to be a comprehensive way to share learning content across programmes rather than creating a new resource for every course. For example, the use of social networking as a professional medium could be a single course which is used throughout all initial teacher education programmes. Our current Moodle architecture does not allow for this and the divide between VLE architect and content creator can cause dysfunction from a student perspective.
- 4) Professional update is important. For staff who wish to upskill or learn new contexts for teaching and learning, there needs to be recognition on workload plans to accommodate this. This time must be set aside and ring fenced or there is danger that it will become a low priority given other pressures.

- 5) Academic staff should find easier processes to engage in co-construction opportunities with their students and graduate teaching assistants. Expertise and creativity resides in our student population as equally as it does within our teaching force whilst promoting a student-centred approach.

Local factors such as access to pre-installed software e.g. *Microsoft Powerpoint* is a contributing factor in that many teaching staff will already have access to basic tools which will allow them to design and create media which grows beyond a traditional presentation e.g. stored files within a repository. For example, rather than simply uploading a *Powerpoint* presentation, this could easily be automated and narrated to give a more dynamic and rich experience which is interactive. In turn, this can be transformed. This type of approach is best suited to support flipped styles of teaching. It is likely that many teachers will have access to basic resources which would enable them to design and create media for VLE integration. In some instances, more advanced technologies are available. Screen capture software such as Camtasia allows effective reproductions and walk throughs which can be used to promote a flipped style of learning. Although we did not fully explore the use of SCORM packages, this would be a natural evolution in the course.

The embodiment of social networking directly into course teaching (see Annex 9.4) is still in its infancy. Although there have been a few studies recently, the exact nature of integration and use differs from one context to another. Students' experiences of using these technologies for learning will likely be inconsistent as their use is also a character of the teacher's behavior. There are opportunities to guide autonomous study using VLE inbuilt functions such as activities, checklists and automated processes of completion. Branding and graphic interfaces are seen as important by students and the use of an icon set (Annex 9.2) was seen as a positive characteristic of the pilot course.

Learning does not reside in technology but in cognitive interpretations of information and in the agency between the teacher and the learner. It is an essential component in any teacher's arsenal of tools which can be called upon to engage learners and facilitate collaboration and technological skills which are crucial in today's society.

For this reason, the technological construct and patterns of learning which we create in aspects of our face-to-face teaching must be equally measured when we design and deliver online learning experiences. The next step in this project is to fully explore a strategy for identifying emerging technologies and digital learning to include a School of Education (pilot) strategy which will include:

1. A vision: policy and approach to planning digital teaching and learning
2. Developing staff and students skills and expertise e.g. MOOCS
3. Developing a digital capability framework as a graduate attribute

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9.0 ANNEX

9.1 Project Funding

The total project budget allocated was £8053.03. The funds were used as indicated in Table 4. The consumables included non-listed items (laptop case, cables) and lunch for the focus group participants.

Table 4 illustrates the project budget activity.

Item	Qty	Unit Price	Total Price	VAT	TOTAL inc VAT
CAMERAS, TRIPODS, LIGHTING					
CANON LEGRIA HF G25 (HF-G25) DIGITAL VIDEO CAMERA WITH 10X ZOOM LENS AND AVCHD RECORDING	2	£ 545.00	£ 1,090.00	£ 218.00	£ 1,308.00
CANON BP-808 (BP808) BATTERY PACK	2	£ 41.00	£ 82.00	£ 16.40	£ 98.40
PORTABRACE (CS-DV2R) MINI-DV CAMERA CASE	2	£ 65.00	£ 130.00	£ 26.00	£ 156.00
SACHTLER ACE M MS SYSTEM INCLUDES ACE FLUID HEAD, (P/N 1001)	2	£ 380.00	£ 760.00	£ 152.00	£ 912.00
F&V (10904101) K4000 BI-COLOR LED STUDIO PANEL 3 LIGHTS KIT	1	£ 810.00	£ 810.00	£ 162.00	£ 972.00
GLS-03 GEKKO REVERSE FOLDING LIGHTING STAND 1.8M	3	£ 33.00	£ 99.00	£ 19.80	£ 118.80
GLSB-01 GEKKO LIGHTING STAND BAG	3	£ 34.00	£ 102.00	£ 20.40	£ 122.40
RECORDING					
SANDISK SDCSXS-64G-X46 (SDCSXS128GX46) 128GB SDXC EXTREME PLUS 80MB/S UHS 1 MEMORY CARD	4	£ 56.00	£ 224.00	£ 44.80	£ 268.80
MICROPHONES					
SONY (UWP-D11/K33) ENG UHF-WIRELESS SET, (Lavalier, tie-clip type, wireless)	1	£ 410.00	£ 410.00	£ 82.00	£ 492.00

