Report of the Massive Open Online Course

on
Introduction to Technology-Enabled Learning (TEL MOOC)

Commonwealth of Learning
Athabasca University

Credits

The following TEL MOOC design and delivery team members from Athabasca University, Canada, have contributed to this report:

Dr. Martha Cleveland-Innes, Project Director and TEL MOOC Instructor
Dr. Nathaniel Ostashewki, Content Specialist and TEL MOOC Facilitator
Daniel Wilton, Instructional Designer, Web Developer and Analytics Specialist
JoAnne Murphy, Project Manager

This report has been submitted to COL as part of the agreement between COL and Athabasca University.

Table of Contents

Executive Summary

The *Introduction to Technology-Enabled Learning* (TEL) MOOC is a collaborative project between the Centre for Distance Education at Athabasca University, Alberta, Canada, and the Commonwealth of Learning, based out of British Columbia, Canada. This massive open online course (MOOC) is intended to engage teachers who work in any level of education, are from all over the globe, and are interested in technology-enabled learning and open educational resources. The first offering of this five-week MOOC took place from January 9 to February 10, 2017, using the mooKIT platform developed by the Indian Institute of Technology, Kanpur.

A Memorandum of Agreement was signed by Athabasca University and the Commonwealth of Learning in May 2016 which outlined plans for several offerings of TEL MOOC with particular focus on details surrounding the first offering of the course.

The instruction for TEL MOOC was provided by two content experts from Athabasca University, Dr. Martha Cleveland-Innes and Dr. Nathaniel Ostashewski, supported by a number of teaching assistants to facilitate course discussion. Instructional design was based on the Community of Inquiry framework which was also included in the course content for Week 1. The Technological, Pedagogical, and Content Knowledge (TPACK) framework and the Technology Integration Matrix (TIM) for use of technology in teaching and learning were presented in the course, as well as open educational resources and types of licensing agreements and permissions.

The MOOC website (http://www.telmooc.org) was used for promotion and registration, and was the gateway to the course in mooKIT. Topics in TEL MOOC were introduced through video followed by content-based activities, most of which were carried out in the course discussion area. Learners were also directed to additional reading material and/or web resources. Assessment included a multiple choice quiz at the end of each weekly unit and, as a summative project, the creation of a technology-enabled learning activity plan.

Two types of certificates were available for participants of TEL MOOC, a Certificate of Participation and a Certificate of Completion, which were granted according to participants' level of participation and completion of assessment activities. The Certificate of Participation required participation in at least three discussion forums and completion of quizzes with a grade of at least 60%. The Certificate of Completion required completion of all quizzes, participation in at least three discussion forums and the creation and (optional) sharing of a technology-enabled object. There were 107 certificates issued: 89 Certificates of Completion and 18 Certificates of Participation.

There were 1143 registrants for TEL MOOC with highest enrolment numbers from India, Canada, Antigua and Barbuda, Lithuania, and Nigeria, followed by Bangladesh, Pakistan, Sri Lanka, Grenada, Rwanda, Lesotho and Tanzania. Significant activities in the course included: active facilitated discussion forums with 2267 discussion posts in total, four live chat sessions with the course instructor and facilitator, and the sharing of participant-generated activity plans as open educational resources through a supplemental course repository located at http://www.telresources.org.

Participants submitted 343 pre-course surveys and 106 end-of-course surveys. A research plan is currently being formulated to include both short-term and long-term research projects based on the surveys, project team evaluation, and specific components of the course. This research will be of interest to the broader distance and international learning research communities.

TEL MOOC was a successful course and a productive collaboration between the Commonwealth of Learning and Athabasca University. Preliminary findings based on the end-of-course survey indicate a high level of satisfaction with the course, its materials, and its activities, along with an expectation by most respondents that TEL MOOC will have a positive impact on their teaching practice.

Background

"This kind of course help the learners and teachers to develop themselves"
- A. B., Bangladesh, TEL MOOC participant

The TEL MOOC initiative is well-aligned with the mandates of both the Commonwealth of Learning (COL) and Athabasca University (AU). Both organizations strive to remove barriers to education and promote lifelong learning worldwide. Accessibility factors such as bandwidth has been a priority in the creation of the mooKIT learning management system (LMS). Moreover, the very nature of MOOCs generally speaks to removing barriers to learning by providing learning opportunities to anyone, anywhere.

Need and Purpose

The purpose of TEL MOOC is to provide an accessible learning opportunity to teachers, particularly in developing countries, to expand upon their knowledge and skills regarding the use of technology in teaching and learning.

Planning

Planning for the TEL MOOC endeavour began in Spring 2016 under direction of Dr. Sanjaya Mishra of COL and Dr. Martha Cleveland-Innes of the Centre for Distance Education at Athabasca University (AU-CDE). Dr. Cleveland-Innes engaged a group of AU experts who later became the AU TEL MOOC team.

A face-to-face meeting was arranged between the two parties to discuss details of the Memorandum of Agreement (MOA), course content, and instructional design of TEL MOOC. This meeting took place on June 20, 2016 in Edmonton, Alberta. Those in attendance from AU-CDE were: Dr. Martha Cleveland-Innes, Dr. Nathaniel Ostashewski, Daniel Wilton, JoAnne Murphy, Carmen Jensen-Tebb, and Levina Yuen. Shortly thereafter, the MOA was finalized and the TEL MOOC partnership officially formed between COL and AU.

The TEL MOOC team members were confirmed as:

From the Commonwealth of Learning:
Dr. Sanjaya Mishra, Education Specialist, eLearning

From Athabasca University:
Dr. Martha Cleveland-Innes, Project Director and TEL MOOC Instructor
Dr. Nathaniel Ostashewki, Content Specialist and TEL MOOC Facilitator
Daniel Wilton, Instructional Designer, Web Developer and Analytics Specialist
JoAnne Murphy, Project Manager
Carmen Jensen-Tebb, Contract Administration Advisor
Levina Yuen, Instructional Design Advisor

Pursuant to discussions at the meeting, the AU TEL MOOC team proceeded to draft a project timeline which included completion dates for various phases of the project. This timeline was revised as the project unfolded and adjustments were required.

In early fall 2016, the AU TEL MOOC team formulated course objectives and a course description that COL would use for its preliminary marketing efforts. This was followed by an outline of course topics, instructor profiles, and certificate information which appeared on the course registration site and promotional brochure created by COL. Details of the course and a copy of the TEL MOOC promotional brochure are included in Appendix A.

Throughout fall 2016, the team continued to collaborate on course content specifics such as reading materials, activities, assessments and additional resources to be included in TEL MOOC. The introductory videos were produced by Drs. Mishra, Cleveland-Innes, and Ostashewski in late fall when they united at the Pan-Commonwealth Forum on Open Learning (PCF8) in Kuala Lumpur, Malaysia. Dr. Cleveland-Innes produced the content videos at the recording facility at KTH Royal Institute of Technology in Stockholm, Sweden. Scripts were created in advance of the video recordings and were included in the Resources section of the TEL MOOC course site.

Pre-course and end-of-course questionnaires were developed for TEL MOOC. These documents are included in Appendices D and E. Research plans and data collection protocols were submitted to the AU Research Office and approved in late 2016.

The mooKIT platform was examined for its technical and instructional features in December. This resulted in communication with the mooKIT support group in India, and adjustments to the course were made.

Technology

As per the MOA, COL provided access to mooKIT for use in this MOOC. Three particular emphases distinguish mooKIT as a delivery platform in comparison to other platforms and were key parameters in the course design:

- video as the primary content delivery format,
- synchronous and asynchronous interaction through forums and chat, and
- accessibility, with low bandwidth requirements and alternate modes of access.

This platform was developed and is supported by the Indian Institute of Technology Kanpur, India. mooKIT questions and issues were communication to Dr. Mishra of COL who then contacted the mooKIT team through COL's Knowledge Management Team.

A key outcome of the course was for participants to upload and share a technology-enabled activity plan as a final assessment. For greater authenticity in the creation of these plans as open educational resources, participants were given the option to share their plans through an open and permanent repository. A supplementary web site, the TEL Resources repository, was developed by AU and is available at http://www.telresources.org.

Marketing

The target learners for TEL MOOC was teachers in developing countries. COL agreed to carry out the majority of marketing efforts as the organization has an established network of connections in the education sector throughout the developing world. The TEL MOOC registration website was promoted through COL's network and the promotional brochure was distributed at PCF8 in Kuala Lumpur.

TEL MOOC was also advertised on the CDE-AU homepage and through AU social media channels. An ad and brief write-up was also submitted to OpenUpEd (http://openuped.eu/), a European MOOC provider and promoter, with whom AU is affiliated.

Notwithstanding these marketing efforts, the largest proportion of pre-course survey respondents indicated they became aware of the course through colleagues or their workplace (39.7%, n = 136), followed by email notification (15.7%, n = 54), suggesting that word of mouth and direct communication were the main drivers of registration. Finding suitable communication "hubs" will remain an important marketing strategy in future.

Design and Development

> *"Generally a great learning experience. it triggers your mind to think what you teach and how best you can teach it with the help of technology. the materials offered great reading opportunities to enhance our overall knowledge of technology enhanced learning. cheers"*
>
> - M., Tanzania, TEL MOOC participant

TEL MOOC is designed based on initial concepts and outcomes identified in the MOA and additional requirements identified in the face-to-face discussion between COL and AU on June 20, 2016. The design process was a collaborative engagement initiated by sharing perspectives and documenting ideas at this initial meeting. This collaborative process continued throughout the creation of TEL MOOC.

Agreed upon activities in the MOA which guided decisions about the design and delivery of TEL MOOC. These include the following:

1. The design requires at least 2 videos of approximately 7 minutes per week; TEL MOOC included between three and five videos per week, of approximately 3-5 minutes each. The average video viewing time per week was 17 minutes.
2. TEL MOOC is designed to be delivered via the mooKIT platform. Discussion forums, quizzes and other learning assessments, and interaction opportunities were shaped with the capacity of mooKIT in mind.
3. The structure and process of TEL MOOC includes two experts in online learning: an instructor who delivered content via video and a facilitator who provided videos to open and close each week, each of whom met with students twice in a synchronous chat forum during the course. Teaching assistants offered ongoing technology and learning support to TEL MOOC participants.

Principles

Athabasca University is committed to removing barriers to learning, in all meanings of the word, and improving quality in education. This mandate extends to all pedagogical work created by AU faculty and staff and was therefore a first principle in the TEL MOOC design. In keeping with this principle and those brought forth by COL, TEL MOOC was designed to be:

- learner-centred
- highly engaging via a multi-modal, media-rich online environment
- directly instructed via video and text-based media
- facilitated via weekly opening and closing videos
- supported by roving learning-support teaching assistants throughout
- freely accessible
- a repository of relevant resources, during and after the course.

Instructional Design

> *"The exercises and the assignment actually did follow the guided approach to learning and reinforced that we should guide our students in the similar manner"*
>
> - M. P., India, TEL MOOC participant

MOOCs are still considered a relatively new form of online learning, one which was implemented ahead of significant consideration of the application of teaching and learning principles appropriate to large numbers of online learning participants. Gasevic et. al (2014) point out this lack of instructional rigour in early MOOC development. They also suggest it is difficult, if not impossible, to apply existing social learning frameworks to the environment of a MOOC due to its scale. However, others suggest that productive online learning environments can be constructed with appropriate learning activities, instruction, facilitation, and support, even where participating learner numbers are large (Cleveland-Innes, Briton, Gismondi, & Ives, 2015). TEL MOOC has been a test of this premise.

The Community of Inquiry (CoI) theoretical framework (Garrison, Anderson, & Archer, 2000) provided guidance for the instructional processes in TEL MOOC. In keeping with the three presences of the CoI model (social presence, cognitive presence, and teaching presence), the MOOC design offered opportunities for self-reflection, active cognitive processing, interaction, and peer-teaching. In addition, our expert guidance on the need for shared application activities in teacher professional development shaped the important final assignment.

Course content was delivered through video with scripts provided to participants, and learners were given the opportunity to test their learning through end-of-week multiple choice quizzes. Material was reinforced by the course facilitator and by the teaching assistants. A three-tiered model of instruction was featured in TEL MOOC, provided by course instructor, the course facilitator, and the roving teaching assistants. Participants learned from one another in TEL MOOC through active discussions and sharing of activity plans. Additional resources were provided in TEL MOOC for participants wanting to learn more about a particular topic.

TEL MOOC was designed in reference to the points listed below. These objectives are supported when translated into delivery actions, as described in the Content and Structure of the report.

TEL MOOC participants will:

- Meet online with teachers all over the world who are also learning about technology-enabled learning
- Be supported by instructors who understand technology-enabled teaching and learning
- Explore easy-to-use technologies for classroom and online teaching
- Evaluate best fit technologies for teaching/learning contexts
- Experience a fun and collaborative learning environment via the Internet
- Receive a certificate on completion of required activities

Content and Structure

TEL MOOC took place over five weeks, with each week structured similarly.

Each content topic was delivered using a video lecture as a trigger to the learning. Under each video, there was a link leading to a set of instructions outlining the topic activities and including a prompt for the topic

discussion located directly underneath. These activity instructions used the following headings to guide the participant through a learning sequence:

- READ: primary reading material for the content topic
- REVIEW: activities to support the readings, such as reviewing relevant web sites
- RESPOND: the main discussion prompt for the topic discussion
- EXPLORE: optional enriching readings or activities, and
- ASSESS YOUR LEARNING: prompts for reflection and self-assessment, and/or
- ASSESSMENT: the weekly summary quiz or activity plan.

This design strategy allowed for the presentation of some course content as text to supplement the videos and support multimodal learning, as well as providing links to openly licensed resources and prompts for reflection and discussion. The Review, Read, Respond, Explore and Assess is a model practiced for many years by Dr. Cleveland-Innes, which was adapted to reflect the design of TEL MOOC.

An example of topic activities presented in terms of Review, Read, Respond, Explore and Assess for Week 1, Topic 1: The Community of Inquiry, is outlined below.

> **1.1.2 ACTIVITIES**
> After each lecture, you will be asked to read, review, and respond as required activities. You will also be presented with optional explore and self-assessment activities to take a deeper look into the lecture's topic. After the final lecture of each week, you will be asked to complete a quiz.
>
> Participating by replying to the Respond questions of at least three Activity forums and completing all five weekly quizzes with at least 60% is required for a Certificate of Participation. A Certificate of Completion also requires the posting of a completed TEL Activity Plan in Week 4 or Week 5.
>
> READ: Vaughan, Cleveland-Innes, & Garrison (2013). Teaching in Blended Learning Environments: Creating and Sustaining Communities of Inquiry. This chapter is available in the course Resources section, or you can download the chapter or entire book by selecting "Free PDF" at http://aupress.ca/index.php/books/120229.
>
> REVIEW: Review the range of collaborative technologies and their applications in the document, Collaborative Learning Technologies, available in the course Resources section or at http://tinyurl.com/collaborativecommunity.
>
> RESPOND: Throughout this MOOC, use the Activity Forums to respond to key questions based on the video lectures, readings, and your own experience. In the forum titled "The Community of Inquiry: Activities", reply to the forum post with your responses to: What do you see as beneficial about the CoI as a way to understand technology-enabled learning for your students? What possible challenges do you see?
>
> EXPLORE: Watch the video at https://www.youtube.com/watch?v=pZQm8Fta93k. It is an instructor talking to students about what a community of inquiry is. Consider how you would introduce your students to a community of inquiry.
>
> ASSESS YOUR LEARNING: Identify an area where you feel you want to learn more. Say how you will arrange to learn more.

> Now use the forum titled "The Community of Inquiry: Activities" to reply to the RESPOND question above.

The entire course structure, including all activity instructions and video transcripts, were also made available as PDFs for download from the mooKIT Resources section. These documents are included in Appendix G.

The integration of Facebook (https://www.facebook.com/groups/telmooc/) and Twitter (@TEL_MOOC) with mooKIT's discussion forums allowed individuals to view material as it was added to the course site. The course materials were developed offsite and inserted into the course immediately before course launch.

Weekly Topics

The mooKIT homepage for TEL MOOC listed the heading for each of the five weeks followed by links to an introduction, the topics for the week, the end-of-week quiz, and the summary. Figure 1 provides a screenshot of the mooKit homepage, displaying the layout for Week 1.

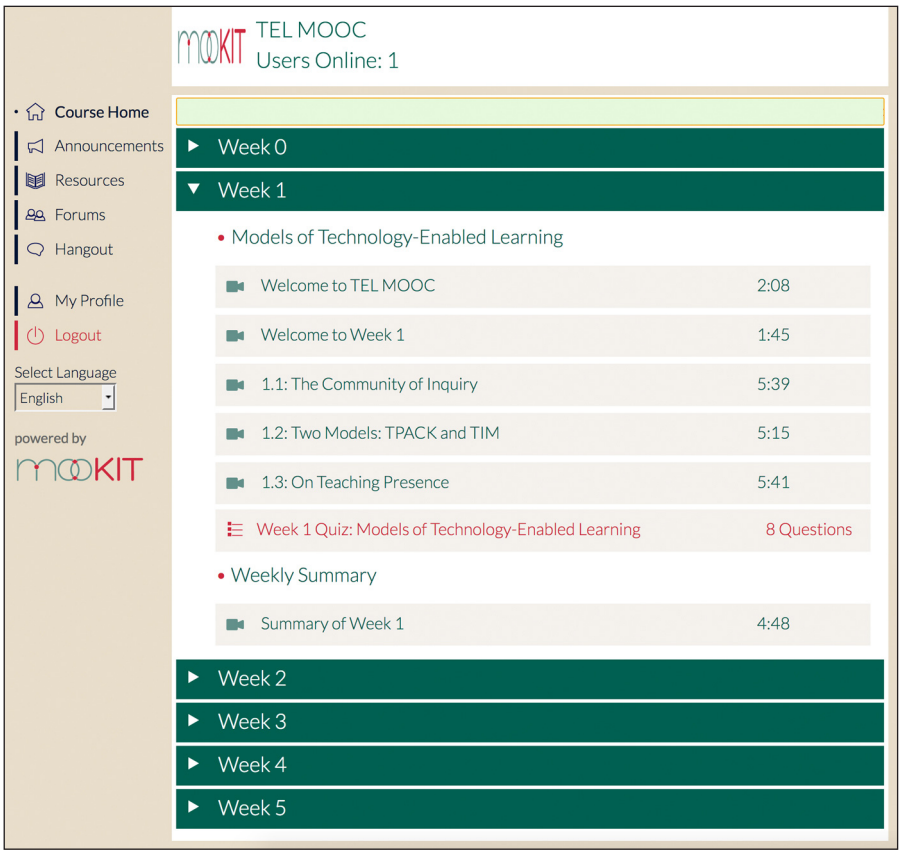


Figure 1. Week 1 topic headings as displayed in mooKIT.

The weekly topics covered in TEL MOOC are listed below. A complete course syllabus is located in the weekly course documents in Appendix G.

Week 1: Models of Technology-enabled Learning
1.1: Community of Inquiry
1.2: Two Models: TPACK and TIM
1.3: On Teaching Presence

Week 2: Technology in Education
2.1: Integrating Technology in Education
2.2: Benefits of Technology in Education

Week 3: Open Educational Resources
3.1: Understanding OER
3.2: Types of Open Licenses
3.3: Finding Open Educational Resources

Week 4: Application of Technology
4.1: Practical Application of Technology
4.2: Getting help with technology

Week 5: Creating Technology-enabled learning
5.1: Creating technology-enabled learning

Video Production

TEL MOOC used video as a promotion tool (see https://www.telmooc.org/), for weekly facilitation of learning, and as a content delivery method. Video production protocol was determined with consideration of 1) empirical findings about video quality in MOOCs, 2) expertise of TEL MOOC designers and video consultants, and 3) characteristics of possible TEL MOOC participants and appropriate video design.

Empirical findings on video usage in MOOCs suggest that:

- shorter videos, divided into segments of less than 6 minutes, are more likely to be watched until the end and are more engaging;
- pre-production lesson planning allows studio recordings to include practiced script with friendly gestures and salutations; and
- videos that intersperse the instructor view with slide displays are more engaging than slides alone or instructor view alone.

This empirical evidence was reviewed during discussions of the video design. Content videos were recorded in the studio in accordance with interpreted empirical findings.

Similar protocols were applied for facilitator videos. Facilitator videos were recorded at the beginning and at the end of each week. However, empirical findings also suggest that videos which demonstrate an informal, personal feel are more engaging in some settings. In the case of facilitator videos, the more informal approach was used.

Participants who are English-as-a-second-language learners can benefit from adjusted language usage strategies. TEL MOOC videos included several such strategies. First, speaking was adjusted to a slower

than normal pace to allow such participants time to process the words and syntax. This is in contrast to empirical findings on MOOC video, which identify a quick and varied speaking voice as more engaging for learners. Content video in particular was recorded with a slow and monotone voice.

PowerPoint slides in the content videos included written words and visuals to support concept understanding and language interpretation. All videos were scripted and the written scripts were offered to participants in the course Resources section of the platform.

OER Sourcing and Integration

Open Educational Resources (OER) are central to open education, providing accessible educational resources, which is part of the TEL MOOC mandate. There are many OER publicly available on the internet that can be used to integrate technology into teaching and learning, rendering this topic an important component of the TEL MOOC material. The various types of licensing conditions for the use of OER were discussed, with particular focus on the Creative Commons and its licensing system.

OER were featured in TEL MOOC not only as a major topic but also integrated into the course design as assigned readings and additional resources. The supplemental website at http://www.telresources.org is an OER repository of participant submissions of technology-enabled activity plans, the major assignment in TEL MOOC. In fact, TEL MOOC itself could be considered an OER.

Quiz Development

One of the key components of the TEL MOOC assessment set was a series of five online multiple-choice quizzes. Each of the five quizzes was provided to learners with the intent of providing an opportunity for learners to review and "check their understanding" of the materials provided each week, and were required for a Certificate of Participation or Completion. Quizzes for Weeks 1 through 4 of the MOOC included eight questions each and were developed referencing materials that had been provided in that week. The week 5 quiz was different in that it included ten questions, reviewing materials from all of the weeks and standing as a course review.

Quiz questions were developed using a standard multiple-choice protocol: a question was formulated based on key materials presented to learners, and four choices of answers were created with one choice being the correct answer. Following is an example a quiz question from the Week 4 Quiz:

> According to Bates (2016), technology can be defined as:
> A. Hardware
> B. Software
> C. Networks
> D. All of the above

TEL Activity Plans and the Resources Repository

The Week 4 activities incorporated a key assessment learning activity described as the TEL Activity Plan. Participants were provided with a template outlining the key components of an activity plan involving technology-enabled learning, which they could adapt to a learning objective or topic specific to their own teaching environment. Below is the description of the learning activity posted to the course in Week 4:

Week 4: TEL Activity Plan
Last Submission Date: 13/2/2017 17:00

Instructions:
As the major assignment for the course, you are asked to develop a Technology-Enabled Learning Activity Plan. See the topic activities for Weeks 4 and 5 for more details, and download the TEL Activity Plan Template and Examplar for your reference (see the course Resources section).

When you have completed your plan, register at http://www.telresources.org and contribute your plan as a resource to the TEL Resources repository. Then return here to post the link or the PDF summary from your resource's page on TEL Resources.

The basis of the TEL Activity Plan assessment originates from research into teacher technology professional development (PD) that has shown that online teacher communities benefit from creating and sharing artifacts, particularly lesson plan artifacts. With this in mind, the TEL MOOC development team created this assessment for the course participants.

The assessment not only provided learners with an opportunity to prepare an application of what they had learned in the course, but also to share and compare it with what other learners had prepared. An innovative feature developed specifically to support this form of sharing in TEL MOOC was the TEL Resources Repository, a public, searchable archive to which participants could optionally upload their TEL Activity Plans. This custom web-based application developed and maintained through Athabasca University allows activity plan authors to annotate their projects with descriptions and metadata, making them browsable by level, modality, technology, and keyword. Membership and "like" functions help support the sense of community, as well as allowing authors to track the number of downloads of their individual plans. The Repository and its archived activity plans will remain available to participants and the public as a collection of open educational resources at http://www.telresources.org.

Those participants who chose not to post their plans in the public repository were able to submit their plans through the mooKIT assignments module, allowing them to complete the major requirement for a Certificate of Completion.

Delivery

> *"I took this class because I want to keep up to date with various uses of technology. I appreciate all the effort on the part of the instructors, designers and facilitators. Thank you…. Thank you for the summaries and follow up videos. I appreciated that these responded to what was going on in the course in thoughtful ways…. This was a quality course, and a useful learning experience. I was very impressed by the multicultural representation in the class; it is evident that there is a real need for these kinds of courses. Thanks to everyone involved."*
>
> - K., United States, TEL MOOC participant

For the first offering of TEL MOOC in the winter of 2017, there were 1143 registered participants: 1123 identified as students and the remaining 20 as instructors, teaching assistants, and other administrative roles. 673 (59%) participants were considered active, having logged into the course at least once, and 107 (9.4%) were awarded completion or participation certificates.

Registrant Demographics

> *"Good work. you did a good job handling such a diverse group."*
>
> - J. K., Kenya, TEL MOOC participant

The TEL MOOC participants were for the most part highly-educated academics, and represented a fairly even distribution geographically, by gender, and by age.

Geographical Distribution

Registrants were drawn from all regions of the world, with approximately equal participation from Asia, North America and the Caribbean, and Africa. Of the 1138 participants who identified their locations, 331 (29%) were from Asia, 312 (27%) were from North America including the Caribbean, 276 (24%) were from Africa, 161 (14%) were from Europe, 30 (3%) were from South America, and 28 (2%) were from Oceania. See Figure 2. The countries with the highest enrolments are shown in Table 1.

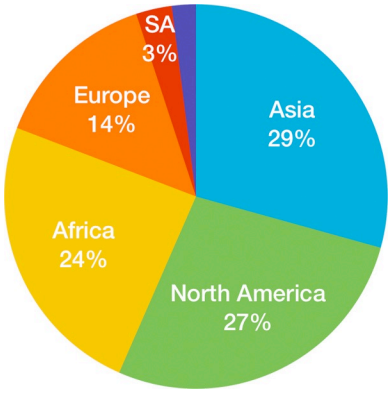


Figure 2. Registrations by geographical region.