Audio Technica PRO70 (PRO-70) Cardioid Condenser Lavalier/, (Lavalier, tie-clip type, wired)	1	£ 80.36	£ 80.36	£ 16.07	£ 96.43
SONY (UTX-M03/K33) Wireless UWP-D HANDHELD MICROPHONE NEW TRANSMITTER, (Handheld, wireless)	1	£ 250.00	£ 250.00	£ 50.00	£ 300.00
AUDIO TECHNICA U841A (U-841A) OMNIDIRECTIONAL BOUNDARY MICROPHONE (wired)	1	£ 185.00	£ 185.00	£ 37.00	£ 222.00
RODE NTG-2 (NTG2) SHORT SHOTGUN CONDENSER MICROPHONE (wired)	1	£ 122.00	£ 122.00	£ 24.40	£ 146.40
RODE DEADCAT HIGH WIND SLIP-ON WINDSHIELD COVER FOR NTG-1	1	£ 20.00	£ 20.00	£ 4.00	£ 24.00
EDITING					
Lenovo ThinkPad T440p Laptop (20AN0072UK-M)	1	£ 592.00	£ 592.00	£ 118.40	£ 710.40
MacBook Pro 15-inch: 2.2GHz with Retina display 16GB RAM 512GB flash storage	1	£ 1,302.50	£ 1,302.50	£ 260.50	£ 1,563.00
BEYER DYNAMIC DT100 HEADPHONES	2	£ 104.00	£ 208.00	£ 41.60	£ 249.60
Photoshop & Premier bundle Mac licence (CLP3 price)	1	£ 40.50	£ 40.50	£ 8.10	£ 48.60
Photoshop & Premier bundle Mac (disk)	1	£ 19.00	£ 19.00	£ 3.80	£ 22.80
Photoshop & Premier bundle PC licence (CLP3 price)	1	£ 40.50	£ 40.50	£ 8.10	£ 48.60
Photoshop & Premier bundle PC (disk)	1	£ 19.00	£ 19.00	£ 3.80	£ 22.80
Consumables	1	£ 125.00	£ 125.00	£ 25.00	£ 150.00
		S-total	£ 6,710.86		
		Vat	£ 1,342.17		
		Total	£ 8,053.03		

9.2 Icon Set



Media Content

This topic may contain streaming media, podcasts and presentations.



Online Activity

There is an interactive / online activity associated with this unit of learning.



Reading

The tutor has identified core readings selected from journal articles, book chapters and online sources.



Information

There are documents / resources which outline key information related to the course.



Assessment

Contains details on assessment and / or you are required to complete an assessment.



Seminar

This is a compulsory peer group seminar / face-to-face meeting with your tutor



Lecture

This is a compulsory lecture designed to introduce you to key concepts and learning outcomes.