Table 1. Countries with the greatest number of enrolments.

India	160	Bangladesh	44
Canada	115	Pakistan	43
Antigua and Barbuda	102	Sri Lanka	34
Lithuania	64	Grenada	32
Nigeria	54	Rwanda	31

Personal Characteristics

Of the 1101 participants who identified their gender, 613 (56%) were female and 488 (44%) were male. See Figure 3a.

Of the 1104 participants who identified their age, 2 (<1%) were under 20, 55 (5%) were between 21 and 25, 137 (12%) were between 26 and 30, 184 (17%) were between 31 and 35, 195 (18%) were between 36 and 40, 176 (16%) were between 41 and 45, 124 (11%) were between 46 and 50, and 231 (21%) were older than 50. See Figure 3b.

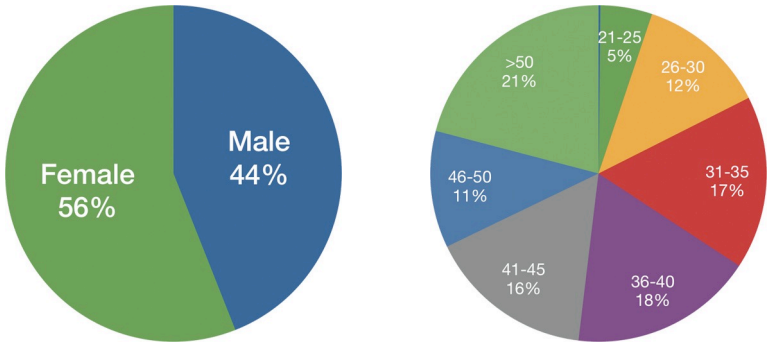


Figure 3. Participants by (a) gender, left, and (b) age, right.

Education and Professional Affiliation

Of the 805 participants who identified their educational qualifications, 54 (7%) had completed high school, 217 (27%) had an undergraduate education, and 534 (66%) had a post-graduate education, indicating a highly-educated participant population overall. See Figure 4a.

Finally, of the 1109 participants who identified their professional affiliation, 797 (72%) were from academia, 50 (5%) were affliated with non-profit organizations, 13 (1%) with for-profit organizations, 12 (1%) with community organizations, while 238 (21%) identified themselves as individuals or unaffiliated. See Figure 4b.

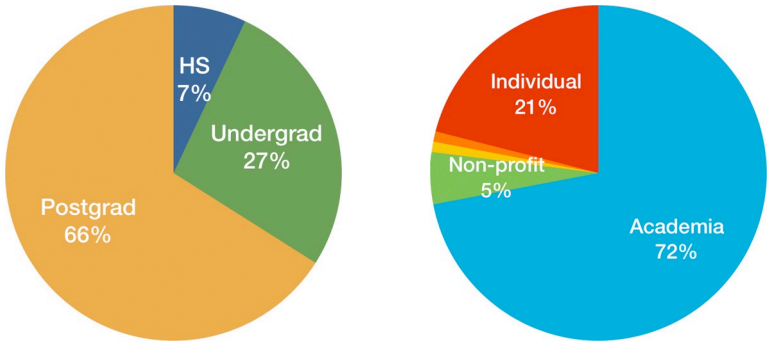


Figure 4. Participants by (a) educational qualifications, left, and (b) professional affiation, right.

Video Lectures and Instructor's Presence

TEL MOOC included 26 videos: eight short videos providing instructions on the course delivery platform, two introductory videos, eleven lectures, and five summary videos by the facilitator. See Appendix C for a list of the introductory and lecture videos and their web addresses.

504 participants viewed at least one video (defined as watching at least 90% of it). Figure 5 shows (a) an introductory video with the COL project director, (b) a lecture video with the course instructor, and (c) a summary video by the course facilitator.

Figure 5. Video stills of (a) an introductory video with COL project director Dr. Sanjay Mishra, left, (b) a lecture video with instructor Dr. Martha Cleveland-Innes, center, and (c) a summary video with facilitator Dr. Nathaniel Ostashewski, right.

Facilitator's Role and Presence

The facilitator's role in TEL MOOC was intended to provide the present or live instructional component. The primary goals of this role were to:

- present announcements to guide learners during the course
- highlight any weekly questions or concerns via announcements and mass email tools to learners as needed
- provide a sense of direct teacher presence in the general discussion forums that were student generated, and
- to provide weekly summaries of the ongoing activities of which learners should be aware.

The announcements were a critical component of the direct facilitator-learner interaction that supported administrative tasks required during the course through broadcast messages to participants, such as indicating that multiple quiz attempts had been enabled. This required a constant review of the activities

occurring in TEL MOOC during the delivery, and while the facilitator posted the announcements, content of several of the announcements required the support of the delivery and platform support teams.

The appendices include a list of all announcements posted during the course, along with a sample announcement. Figure 6 presents a word-frequency cloud that represents the content of the facilitator announcements.

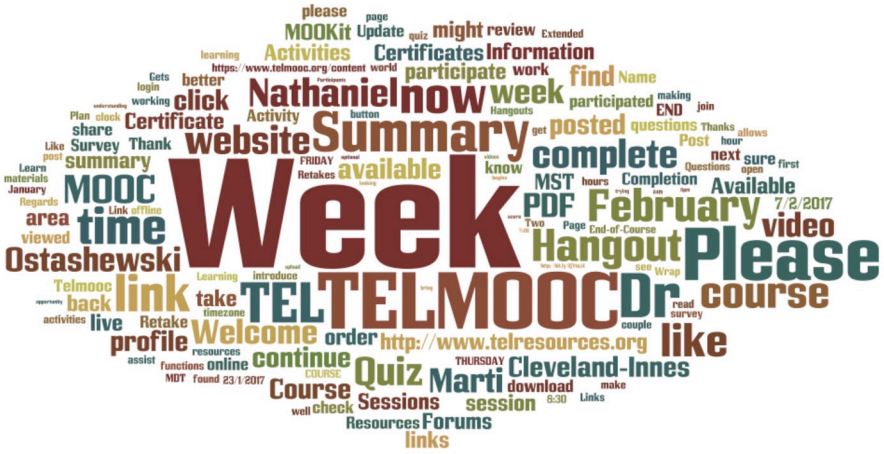


Figure 6. Word frequency diagram of facilitator announcements.

Another manner in which the live instructional component of the facilitator role was achieved was through the use of video segments presented to the learners as a weekly summary. During the week, the team of teaching assistants aided the facilitator in identifying learner posts and questions that were excellent examples or reflections on the weekly topics. As each week came to a close the facilitator collated these exemplar posts into a PDF document for downloading from the mooKIT Resources section; see Appendix G for the summary document for Week 1. The facilitator then also presented the summary through a short video segment. This included an outdoor setting that was in an environment perceived by the facilitator as likely new to many participants from such regions as India, Africa, or the Caribbean: a snowy Alberta. The intent of the outdoor setting was to garner interest, with the hope that learners would return weekly to view the unique videos and listen to a valuable summary of the week.

Table 2 below presents the viewing analytics of the facilitator videos, along with participant comments acknowledging the interest and value of the videos. Viewing statistics also indicate that many of these videos were watched on a computer as opposed to mobile devices, a finding that suggests many of the learners are accessing the videos from high speed connections.

Table 2: Viewing analytics of the facilitator videos.

Details	Thumbnail	Student Feedback	Views (% via computer)	Average View Time (% of video)
W1 Summary (4:48) 2017-01-15 https://youtu.be/zZO6RfQpoU8		N/A	N/A	N/A
W2 Summary (3:56) 2017-01-22 https://youtu.be/r8cuq_ksU_8		"Thanks for bringing some snow (as well as knowledge into our teaching)"	N/A	N/A
W3 Summary (3:12) 2017-01-31 https://youtu.be/XsfioN7Mu4I		"Excellent summary of the lesson, Dr. Nathaniel"	102 views (91.2%)	1:56 (61%)
W4 Summary (3:23) 2017-02-06 https://youtu.be/b_tC_lBuVYU		"Thank you for the nice summary!!"	93 views (92.4%)	1:55 (57%)
W5 Summary (3:12) 2017-02-12 https://youtu.be/VcStZbfVirI		2 YouTube likes	75 views (84%)	2:06 (58%)

Discussion Participation

Discussion was an important component of TEL MOOC. Introduced early in the course as critical to building a community of inquiry, discussion participation was frequently encouraged by the instructors and teaching assistants, and was one of the criteria for participation certificates.

Each of the 11 course lessons included a topic discussion forum ("Activity forum") with prepared questions for discussion of the lesson's topic. During the course itself, participants created an additional 45 forums within the lesson spaces. In the General discussion area, instructors and teaching assistants initiated 6 forums, while participants initiated a further 197 forums ("General forums") to discuss specific topics of interest, ask questions, or request technical help, for an overall total of 260 discussion forums.

A total of 2267 messages were posted: 274 (12%) by instructors and teaching assistants, and 1993 (88%) by participants. 256 student participants (23% of all registered or 39% of active participants) posted at least one message, with an average of 7.8 posts each (s = 12.7).

The pre-established Activity forums contained most of the extended discussions during the course. 941 messages (42%) were posted in the Activity forums, with an average of 78.4 messages per forum (s = 24.7). An additional 244 messages (11%) were posted in the participant-generated forums within the lesson spaces, with an average of 5.4 messages per forum (s = 4.8). The remaining 1082 messages (47%) were posted in the General forums, with an average of 5.3 messages per forum (s = 4.0).

As the mooKIT platform did not allow for threaded messages, it is not possible to distinguish participant-participant, participant-facilitator, or isolated posts from their structural characteristics alone. A full study of the interaction patterns will require a more detailed content analysis.

The approximate average length per participant post across all forums was 66 words (s = 71.7), while the average length per instructor or teaching assistant post was 79 words (s = 63.7). The Activity forums tended to have longer posts, with an average length for participant posts of 95 words (s = 72.0) and average length for instructor or teaching assistant posts of 113 words (s = 79.4), compared to averages of 44 words (s = 62.8) and 72 words (s = 62.5) respectively across the remaining forums. The fact that the posts in the Activity forums were over twice as long as in the remaining forums suggests they were successful at eliciting more developed, detailed, or reflective responses from the participants.

Overall, the total participant word count was more than six times the instructor and teaching assistant word count (132,457 versus 20,599 words, respectively), showing that the dominant voices in the course belonged to the participants, as intended.

Synchronous Chat Hangout

> *"The Hangouts were a great opportunity to contact the instructors and designers. It added a lot of value to my experience, to have those minutes of direct conversation...."*
>
> - M. M., Canada, TEL MOOC participant

The Hangout in TEL MOOC was a synchronous text chat function. Running continuously, the Hangout was used by 149 participants and 9 instructors and teaching assistants to post 853 messages over the length of the course.

The approximate average length per message was 17 words (s = 18.2), reflecting the more spontaneous nature of synchronous chat as compared to the discussion forums, as well as the technical fact that each "paragraph" of a longer message would be posted separately.

Although not initially scheduled for the first delivery of TEL MOOC, the Hangout was also presented as an additional learner-instructor connection opportunity, with four hour-long live sessions to discuss the material, course management, and broader topics around technology-enabled learning. The decision by the instructor and facilitator to offer Hangout sessions was due to the ongoing use of the Hangout for interactions between participants and the teaching assistants.

Only a small number of participants were actively involved in the live sessions (three, two, zero, and four student participants in each of the four sessions); it is not possible to say how many participants, if any, may have been observing the session silently. The limited number of participants active in the sessions

may be partly due to the difficulty of finding suitable times for a global audience, with a notable number of learners in India and the instructor and facilitator in Alberta, Canada. However, the number of messages generated by these participants during the sessions was more encouraging (55, 42, 1, and 68 messages, respectively), for a total of 166 messages (19.5% of the total messages in the Hangout). This suggests that while only a few participants took advantage of the sessions, the sessions provided an opportunity for active discussion between the instructor, the facilitator, and the participants who did join.

Weekly Quizzes

Each week included one multiple-choice quiz of eight to ten questions, for a total of 5 course quizzes. Of the 1123 participants identified as students, 204 (18%) attempted at least one quiz (defined as achieving a score greater than 0), with 121 (11%) attempting all five.

The mean quiz score for all attempted quizzes was 74%. The mean quiz score for those who attempted all five quizzes was 79.6%, while the mean score for those who attempted fewer than five was 66%.

Quiz settings and descriptions created some confusion. Initially, the settings for the quizzes allowed for only a single attempt at each quiz, with 60% as the posted minimum score for achieving a certificate. However, as the quizzes were intended to be learning tools as opposed to summative assessments, this presented challenges that were noted by learners. Several learners requested the option for multiple attempts at the quizzes.

Multiple attempts at the quizzes was important for TEL MOOC as it is an open professional development (PD) course. The option for learners to complete and achieve a certificate of participation or completion required a base grade on the quizzes, and learners quickly understood that their failure on a quiz without an option for multiple attempts jeopardized any possibility for a certificate. Of those who attempted at least one but fewer than five quizzes (n = 83), 36 had at least one quiz with a score of less than 60%, while 33 of those (92%) had a failing score on the last quiz they attempted, suggesting that some participants may have been disincentivized from further participation.

The instructional team therefore requested a change to the platform to allow for multiple quiz attempts. This change was quickly made, and participants responded very positively to the option of repeating a quiz for a higher score.

Technology-Enabled Learning Activity Plans

The TEL Activity plans were the final assignment for the course and were required for a Certificate of Completion.

98 participants from 25 countries registered as members of the TEL Resources Repository. 82 activity plans were posted to the public Repository as open educational resources, and a further 11 plans were submitted through the mooKIT assignments module. Most participants who posted plans to the Repository also submitted the same plans through the assignments module to confirm their eligibility for a certificate, though this was not necessary. See Figure 7 for a sample TEL Activity Plan submitted by a TEL MOOC participant.

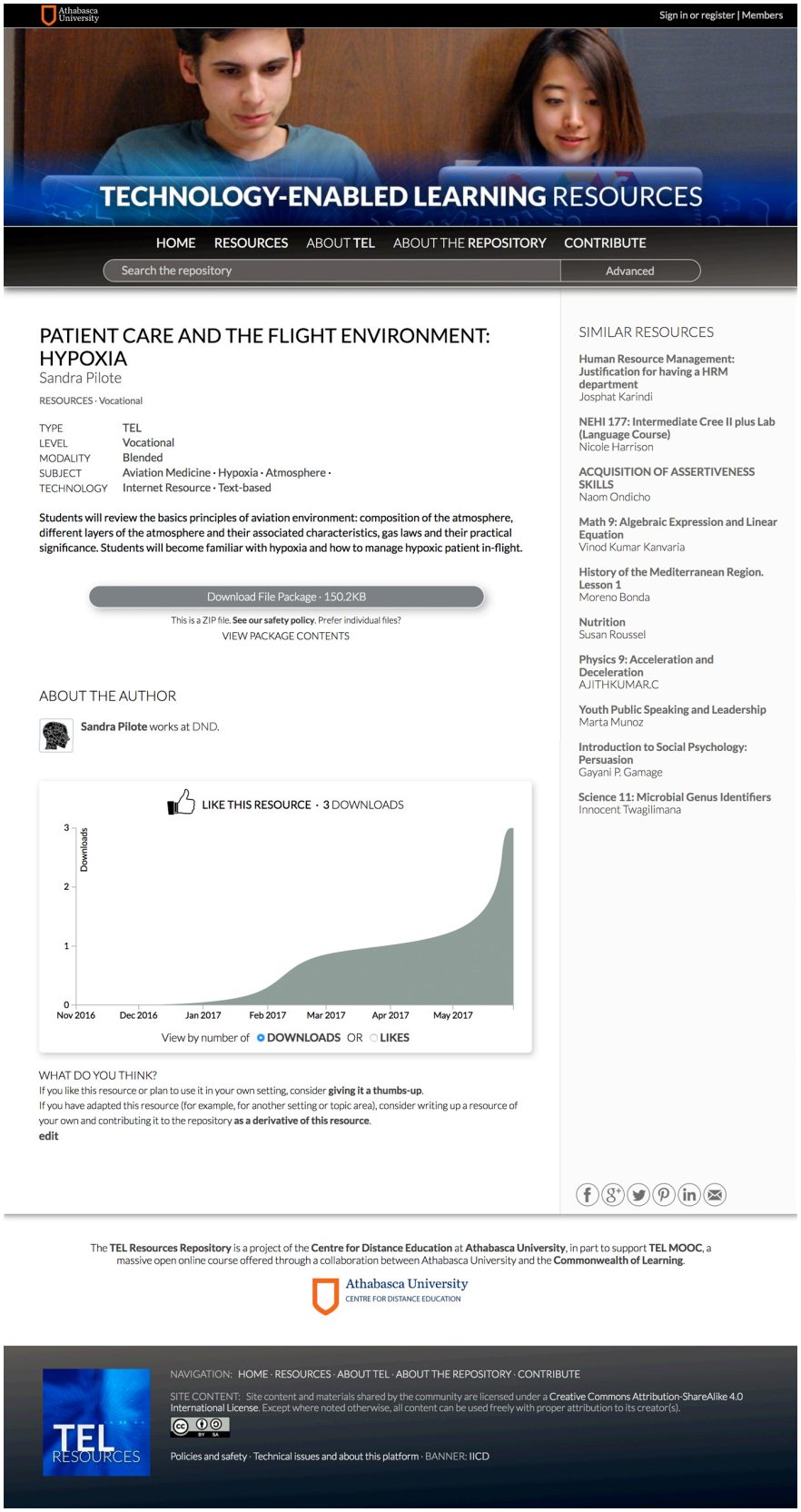


Figure 7. A TEL Activity Plan at http://www.telresources.org.

The posted TEL Activity plans cover a wide spectrum of educational settings, levels, delivery modalities, and technologies, with topics ranging from the surface area of cuboids to the impact of climate on soils in Africa. See Appendix D for an overview of levels, modalities, and technologies addressed in the plans. While there have not been additional submissions since the end of the course, the number of downloads continues to climb at a slow but steady rate, with approximately 400 downloads to date, suggesting ongoing interest and use.

Certificates

Two levels of certificate were offered in TEL MOOC. 18 participation certificates and 89 completion certificates were awarded, for a total of 107 certificates.

To qualify for either certificate, participants were required to attempt all five quizzes with an average score of at least 50% (representing a relaxation from the originally posted criteria). In addition to the quiz requirement, participation certificates required at least three discussion posts, while completion certificates required a TEL Activity plan posted either on the public TEL Resources site or privately within the TEL MOOC platform.

Findings and Research Agenda

TEL MOOC has generated a wealth of data, both for the evaluation and improvement of the course itself and for a more formal research agenda to contribute to the larger education research community through peer-reviewed journals and conferences. Findings for course evaluation and improvement are discussed in later sections of this report (Lessons Learned and Recommendations); this section provides an overview of some of the available data and an agenda for peer-reviewed research.

The available data includes participant data based on information requested upon registration for TEL MOOC and participant surveys taken at the beginning and end of the course. The participant data includes descriptive statistics about the learner cohort (demographics, backgrounds, etc.) and qualitative assessments of instructional, social, and affective aspects of the course experience. This data is currently being analyzed by the TEL MOOC team, and two research assistants were hired to identify (a) common themes emerging from participant evaluations and recommendations and (b) correlations between participant characteristics, experiences, and achievement in the course. Key statistics are given in the summaries of the surveys below, followed by preliminary correlations between the surveys; this research is ongoing with an expectation for publication and presentation through conferences.

Research is also being conducted from the perspective of the instructional and development team through a MOOC pedagogy survey, described below. The findings from this survey will not only provide additional evaluative information about the course itself, to complement the participant surveys, but should also provide insight into the pedagogical strengths and challenges of MOOCs in general, as well as the effectiveness of the survey as a MOOC evaluation instrument, and so should be of broad interest to the education research community. The responses to the survey are now being analyzed with an expectation for publication.

A third research project currently underway centers around the TEL Activity Plans, including the plans themselves as learner-generated artifacts and OER, as well as the participants' experience in preparing and sharing the plans. This project is discussed below under the Summary of TEL Activity Plan Evaluation. A research assistant was hired to support the research team in analyzing the plans and related participant discussions. It is anticipated that this research will provide important insight into the effective use of participant-generated OER in online education, and is intended for publication or presentation through conferences.

These research projects illustrate the range and richness of data available from TEL MOOC and MOOCs in general; additional research opportunities might include social network analyses or patterns of help-seeking and support through the participant-generated discussion forums. While the projects being described here are addressed to questions in the broader education research community and intended for peer-reviewed publications or conferences, many of the findings will also be directly applicable to the evaluation and improvement of TEL MOOC.

Summary of Pre-Course Survey

Three hundred forty-three student participants completed the TEL MOOC Pre-Course Survey. See Appendix E for the survey questions.

Demographically, the responses were broadly similar to the registrant demographics of the course itself, but some additional information was obtained from the survey respondents, including that almost two-thirds (62.9%, n = 219) indicated English as their primary language.

The survey responses confirmed the registration trends of a highly-educated and experienced participant cohort. 25.4% (n = 121) had a PhD or equivalent and 50% (n = 157) were working at the university level. A very high proportion, 76.5% (n = 260) were involved in face-to-face teaching, 40.3% (n = 137) were involved in research, and 34.7% (n = 118) were in management or administrative positions. Notably, those who indicated a primary language other than English were also more likely to have achieved a Master degree or higher than the participants who were native English speakers (89% versus 55%).

A majority self-reported a skill level of proficiency or higher in their personal use of software and social media (88%, n = 301 and 70.7%, n = 251 respectively), though a greater number indicated only basic skills in creation or instruction using technology (44.1%, n = 150 and 47.4%, n = 161). 51.5% (n = 176) indicated they were taking the course out of general interest in technology-enabled learning, while only 33.3% (n = 114) indicated it was meant for professional development. Nevertheless, the majority (89.5%, n = 307) indicated they planned to complete all activities to earn a certificate, suggesting a very high level of commitment to the course despite only moderate technical skills.

Summary of End-of-Course Survey

One hundred six student participants completed the TEL MOOC End-of-Course Survey. See Appendix F for the survey questions.

The survey results indicate a very positive participant response to TEL MOOC, with 95% (n = 101) agreeing or strongly agreeing to the statement, “Overall, I was satisfied with TEL MOOC” and 94% (n = 100) agreeing or strongly agreeing with “TEL MOOC met the learning objectives.” Similar responses were found regarding the course material, with 95% (n = 101) agreeing or strongly agreeing with “The course material was of good quality”, and volume of material, with 86% (n = 90) agreeing or strongly agreeing with “The workload was manageable.” The survey respondents also expected a positive impact on their teaching from having completed TEL MOOC, with 95% (n = 101) agreeing or strongly agreeing with “The TEL MOOC experience will assist me in the use of educational technology for teaching and learning.”

The survey also indicates that respondents found value in the discussion forums, with 91% (n = 96) agreeing or strongly agreeing with the statement, “TEL MOOC discussions provided me with information about resources that I will be able to use in my own teaching.”

In terms of social presence, respondents appear to have found TEL MOOC effective, with 80% (n = 84) agreeing or strongly agreeing with “I felt like I was part of a community in the TEL MOOC”, and 74% (n = 78) agreeing or strongly agreeing with “It was okay to express emotion in the TEL MOOC forums.”

In terms of teaching presence, 42% (n = 45) of respondents indicated they would have liked to have had more or much more instructor and facilitator involvement, while 50% (n = 53) indicated about the same level of involvement.

Survey respondents also used the open-ended questions (“What suggestions do you have for the instructor and/or course design team?” and “If you would like to provide general feedback on TEL MOOC, please enter it here”) to indicate their satisfaction with the course; a preliminary thematic analysis indicates

"praise" as the most common theme in each category (19% and 51% respectively). Sample responses are included below; specific recommendations from the survey respondents are included in the Recommendations section of this report.

> *"It was a very well structured course. The flow of work was efficient from one week to the other; it built each time. In my opinion, the best of all is the connection it provided us with, to a wealth of resources on the issue of Technology-enabled learning. I am very glad I participated. Thank you!"*
>
> - M. M., Canada, TEL MOOC participant

> *"From my inner heart, I appreciate the program. Therefore, I suggest, if possible to have some more online programs so as to grow academically. Such programs are very helpful especially to us from developing countries (Tanzania) where online courses are rarely found. Thanks very very very much."*
>
> - M., Tanzania, TEL MOOC participant

Correlations Between the Participant Surveys

Correlation studies of data for participants who completed both the pre-course and end-of-course surveys has been carried out and will be analyzed further over the upcoming months. A few highlights are as follows:

- Although by region survey respondents from Africa had lower completion rates than other regions, respondents from Africa also expressed the highest level of satisfaction with the course compared to other regions.

- Respondents who specified a primary language other than or in addition to English had a higher completion rate (92% achieved a designation) compared with respondents who specified English as a primary language (80% achieved a designation).

- In response to the end-of-course survey statement, "Overall, I was satisfied with TEL MOOC," there was no appreciable difference between genders. Similarly, 59% of respondents who specified a primary language other than or in addition to English and 59% of respondents who specified English as a primary language both strongly agreed with the statement.

- 87% of respondents with an age range of 40 to 54 obtained a certificate of completion, as compared to respondents with an age range of 30 to 39 (85%) or respondents with an age range of 20 to 29 (78%).

- 100% of respondents with the age range of 20 to 29 agreed or strongly agreed with the statement, "I felt like I was part of a community in the TEL MOOC," compared with 66% of respondents in the age range 30 to 39 and 80% of respondents in the age range 40 to 54.

- 55% of respondents who specified English as primary language had a degree equivalent to a Master level or higher, while 89% of respondents who specified a primary language other than or in addition to English had a degree equivalent to a Master level or higher.

Summary of Assessing MOOC Pedagogy Survey

The course development and facilitation teams are participating in a post-course review to determine what pedagogical practices emerged as a result of TEL MOOC design and facilitation.