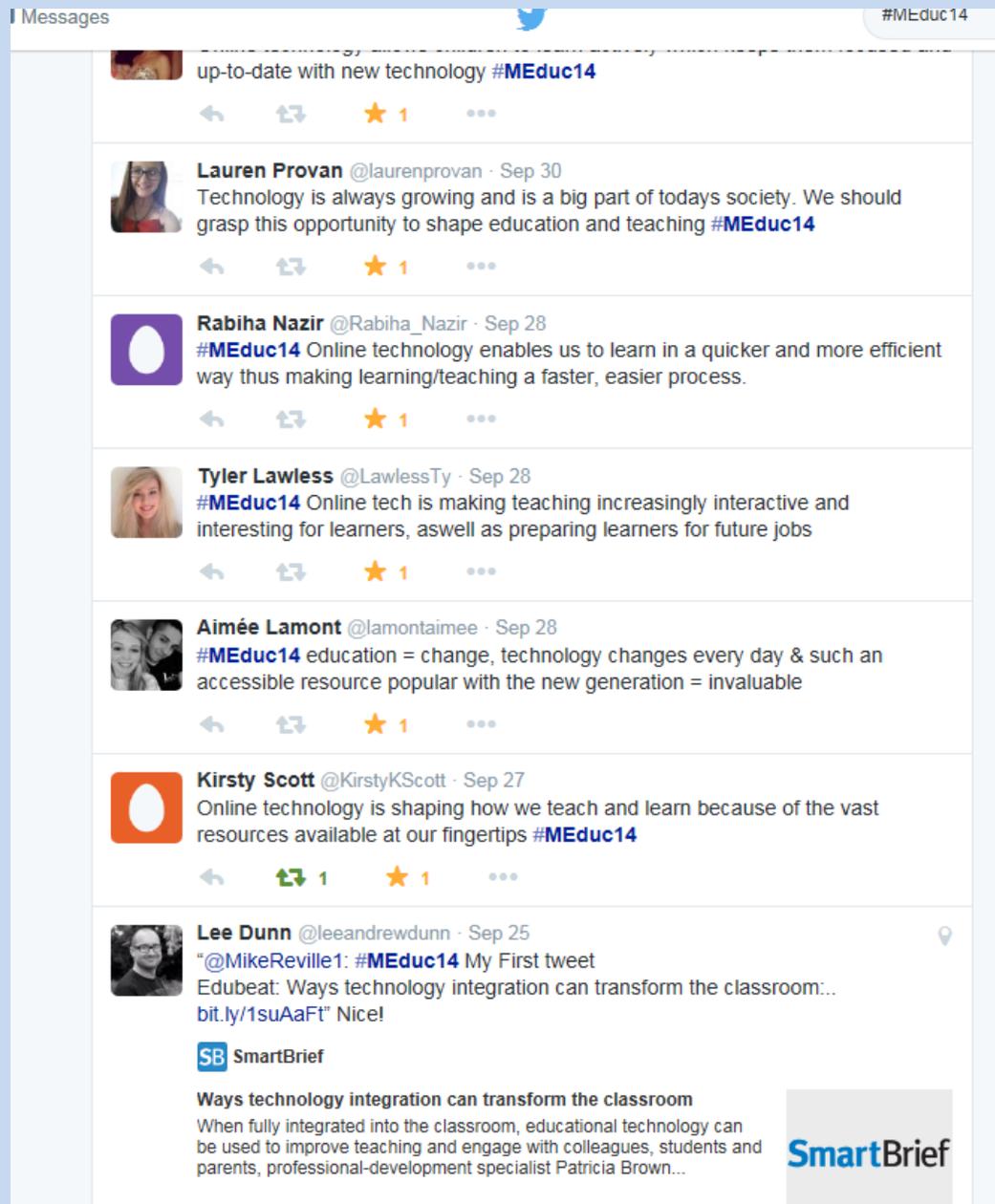


Peer Discussion

You are required to engage in peer discussion to reflect on your learning, thoughts and ideas.

9.3 Integrating Twitter

We used the following hashtag to track tweets: **#MEduc14**. An example screen capture is shown below. The interface was also embedded directly into the Moodle course window.



The screenshot shows a Twitter feed for the hashtag #MEduc14. The interface includes a header with 'Messages' on the left and the Twitter logo and hashtag on the right. The feed contains several tweets:

- A tweet with the text "up-to-date with new technology #MEduc14" and 1 star.
- A tweet by Lauren Provan (@laurenprovan) dated Sep 30: "Technology is always growing and is a big part of todays society. We should grasp this opportunity to shape education and teaching #MEduc14" with 1 star.
- A tweet by Rabiha Nazir (@Rabiha_Nazir) dated Sep 28: "#MEduc14 Online technology enables us to learn in a quicker and more efficient way thus making learning/teaching a faster, easier process." with 1 star.
- A tweet by Tyler Lawless (@LawlessTy) dated Sep 28: "#MEduc14 Online tech is making teaching increasingly interactive and interesting for learners, aswell as preparing learners for future jobs" with 1 star.
- A tweet by Aimée Lamont (@lamontaimee) dated Sep 28: "#MEduc14 education = change, technology changes every day & such an accessible resource popular with the new generation = invaluable" with 1 star.
- A tweet by Kirsty Scott (@KirstyKScott) dated Sep 27: "Online technology is shaping how we teach and learn because of the vast resources available at our fingertips #MEduc14" with 1 retweet and 1 star.
- A tweet by Lee Dunn (@leeandrewdunn) dated Sep 25: "@MikeReville1: #MEduc14 My First tweet Edubeat: Ways technology integration can transform the classroom:... bit.ly/1suAaFt" Nice!" with a SmartBrief link.

The bottom tweet includes a SmartBrief link and a preview of an article titled "Ways technology integration can transform the classroom". The article text reads: "When fully integrated into the classroom, educational technology can be used to improve teaching and engage with colleagues, students and parents, professional-development specialist Patricia Brown..."