The tool, designed and tested by Swan, Van Prooyen, Day & Bogle (2014), includes ten conceptual criteria with suggested criteria for rankings. The ten criteria are:

1. **epistemology** (from instructionist or objectivity to constructivist),
2. **role of the teacher** (from teacher-centered to student-centered),
3. **focus of activities** (from convergent to divergent),
4. **structure** (from less structured to more structured),
5. **approach to content** (from concrete to abstract),
6. **feedback** (from infrequent and clear to frequent and constructive),
7. **cooperative learning** (from unsupported to integral),
8. **accommodation of individual differences** (from unsupported to multifaceted),
9. **activities and assignments** (from artificial to authentic), and
10. **user role** (from passive to generative).

The interviews and surveys have been completed and are now being reviewed.

Summary of TEL Activity Plan Evaluation

As part of the evaluation of the TEL Activity Plan component of the course, a series of analyses of the Week 4 and 5 forums are being conducted to gain an understanding of the discussions learners were having directly related to the activity itself.

In all three forums of Weeks 4 and 5, course participants were responsible for approximately 90% of total posts, indicating a high level of learner engagement in discussions surrounding the TEL Activity Plan assignment. Qualitative coding of the posts indicates that:

- learners were engaged in meaningful discussions about TEL and supporting TEL development,
- the TEL Resources website was understood by learners as the place to share and contribute to open-access resource development, and
- there was considerable latitude and engagement with the variety of pedagogical perspectives presented in the course material.

Another component of the TEL Activity Plan that can be evaluated to explore TEL MOOC learner growth is a review of the plans according to their alignment with the Technology Integration Matrix (TIM) introduced earlier in the course. The evaluation team has created a coding baseline for evaluating the activity plans according to the TIM Framework; initial results show the following:

While the majority (56%) of TEL Activity Plans were developed for active learning, a significant number of plans described collaboration, construction, and authentic learning. This indicates a wide range of TEL plans were developed and a wide set of learning situations for the use of TEL integration was considered and planned by the learners.

Math, Science, and Other (general) categories of TEL plans demonstrated the highest levels of active learning environments.

While the majority (52%) of TEL plans were developed for entry levels of technology integration, adaptive integration was also demonstrated in a significant way (33%). This indicates that teachers are planning to use technology in their classrooms for a significant amount of student-led learning. There were no transformational levels of technology integration evident in any of the TEL plans.

English Language Arts (ELA), Healthcare, and Other (general) categories of TEL plans demonstrated the highest proportions of entry level technology integration.

Discussion

> *"It was totally a good experience. Although I knew about MOOC but I never tried learning any on-line course. It was my first course and TEL-MOOC gave me confidence that I can enroll and complete an on-line course. I am a research student and my research involve teachers computer anxiety. This course will help me to develop a program for teachers in future."*
>
> - M. T., India, TEL MOOC participant

TEL MOOC was a productive collaboration between the Commonwealth of Learning and Athabasca University, and a successful course, as indicated by survey results and learner engagement data.

As one of the world's leading institutions in distance and distributed learning, Athabasca University was particularly well qualified to develop and deliver this innovative online course grounded in strong learning theory and a high level of expertise in technology-enabled learning, supported by the global network and infrastructure of the Commonwealth of Learning. With over 100 certificates awarded to participants from over 25 countries across 5 continents, TEL MOOC is an example of how massive open online courses can provide effective learning opportunities to participants across the Commonwealth and worldwide.

TEL MOOC was also a valuable learning opportunity for Athabasca University, extending its knowledge, experience, and capacity in developing and delivering large-scale, open courses for a diverse global audience. Through an intensive design process, the development team produced a unique course with several notable features including:

- multimodal content, including video lectures and summaries,
- incorporation of open educational resources throughout,
- a high level of interactivity through online discussions and live chat sessions,
- active facilitation by the facilitator and a team of trained teaching assistants,
- responsiveness to diversity in language, culture, and technological access, and
- authentic and context-relevant assessment through activity plans, leading to the creation of a public, open repository of participant-generated OER.

Each of these features, as well as the course experience as a whole, will provide important research avenues for both Athabasca University and the Commonwealth of Learning, and will be of interest to the broader distance and international learning research communities.

Preliminary findings based on the end-of-course survey indicate a high level of satisfaction with the course, its materials, and its activities, along with an expectation by most respondents that TEL MOOC will have a positive impact on their teaching practice. As the first delivery of a new course on a new platform, there are some specific areas for improvement, identified both by the development team and by survey respondents, as will be discussed in the Recommendations below.

In sum, TEL MOOC was a positive experience with expectations for long-term benefit to its partner organizations, the course development and facilitation team, and its participants.

Lessons Learned

Feedback gathered from the design team instructors and facilitators in terms of what worked well in TEL MOOC and what didn't work well is summarized in this section. Several of these points stem from participant comments and questions throughout the course delivery, and preliminary findings of the end of course survey. This feedback has helped inform and reinforce the lessons learned from the first offering of TEL MOOC.

Areas that Worked Well

- The Read, Review, Respond, Explore, and Assess your Learning model used for each content topic seemed to provide sufficient direction for students to get the most out of the content presented.

- The course material and activities provided relevant information and facilitated learner achievement of outcomes.

- The facilitator's videos and announcements, especially the weekly summaries of highlights of the week, provided excellent opportunities to clarify and summarize the learning for the week.

- The section on OER was excellent and learners were able to model effective use of such resources.

- Technical support provided by TEL MOOC instructional and support team members was quick and efficient, tending to minor glitches and issues students encountered during the course.

- Having a direct line of communication in the real time Hangout sessions was a great feature, allowing participants to ask questions and receive immediate feedback, foster a sense of community, and perhaps alleviate anxiety and feelings of isolation participants may have been experiencing.

- Facilitation in numbers. Having a group of teaching assistants allowed for distribution of the workload and allowed assistants to keep up with the increasing learner engagement as new participant-generated forums were being created.

- Weekly meetings and communication behind the scenes. Communication conducted in the background, outside of TEL MOOC, was helpful for keeping everyone informed. The weekly meetings (a) provided a venue to share ideas and discuss issues arising in the course and upcoming events such as the Hangouts, (b) provided feedback on the week's activity, and (c) established a common approach for moving forward. These meetings also helped develop a sense of community among the TEL MOOC design and instructional team.

- The Activities pages and Resources section of TEL MOOC were excellent. This material provided both participants and the instructional group a structured, well-organized document outlining the workflow for each content topic, and a central location to access course material and resources.

- The three layers of instruction provided effective and unique dimensions of teaching presence in the course. The live Hangouts can be viewed as a fourth layer of instruction.

- Participants expressed appreciation for the course extension. These extra days were well-utilized, according to the participation data and additional assignments submitted during that time period.

- The TEL MOOC Resources site was ideal for submitting and sharing lesson plans. It allowed participants to contribute to the creation of an OER repository which will remain as a searchable database of technology enabled lesson plans and expanded upon with each iteration of TEL MOOC.

- The issuing of certificates through the mooKIT team worked well. Also, communication with the mooKIT team was efficient and they were responsive to requests, questions and issues that arose during the delivery of TEL MOOC.

Areas for Improvement

- Without the ability to thread discussions, learners expressed some confusion, and the effectiveness of the forums as a learning aid was limited.

- Learner profiles need to be visible to all participants in order to foster networking and meaningful peer to peer connections. The ability of any learner to contact another learner is critical.

- Functionality across platforms. Freezing and odd behaviors were experienced with the Hangout when accessing from Android and iPad devices.

- Participants experienced confusion regarding some aspects of the course navigation, the process for submitting assignments, time zones, and the channel for requesting technical assistance at the beginning of the course.

- The fact that participants were able to access course content as soon as it was uploaded to mooKIT prevented course designers from uploading draft material beforehand and performing adequate testing, hence issues were not identified until after the course began, which can negatively impact the quality of a course offering.

- Participants were disappointed that they could not communicate directly with one another within the mooKIT platform.

- Learners were confused as to where to post discussions in the beginning, e.g., some discussions were posted to the Lecture and Assignments section.

- Scheduling of the Hangout sessions did not accommodate the time zones of some participants.

Lessons Learned

The points below describe lessons learned from the TEL MOOC experience, based on personal reflections from the design and instructional team, including the comments listed above regarding what

worked well and what aspects of TEL MOOC could be improved. Informal participant feedback during the course offering and preliminary observations from the survey data also contributed to these comments. These lessons learned underpin the subsequent set of recommendations for TEL MOOC.

- During the delivery of TEL MOOC it became apparent that it can be difficult for learners to engage in sustained discourse in asynchronous discussion forums without the ability to thread discussion posts. In the absence of the threading feature, the sharing of ideas, building of knowledge and the creation of a learning community which often results from sustained dialogue may be compromised.

- Technical issues reported by TEL MOOC participants were acknowledged and addressed in a timely manner. This is critical, especially early in the course when participants are becoming acquainted with the learning environment, course structure, and perhaps even online learning in general. Participants of TEL MOOC expressed appreciation for the prompt attention to technical difficulties. If not attended to almost immediately, technical issues can have a negative impact on course retention.

- Ongoing dynamic instruction, as provided by the facilitator in TEL MOOC, provides customized learning based on the unique needs of the learners by responding to the current activity in the course through feedback, clarifying concepts or other aspects of the course delivery, relating updates, and posting announcements. This type of instruction demonstrates genuine interest in the participants' learning experience, hence motivating participants to remain engaged in the course.

- The majority of course participants were pleased with the level of teaching assistant presence in the TEL MOOC discussion forums. The ongoing presence of teaching assistants seemed to provide a sense of security to learners, comforted in knowing that the teaching assistants were there if and when needed, reducing feelings of isolation which is often a leading concern in the online learning environment.

- Weekly meetings held during the delivery of TEL MOOC provided the instructional team an opportunity to share thoughts, provide feedback, seek advice, discuss changes, and establish a common approach moving forward, providing for a more cohesive, learner-centred course delivery. These meeting also provided the opportunity for the design and instructional team to support one another and created a sense of community among team members.

- The live synchronous chat sessions, the Hangouts, were well received by participants. Learners expressed appreciation for the opportunity to converse with an instructor in real time. In order to increase participation in these live sessions in the future, sessions need to align better with participants' time zones and should be promoted earlier in the course so learners can plan accordingly.

- There were a few technical glitches, platform expectations and limitations, and implications of integrated technologies and media discovered after TEL MOOC began. This can sometimes prove detrimental to the course delivery and learner experience. Ideally, all features of the platform, additional tools to be used, and integrated media such as Facebook should be tested prior to course activation.

- Providing learners with an overall picture of the entire course can help provide a better understand of the course structure and how the various components fit together and function within the platform. A course site map, for example, can serve as an advanced organizer,

providing insight into what's involved with the course, how it works, and what to expect. This information can help participants plan their level of participation, map out their learning path based on their own individual needs, and manage their time effectively throughout the course.

- Some participants of TEL MOOC reported feeling uneasy or anxious about the course coming to an end. Just as learners need to be provided with resources and support at the beginning of a course, the same holds true toward the end of the course. Learners sometimes wonder what to do next. They may be interested in advancing their expertise in the area, or they may be interested in forming a social media group to maintain contact with other participants. Supporting learners as they detach from the course demonstrates concern for the participants' learning experience and is an important element of a quality learning experience.

- Time zone sensitivity is important. Most online courses, especially MOOCs, involve participants from multiple time zones. TEL MOOC was a prime example, having participants spread across the globe. To provide as accessible a learning experience as possible, the course offering should be carefully planned in accordance to the time zones of course participants. While it is not always possible to accommodate all participants for every aspect of the course, efforts should be made to include as many participants as possible. Information should be provided to participants at the beginning of the course regarding the default time zone used in the course and a tool (or link to a tool) that participants can use to convert the course time to their local time zone.

- The final assignment for TEL MOOC, required to earn a Certificate of Completion, was the creation of a technology-enabled lesson plan. Learners were clearly motivated by the opportunity to apply the course materials to create an artifact that meets their own personal needs. This project enabled participants to create a practical take-away from TEL MOOC and also allowed learners to contribute to the creation of an OER repository.

Recommendations

Based on the Lessons Learned from the first iteration of TEL MOOC and general reflection on the overall experience, a set of recommendations have been formulated and grouped under the headings of facilitation, navigational aids, and platform enhancements, followed by some specific suggestions for the instructional design of TEL MOOC.

As the first iteration of a new course on a relatively new platform, and as the first product of a new collaborative partnership between the Commonwealth of Learning and Athabasca University, TEL MOOC was a learning experience on many levels. A number of recommendations have already been identified, and others will emerge through additional research.

Facilitation

> *"I missed the hang out discussions because of the time frame. However, the near future i am suggesting that separate hang out sessions could be held to accommodate some of us."*
>
> - O. T., Antigua and Barbuda, TEL MOOC participant

TEL MOOC was presented by an instructor and supported by a facilitator and a team of seven teaching assistants - a large facilitation team for a MOOC of this size. Nevertheless, 50% of end-of-course survey respondents indicated they would like about the same level of facilitator involvement, while a further 42% would like more or much more. The highly international nature of this MOOC meant that a significant number of participants, particularly in regions such as Asia and Africa, may have been underserved in terms of facilitator presence and timely feedback, simply due to the differences in time zones. This also proved to be a challenge for the live Hangout chat sessions.

We therefore recommend that future offerings of TEL MOOC should try at least to maintain its current level of facilitation, including live instructional presence, guidance and administrative announcements, and summary materials on a weekly basis, and should make efforts to offer facilitation across a wider range of time zones or post office hours to highlight when facilitators are in fact available.

Navigational Aids

> *"Availability of clear instruction about the website and TELMOOC features functioning and game rules. I for example ''saved'' (instead of ''Submit'') Week 5 Quizz and it just went off definitively. I did not know that 'SAVE' was not allowed."*
>
> - T., Rwanda, TEL MOOC participant

The participants were widely diverse in language and technical ability. Although the development team anticipated some challenges for participants in understanding the course structure and navigating through the platform, there was still a considerable amount of misunderstanding and confusion. We therefore recommend spending more time up front to guide participants through the course, including visual aids or maps for non-native English speakers and a greater emphasis on the introduction to mooKIT during the first week of the course.

Some adjustments to mooKIT may also help in this regard, including:

"free HTML" content blocks within the participant interface, to allow for posting text instructions, graphic aids, and detailed menus or site maps,
the ability to modify instructions on quizzes and other features.

Platform Enhancements

> *"It would be great if you could contact particular students directly. The hangout wasn't really helpful as you had to scroll back and forth through the feed to see responses to your questions/discussions. Same with the forums."*
>
> - M. P., Canada, TEL MOOC participant

mooKIT has a number of positive characteristics, including its flexibility to accommodate low bandwidth or mobile users and its impressive analytics capabilities. We appreciated the responsiveness of the mooKIT team to the specific requirements of TEL MOOC and anticipate that the platform will continue to develop over time. Some directions we would like to see in that development include:

- a greater range of assessment options beyond multiple-choice and true-and-false quizzes,
- the ability to incorporate text and other formats of instruction alongside the video lectures,
- participant dashboards for tracking completed and incomplete requirements, and
- refinement of the discussion, chat, and other communication functions.

Regarding the final point, the inability to thread messages in the discussions or to reply to specific comments in the chat meant that both the discussion and chat tended to be long, unstructured streams of messages, with little support for constructing knowledge by building upon the earlier messages of others or for creating dialogue and a sense of community between learners. This was particularly true for the Topic Activity forums, which in some cases approached 100 messages, all presented as having the same depth. (Such lengthy forums may be unique to the design of TEL MOOC compared to other mooKIT courses; the participant-generated forums were much shorter and were, in effect, threaded by having large numbers of distinct forums.)

We therefore recommend that the mooKIT team explore ways to enhance the discussion and Hangout chat functions to allow for threading, click-to-reply, and other structural options such as direct messaging to support replies and improved dialogue and collaboration.

Instructional Design

Specific instructional design suggestions include:

- Expand upon the orientation section to include a site map, time zone information, tips for discussions, netiquette, navigation information, and perhaps a narrated tour of the course site.

- Continue with the three layers of instruction as well as the synchronous Hangout sessions but perhaps add more synchronous sessions and accommodate more time zones; voice capabilities would be beneficial for Hangouts and the ability to record the sessions.

- Due to the critical nature of technical support in online courses, it may be helpful to explicitly designate a forum and technical support person to establish this connection when the course begins.

- Perhaps plan to extend the course by a few days but don't announce this until the end is approaching.

References

Cleveland-Innes, M., Briton, D., Gismondi, M., & Ives, C. (2014). MOOC instructional design principles: ensuring quality across scale and diversity. Poster presented at *MOOCs in Scandinavia Conference*, Stockholm, Sweden.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2-3), 87–105.

Gasevic, D., Kovanovic, V., Joksimovic, S., & Siemens, G. (2014). Where is research on massive open online courses headed? A data analysis of the MOOC Research Initiative. *The International Review of Research in Open and Distributed Learning, 15*(5).

Swan, K., Van Prooyen, T., Day, S., & Bogle, L. (2014). AMP: A tool for characterizing the pedagogical approaches of MOOCs. *e-mentor, 2*(54), 75-85.

Appendices

A. Informational and Promotional Materials
- Course Description
- Course Brochure

B. Announcement List and Example Announcement

C. TEL Activity Plans

D. Pre-course Survey

E. End-of-course Survey

F. TEL MOOC Course Content and Weekly Summary
- Weekly Course Content
  - Week 1: Models of Technology-Enabled Learning
  - Week 2: Technology in Education
  - Week 3: Open Educational Resources
  - Week 4: Application of Technology
  - Week 5: Creating Technology-Enabled Learning
- Example Summary
  - Week 1: Models of Technology-Enabled Learning

Appendix A
Informational and Promotional Materials

The following course description appeared on the TEL MOOC registration page at http://www.telmooc.org (shown to the left).

Course Description

Teachers who want to learn more about teaching with technology will find this Massive Open Online Course (MOOC), Introduction to Technology-Enabled Learning (TEL), informative and engaging. Using up-to-date learning design and simple, accessible technology, the course runs on an easy-to-use learning platform available via the Internet. The course is designed for teachers who want to build on their knowledge and practice in teaching and learning with technology. It will run over five weeks and requires approximately three to five hours of time each week. Designed to accommodate teachers' busy schedules, the course offers flexibility with options for learning the content. You will learn from readings, videos, discussions with other participants and instructors.

Learning Outcomes

Participants will:

- Meet online with teachers all over the world who are also learning about technology-enabled learning
- Be supported by instructors who understand technology-enabled teaching and learning
- Explore easy-to-use technologies for classroom and online teaching
- Evaluate best fit technologies for teaching/learning contexts
- Experience a fun and collaborative learning environment via the Internet
- Receive a certificate on completion of required activities

Who Should Participate?

Introduction to Technology-Enabled Learning is designed for teachers in diverse contexts - secondary education, post-secondary education and vocational education. You will benefit from this course if you are teaching face-to-face or in a distance/online environment. Anyone interested in improving teaching and learning would enjoy participating in this MOOC.

Contents Covered

Week 1
Learners will investigate technology-enabled learning activities that make use of a wide range of educational technologies:

- successful learning approaches implemented by educators in various teaching contexts;
- open and available resources that support technology-enabled activities; and
- teaching presence in the context of technology-enhanced learning environments.

Week 2
Learners will explore various educational technologies to enhance teaching and learning through review and discussion of:

- the purpose and types of educational technologies;

- the unique opportunities provided by educational technologies; and
- how specific educational technologies enhance the teaching and learning experience.

Week 3
Learners will examine the application of educational technologies to address challenges in different educational contexts:

- how content, pedagogy and education technologies are interrelated;
- when to integrate educational technologies, subject matter and pedagogy to enhance teaching and learning; and
- the processes for selection and application of educational technologies to address particular challenges in different teaching contexts.

Week 4
Learners will develop and share a plan for technology-enabled learning in their own teaching and learning context by:

- creating a practical application of educational technology;
- sharing and explaining a personal, practical application of educational technologies; and
- discussing the challenges in creating technology-enabled learning plans.

Week 5
Learners will reflect upon the role teaching presence with technology and the processes used to develop educational technology-enabled lessons, including:

- learning theory and activities which could work in their individual teaching context;
- potential roadblocks and challenges to implementation of technology-enabled learning; and
- how technology can support teaching presence.

Certification

Two levels of certification are available based on your level of participation and completion of tasks/activities:

- *Certificate of Participation:* requires participation in at least 3 discussion forums and completion of quizzes.
- *Certificate of Completion:* requires 60% on all quizzes, participation in at least 3 discussion forums and the creation and sharing of a technology-enabled object

Meet the Instructors

Dr M. Cleveland-Innes is Professor and Chair in the Centre for Distance Education at Athabasca University in Alberta, Canada. She has been teaching for 35 years in all areas of education, face-to-face and online. Martha has received awards for her work on the student experience in online environments and holds a major research grant through the Canadian Social Sciences and Humanities Research Council. In 2011 she received the Craig Cunningham Memorial Award for Teaching Excellence and in 2009 she received the President's Award for Research and Scholarly Excellence from Athabasca University. She is currently Guest Professor at The Royal Institute of Technology in Stockholm, Sweden. Her work is well published in academic journals in North America and Europe.

Dr N. Ostashewski is Assistant Professor in the Centre for Distance Education at Athabasca University in Alberta, Canada. He has been utilizing technology in teaching since 1990, both at the K12 and graduate education level. For the past 20 years Dr Ostashewski has been training teachers how to incorporate

technology into “worth-it” classroom, blended, and online activities. His current research areas include iPads in the classroom, networked teacher professional development, MOOC design and delivery and collaboration technologies in teaching. In 2012, he was invited to work in Western Australia at Curtin University assisting professors in implementing technology-enhancements for courses with up to 1500 students. His latest book is titled “Optimizing K12 Education through Blended and Online Learning” and he has several open access publications available online.

Meet the Instructors

Dr M. Cleveland-Innes is Professor and Chair in the Centre for Distance Education at Athabasca University in Alberta, Canada. She has been teaching for thirty-five years in all areas of education, face-to-face and online. Martha has received awards for her work on the student experience in online environments and holds a major research grant through the Canadian Social Sciences and Humanities Research Council. In 2011 she received the Craig Cunningham Memorial Award for Teaching Excellence and in 2009 she received the President's Award for Research and Scholarly Excellence from Athabasca University. She is currently Guest Professor at The Royal Institute of Technology in Stockholm, Sweden. Her work is well published in academic journals in North America and Europe.

Dr N. Ostashewski is Assistant Professor in the Centre for Distance Education at Athabasca University in Alberta, Canada. He has been utilizing technology in teaching since 1990, both at the K12 and graduate education level. For the past 20 years Dr Ostashewski has been training teachers how to incorporate technology into "worth-it" classroom, blended, and online activities. His current research areas include iPads in the classroom, networked teacher professional development, MOOC design and delivery and collaboration technologies in teaching. In 2012, he was invited to work in Western Australia at Curtin University assisting professors in implementing technology-enhancements for courses with up to 1500 students. His latest book is titled *Optimizing K12 Education through Blended and Online Learning* and he has several open access publications available online.

Certification

Two levels of certification are available based on your level of participation and completion of tasks/activities:

- **Certificate of Participation:** requires participation in at least 3 discussion forums and completion of quizzes.
- **Certificate of Completion:** requires 60% on all quizzes, participation in at least 3 discussion forums and the creation and sharing of a technology-enabled object

Registration

To register, please go to:
http://www.telmooc.org

For more information:

Commonwealth of Learning
4710 Kingsway, Suite 2500
Burnaby, BC V5H 4M2 CANADA

Tel: +1 604 775 8200 **Fax:** +1 604 775 8210
Email: info@col.org **www.** col.org

Dr Sanjaya Mishra, Education Specialist, e-Learning

Athabasca Univeristy [info to be provided]

COMMONWEALTH of LEARNING Athabasca University

MOOC

Introduction to

Technology-Enabled Learning

9 January 2017 - 10 February 2017

LEARNING FOR SUSTAINABLE DEVELOPMENT

Course Description

Teachers who want to learn more about teaching with technology will find this Massive Open Online Course (MOOC), *Introduction to Technology-Enabled Learning* (TEL), informative and engaging. Using up-to-date learning design and simple, accessible technology, the course runs on an easy-to-use learning platform available via the Internet. The course is designed for teachers who want to build on their knowledge and practice in teaching and learning with technology. It will run over five weeks and requires approximately three to five hours of time each week. Designed to accommodate teachers' busy schedules, the course offers flexibility with options for learning the content. You will learn from readings, videos, discussions with other participants and instructors, meaningful exercises, quizzes and short assignments. Certification is available for those who wish to complete all required exercises and quizzes.

Learning Outcomes

Participants will:

- **Meet online with teachers all over the world who are also learning about technology-enabled learning**
- **Be supported by instructors who understand technology-enabled teaching and learning**
- **Explore easy-to-use technologies for classroom and online teaching**
- **Evaluate best fit technologies for teaching/ learning contexts**
- **Experience a fun and collaborative learning environment via the Internet**
- **Receive a certificate on completion of required activities**

Who Should Participate?

Introduction to Technology-Enabled Learning is designed for teachers in diverse contexts – secondary education, post-secondary education and vocational education. You will benefit from this course if you are teaching face-to-face or in a distance/ online environment. Anyone interested in improving teaching and learning would enjoy participating in this MOOC.

Length of the Course: Five Weeks
Schedule: 9 January 2017 to 10 February 2017
Workload: 3 to 5 hours per week
Level: Introductory
Language: English
Prerequisites: None

Course Description

Week 1 Learners will investigate technology-enabled learning activities that make use of a wide range of educational technologies:

- successful learning approaches implemented by educators in various teaching contexts;
- open and available resources that support technology-enabled activities; and
- teaching presence in the context of technology-enhanced learning environments.

Week 2 Learners will explore various educational technologies to enhance teaching and learning through review and discussion of:

- the purpose and types of educational technologies;
- the unique opportunities provided by educational technologies; and
- how specific educational technologies enhance the teaching and learning experience.

Week 3 Learners will examine the application of educational technologies to address challenges in different educational contexts:

- how content, pedagogy and education technologies are interrelated;
- when to integrate educational technologies, subject matter and pedagogy to enhance teaching and learning; and
- the processes for selection and application of educational technologies to address particular challenges in different teaching contexts.

Week 4 Learners will develop and share a plan for technology-enabled learning in their own teaching and learning context by:

- creating a practical application of educational technology;
- sharing and explaining a personal, practical application of educational technologies; and
- discussing the challenges in creating technology-enabled learning plans.

Week 5 Learners will reflect upon the role of teaching presence with technology and the processes used to develop educational technology-enabled lessons, including:

- learning theory and activities which could work in their individual teaching context;
- potential roadblocks and challenges to implementation of technology-enabled learning; and
- how technology can support teaching presence.

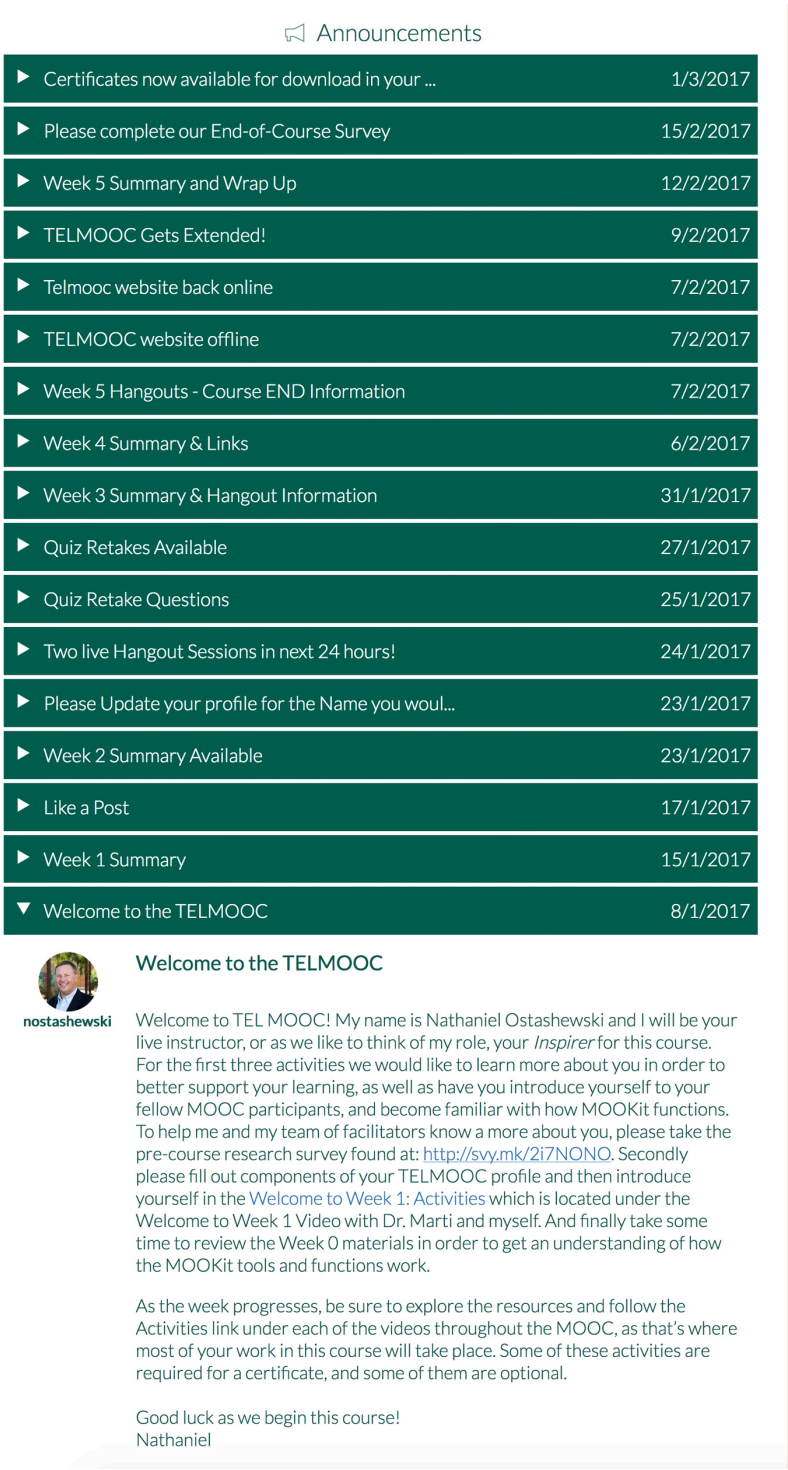
DEVELOPMENT • INNOVATION • ENGAGEMENT • TRANSFORMATION

Course brochure produced by the Commonwealth of Learning.

Appendix B

Announcement List and Example Announcement

The Facilitator posted several announcements during the course. The complete list is given here, along with the Welcome announcment.



Appendix C
TEL MOOC Videos

The following videos were integrated into the mooKIT platform and remain available on YouTube. Unless otherwise indicated, the videos were presented by Dr. Martha Cleveland-Innes.

Course Introductions

Welcome to TEL MOOC, with Dr. Sanjaya Mishra (2:08)
https://www.youtube.com/watch?v=9MeWvjtr1ts

Welcome to Week 1, with Dr. Martha Cleveland-Innes and Dr. Nathaniel Ostashewski (1:45)
https://www.youtube.com/watch?v=GxkrMXk86Sc

Week One

1.1: Community of Inquiry (5:39)
https://www.youtube.com/watch?v=O8eKm1IBUIk

1.2: Two Models: TPACK and TIM (5:15)
https://www.youtube.com/watch?v=aedH0hnNSiI

1.3: On Teaching Presence (5:41)
https://www.youtube.com/watch?v=j6ET-j26Xng

Week Two

2.1: Integrating technology in Education (6:12)
https://www.youtube.com/watch?v=lgKkIGxT-xk

2.2: Benefits of Technology in Education (3:41)
https://www.youtube.com/watch?v=sdexy65bUs8

Week Three

3.1: Understanding OER (3:48)
https://www.youtube.com/watch?v=5UENJpQ3vzM

3.2: Types of Open Licenses (3:12)
https://www.youtube.com/watch?v=SYnA6hDKqAw

3.3: Finding OER (3:42)
https://www.youtube.com/watch?v=mfl7HaI7lv0

Week Four

4.1: Practical Applications of Technology (4:40)
https://www.youtube.com/watch?v=tJXUo_6VuO8

4.2: Getting Help with Technology (3:58)
https://www.youtube.com/watch?v=14pUj2e6gfw

Week Five

5.1: Creating Technology enabled Learning (6:39)
https://www.youtube.com/watch?v=AteHzeR_67s

Appendix D
TEL Activity Plans

Participants who opted to post TEL Activity Plans as open educational resources to the TEL Resources repository were asked to annotate their plans with metadata. The following summaries are based on the participant-assigned metadata as of May 31, 2017 and do not include activity plans uploaded to the course LMS.

See http://www.telresources.org/resources (shown at left) for current data and to browse associated plans.

Plans by Level	
Elementary	17
Secondary	27
Tertiary	30
Vocational	11
Plans by Modality	
Classroom-based	28
Blended	45
Online	14
Plans by Technology	
Internet	66
Social Media	12
Text	30
Audio	13
Video	44
Image	10
Presentation software	25
Spreadsheet	6
Organizer	10
Whiteboard	35
Mobile devices	7
Plans by Country (Top 7)	
Antigua and Barbuda	13
India	12
Canada	7
Kenya	6
Bangladesh	5
Sri Lanka	5
Lithuania	5

Appendix E
Pre-course Survey

Participant Consent

January 9, 2017
Dear Participant:

We are researchers at Athabasca University and the Commonwealth of Learning. We invite you to participate in a research study entitled "Understanding the Experience of Technology-Enabled Learning". The purpose of this study is to create a detailed picture of the participant experience in this MOOC.

Your participation will involve completing three short surveys: one at the beginning of the course, one in Week 3, and one after the course has finished. Each survey will take between 5 and 10 minutes to complete. Some participants may also be contacted for a more detailed interview. This interview takes between 15 and 20 minutes in total.

Data about your general course participation, such as the assignments you submit and the time spent on different course activities, is also of interest to us. Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled. If you decide to stop or withdraw from the study, the information/data collected from or about you up to the point of your withdrawal will be kept as part of the study and may continue to be analyzed.

In either case, all information collected in this study will remain confidential. No individually-identifiable information about you, or provided by you during the research, will be shared outside the research/instructional team without your written permission. All research data will be kept on a secure drive for which only the principal researchers and instructional assistants will have access. Identifying information of participants will be removed from any reports that are seen by anyone other than the principal researchers and instructional assistants. The results of the research study may be published but your name or any identifying information will not be used. The published results will be in summary form only.

The findings from this project may provide information on how to improve the quality of learning experiences in other online courses. There are no known risks or discomforts associated with this research. If you have any questions about this research project, please feel free to contact Dr. Martha Cleveland-Innes via email at martic@athabascau.ca. This study has been reviewed by the Athabasca University Research Ethics Board. Comments or concerns regarding your treatment as a research participant should be directed to the Office of Research Ethics at 1-800-788-9041, ext. 6718 or via email at rebsec@athabascau.ca.

Use the buttons below to indicate whether you agree to participate in the research project described above. To correlate the surveys with your general course participation, we will also require the email address you used to register in TEL MOOC. If you choose to consent to a follow-up interview, we may use this email address to contact you; your email address will not be used for any other purpose or shared with anyone outside the research team.

Please download and print a copy of this letter for your records.

Thank you.

Sincerely,
Martha Cleveland-Innes PhD, Chair, Centre for Distance Education, Athabasca University

Survey Questions

Where do you live?

- Europe/UK
- North America
- Caribbean/Central America
- South America
- South Asia/Indian subcontinent
- Asia
- Oceania
- Middle East
- Africa

Please specify your country.

What is your primary spoken language?

- English
- Other (please specify)

What is your gender?

- Male
- Female

What is your age group?

- Under 20
- 20-29
- 30-39
- 40-54
- 55 and over

What is your highest educational qualification?

- Secondary/high school diploma
- College certificate or diploma
- Vocational school certificate or diploma
- Bachelor degree or equivalent
- Master degree or equivalent
- M.Phil or equivalent
- PhD or equivalent

What is your teaching experience?

- Education student
- Less than 5 years

- 6-15 years
- 16-25 years
- More than 25 years

What does your job involve? (select all that apply)

- Face-to-face teaching
- Distance education
- Online teaching or facilitating
- Blended/hybrid teaching face-to-face and distance or online)
- Work-based training
- Research
- Management/administration
- Education support services
- Other (please specify)

If your job involves teaching, at which levels do you teach? (select all that apply)

- Early education
- Elementary
- Secondary/high school
- College
- Vocational school
- University

How would you rate your current skill level when performing the following tasks? (none, basic, proficient, or advanced)

- Using standard computer programs (word processor, email, etc.)
- Using social media (Facebook, Twitter, etc.)
- Creating digital media (video, blogs, etc.)
- Teaching or supporting learners through technology

How did you find out about this course?

- Commonwealth of Learning website
- Commonwealth of Learning newsletter
- Course brochure
- Athabasca University
- Email notification
- Social media
- Colleagues/workplace
- OpenUpEd
- PCF8
- Other (please specify)

What is your primary reason for taking this course?

- General interest in technology-enabled learning
- Professional development (contributing to your CV, for example)
- Obtaining a certificate
- General interest in MOOCs

- Other (please specify)

Which of the following best describes your intention to complete this MOOC?

- To browse the course contents, but not planning to complete the course
- Planning to complete some course activities, but not planning to earn a certificate of completion
- Planning to complete all activities to earn a certificate of completion
- Have not decided whether I will complete any course activities

Do you consent to be contacted to participate in a follow-up interview as indicated in the consent form?

- Yes, I consent to be contacted
- No, I do not consent to be contacted

Appendix F
End-of-course Survey

Participant Consent

The end-of-course survey used the same participant consent letter as in the pre-course survey. See Appendix E.

Survey Questions

Please provide us with your feedback by indicating your level of agreement to the following statements (strongly disagree, disagree, neutral, agree, strongly agree).

- TEL MOOC met the learning objectives.
- The amount of time I spent on the course met my expectations.
- The workload was manageable.
- The pace of the course was comfortable for my learning.
- The course activities reinforced the course material.
- The course activities did a good job of triggering my thinking.
- The course activities did a good job of holding my interest.
- The course material was of good quality.
- Assignments were helpful to acquire knowledge and skills.
- The quizzes helped to test my knowledge.
- I experienced direct instruction during TEL MOOC.
- My learning was supported through facilitation by the Inspirer.
- My learning was supported through facilitation by the roving instructors.
- My learning about TEL was supported through my discussions with other students.
- My learning about TEL was supported by reading other student posts.
- TEL MOOC discussions provided me with information about resources that I will be able to use in my own teaching.
- I felt like I was part of a community in the TEL MOOC.
- It was okay to express emotion in TEL MOOC forums.
- The course website was user-friendly.
- The TEL MOOC experience will assist me in the use of educational technology for teaching and learning.
- Overall, I was satisfied with TEL MOOC.

Please indicate the level of instructor and facilitator involvement you would have liked to have had in TEL MOOC.

- Much more instructor and facilitator involvement
- Somewhat more instructor and facilitator involvement
- About the same level of instructor and facilitator involvement
- Less instructor and facilitator involvement
- I felt no need for instructor or facilitator involvement

Which weekly activities did you complete or do you expect to complete? (Please select all that apply.)

- Less than one week
- Week One activities, discussions, and quiz
- Week Two activities, discussions, and quiz
- Week Three activities, discussions, and quiz
- Week Four activities, discussions, and quiz
- Week Five activities, discussions, and quiz
- A TEL Activity Plan

What suggestions do you have for the instructor and/or course design team?

If you would like to provide general feedback on TEL MOOC, please enter it here.

Appendix G
TEL MOOC Course Content and Weekly Summary

The attached documents were made available for download to participants through the Resources section of the course.

The five weekly course content documents include full topic video transcripts, activity instructions, and details on resources.

A sample weekly summary document is also included. As with the course content documents, the five weekly summary documents were available for download through the course Resources section and highlighted participation trends, selected contributions during the week, further discussion prompts, and facilitator's reflections.

TEL MOOC 2017

WEEK 1: Models of Technology-Enabled Learning

Video transcripts, activities, and resources

telmooc.org

Athabasca University and the Commonwealth of Learning

Athabasca University

Commonwealth of Learning

Learning for Sustainable Development

TECHNOLOGY-ENABLED LEARNING

TEL MOOC 2017

WEEK 1: Models of Technology-Enabled Learning

Video transcripts, activities, and resources

telmooc.org

Athabasca University and the Commonwealth of Learning

Athabasca University

COMMONWEALTH of LEARNING

Learning for Sustainable Development

1.0 Welcome to TEL MOOC!

This page provides you with a basic overview of TEL MOOC, followed by your first two activities for the course.

Course Instruction
This course is led by Dr Nathaniel Ostashewski, who provides instruction with Dr Marti Cleveland-Innes, both of Athabasca University in Canada. You will also find a team of facilitators in the course forums to provide you with support as required.

Course Structure
TEL MOOC takes place over five weeks. Each week will look similar and will include a short series of lecture videos. Under each video, you will find a link to a set of Topic Activities: material to read, review, and respond to, with optional explore and self-assessment activities if you would like to look more closely into the content. Selected, openly-licensed documents are also available in the course Resources section.

Course Certificates
- To earn a Certificate of Participation, you must participate (post at least one message) in at least three course Activity forums and complete all five quizzes with at least 60% on each.
- To earn a Certificate of Completion, you must do everything required for a Certificate of Participation and submit a TEL Activity Plan in Week 4 or Week 5.

(All certificates will be issued by email after the end of the course.)

Where to Get Help
If you have questions or need help at any time during the MOOC, post a question to the facilitators in the forums or send us an email at telmooc@athabascau.ca.

Now visit the forum titled "Welcome to Week 1: Activities" to introduce yourself to your fellow MOOC participants, facilitators, and instructors. Please also take a moment to complete our pre-course survey.

RESPOND
Introduce yourself to your fellow participants by telling them something about your background, teaching environment, or any particular interests or experience you might have with technology-enabled learning. (If you are working towards a course certificate, please note that this forum *does not count* towards the minimum of three discussion posts, but we encourage you to post anyway.)

ANSWER
Please complete our Pre-Course Survey. Be sure to read through the participant consent letter for information on how your answers will be used and protected. The link to the precourse survey is:
https://www.surveymonkey.com/r/telmooc2017precourse

1.1 The Community of Inquiry

1.1.1 VIDEO TRANSCRIPT

Hello, TEL MOOC participants. My name is Dr. Marti Cleveland-Innes and I'm one of your instructors in this course called Technology Enabled Learning. I'm a professor at Athabasca University in Canada and a visiting researcher at the Royal Institute of Technology in Sweden. These topic videos will help introduce you to each topic in the course and will remind you of your learning activities for each topic.

Welcome to Week 1, Topic 1. Our first topic is the Community of Inquiry, sometimes called CoI. We're starting here because using technology for learning means setting a foundation for new ways of thinking about teaching and learning. Using technology provides many opportunities to enable learning but brings with it expectations for a new role for teachers and for learners. Why is this important? Teachers need two skills beyond their subject knowledge: (1) basic technology skills and comfort with tech tools and (2) pedagogical practice aligned with meaningful student centred learning. This week is a review of the pedagogy that supports new learning with technology. The Community of Inquiry model is how we will work together in this course and a model you can consider using in your classrooms, face-to-face, blended, or online. In order to do this, you must look at the model from your view as a student in this course and then as a teacher. This model takes into account the value that comes from learning together. Here the technology is used to improve connections and collaboration for a meaningful learning experience.

Based on constructed social learning theory the model identifies actions in the Community of Inquiry that lead to social presence, cognitive presence, and teaching presence. Here are the definitions for you:

Social presence is the ability of participants to identify with other people in the community, communicate purposefully in a trusting environment, and develop interpersonal relationships by way of projecting their individual personalities. This happens through open communication, expression of feelings, and group togetherness.

Cognitive presence means the extent to which learners are able to construct and confirm meaning for sustained reflection and discourse in a critical Community of Inquiry. To go through the four stage process, students experience the following thinking steps: First, they respond to a cognitive trigger, 2. they explore the new idea, 3. they integrate the idea into their own context and 4. resolve or accept the idea or solution for themselves.

Teaching presence is defined in three different elements: design, facilitation, and direct instruction. The direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes. This direction comes from the instructor and, as appropriate, from the students.

Each presence has its own elements and strategies that need to be understood for teachers to create this community and foster an environment for engaged deep learning. You will see in your readings a chart that looks like this. Please review carefully so you can see how the elements of a CoI hang together. Note that each presence has three or four underlying critical elements and that in the third column there are things to do and to watch for when creating a Community of Inquiry in your classroom. You will read more about these elements and how they are applied in the assigned reading for this topic. This is your Topic 1 video. There's also reading to explain this topic further.

Read Chapter 6 in Teaching and blended environments - creating and sustaining Communities of Inquiry. You're also going to respond to forum questions: What do you see as beneficial about the CoI as a way to understand technology learning for your students? What possible challenges do you see?

You're going to review the document, Collaborative Learning Technologies, and finally, assess yourself - identify an area where you want to learn more. Best wishes.

1.1.2 ACTIVITIES

After each lecture, you will be asked to read, review, and respond as required activities. You will also be presented with optional explore and self-assessment activities to take a deeper look into the lecture's topic. After the final lecture of each week, you will be asked to complete a quiz.

Participating by replying to the Respond questions of at least three Activity forums and completing all five weekly quizzes with at least 60% is required for a Certificate of Participation. A Certificate of Completion also requires the posting of a completed TEL Activity Plan in Week 4 or Week 5.

READ
Vaughan, Cleveland-Innes, & Garrison (2013). Teaching in Blended Learning Environments: Creating and Sustaining Communities of Inquiry. This chapter is available in the course Resources section, or you can download the chapter or entire book by selecting "Free PDF" at http://aupress.ca/index.php/books/120229.

REVIEW
Review the range of collaborative technologies and their applications in the document, Collaborative Learning Technologies, available in the course Resources section or at http://tinyurl.com/collaborativecommunity.

RESPOND
Throughout this MOOC, use the Activity Forums to respond to key questions based on the video lectures, readings, and your own experience. In the forum titled "The Community of Inquiry: Activities", reply to the forum post with your responses to:

> ***What do you see as beneficial about the CoI as a way to understand technology-enabled learning for your students? What possible challenges do you see?***

EXPLORE
Watch the video at https://www.youtube.com/watch?v=pZQm8Fta93k. It is an instructor talking to students about what a community of inquiry is. Consider how you would introduce your students to a community of inquiry.

ASSESS YOUR LEARNING
Identify an area where you feel you want to learn more. Say how you will arrange to learn more.

Now use the forum titled "The Community of Inquiry: Activities" to reply to the RESPOND question above.

1.2 TPACK and TIM

1.2.1 VIDEO TRANSCRIPT

Hello again everyone. By now you have met the other instructors and are, I hope, feeling comfortable and present in this technology-enabled learning space. This week, two more models created to help teachers consider technology enabled learning will be reviewed. Just like the theoretical framework about a Community of Inquiry, all these models consider that using technology requires thoughtful consideration of pedagogy.

Remember, we said that there are two things that have to be created for technology enabled learning to be successful. There must be: understanding of the technology (how to use it) and the pedagogy that goes with it. The CoI focuses on pedagogy for any type of delivery. It is a foundation of actions for teachers and learners. The next two models work to bring technology and pedagogy together.

The first model is called the **TPACK** model: technological, pedagogical, content knowledge. It's a framework that identifies the knowledge teachers need to teach their subject effectively with technology. The TPACK also adds the view of the subject itself as a key to TEL. The model creators believe and I quote here, "effective technology integration for pedagogy around specific subject matter requires developing sensitivity to the dynamic; the relationship between three components of knowledge situated in unique contexts. Your context is complicated and specific to the individual teachers, grade level, school-specific factors, demographics, culture, and other factors because every situation is unique and no single combination of content, technology and pedagogy will apply for every teacher, every course, or every view of teaching." (TPACK Explained, http://www.matt-koehler.com/tpack/tpack-explained/).

At the heart of TPACK framework is the complex interplay of three primary forms of knowledge: **content**, **pedagogy**, and **technology**. The TPACK approach goes beyond seeing these three knowledge bases in isolation. TPACK also emphasizes the new kinds of knowledge that lie at the intersections between them, representing four more knowledge bases teachers apply to teaching with technology. Pedagogical-content-knowledge, technological- content-knowledge, technological-pedagogical-knowledge, and the intersection of all three circles: technological-pedagogical-content–knowledge.

The second model puts together environment characteristics with ways to integrate technology. Here is a description from the website about this model. The **Technology Integration Matrix**, or TIM, illustrates how teachers can use technology to enhance or enable learning for K to 12 students. The TIM incorporates five interdependent characteristics of meaningful learning environments: active, constructive, goal-directed, authentic and collaborative. The TIM associates five levels of technology integration: entry, adoption, adaptation, infusion and transformation, with each of the five characteristics of meaningful learning environments. Together, the five levels of technology integration and the five characteristics of meaningful learning environments creates a matrix 25 cells as illustrated in the slide.

Here are your learning activities for this week. Read about TPACK and TIM frameworks. Reflect on how these models may be applied. Respond to your forum questions of how are these two model similar? How are they different? How would you use one or the other to apply technology? Review by identifying two technology applications that you would like to use in your own classroom, and finally, assess yourself- create a list of 3 to 5 bullet points of ideas or applications you've learned this week and want to remember. Good luck.

1.2.2 ACTIVITIES

As mentioned in the previous lecture, you are asked to read, review, and respond as required activities. You can also choose to complete the optional explore and self-assessment activities to take a deeper look into this topic.

READ
Go to http://tpack.org to review TPACK and http://fcit.usf.edu/matrix/matrix.php to review TIM. Pay close attention to how this model might be applied.

REVIEW
Identify two technology applications you would like to use in your own classroom. You can include these in your answer to the Respond question below.

RESPOND
Reply to the forum titled "TPACK and TIM: Activities" with your responses to:

How do these two models look similar? How are they different? How would you use one or the other to apply technology?

EXPLORE
There are many ways to think about technology. The video identified below reviews the definition of technology and how it applies in education. Ask yourself what technology you currently use, and why you might want to change it. https://www.youtube.com/watch?v=D17P3kqB3_0

ASSESS YOUR LEARNING
Create a list in your own notes of three to five bullet points of ideas or applications you've learned this week and want to remember.

Now use the forum titled "TPACK and TIM: Activities" to reply to the RESPOND question above.

1.3 On Teaching Presence

1.3.1 VIDEO TRANSCRIPT

Hi again, everyone. It's Dr. Marti again with more information about TEL. I'm happy to see the activity in mooKIT and I'm learning things from your contributions.

Your last topic for Week 1 is focussed on teaching with technology. There is no other more important requirement for quality education than good teaching. What does that mean for fostering technology enabled learning? You'll be reading some ideas about teaching with technology offered by Tony Bates, a Canadian academic very famous for his work about teaching with technology. In his latest book called *Teaching in a Digital Age,* Tony reminds us about the work of two other researchers, Chickering and Gamson (1987), who gave us seven teaching principles to guide instructors.

More recently, Norm Vaughan, Randy Garrison, and I suggested an updated version of these seven principles with a view to principles that take technology enabled learning into account. These are: design your courses for open communication and trust, design your courses for critical reflection and discourse, create and sustain a sense of community by connecting students to each other, support purposeful inquiry through problem-based learning and dialogue, ensure students sustain collaboration by giving them the opportunity to lead in the course, and ensure that inquiry moves to resolution by facilitating cognitive presence and bringing closure to the inquiry, ensure assessment is congruent with intent of learning outcomes and use technology where possible.

Take time to think about what these principles mean to you and which ones you already use. Then go back to the chapter you looked at in Topic 1. There are technology tools listed at the website you visited where Dr Norm Vaughan discusses the specific tools and activities. Consider what you might use and what principles would apply when using the tools.

This week you will fill out a worksheet about teacher and student actions to create community while teaching, especially for technology enabled learning. These indicators are especially for teachers. Just like the CoI framework describes, teaching involves three categories: design and organization, facilitation, and direct instruction. For example, in design and organization, one of the indicators is that the instructor clearly communicated important course topics. Another indicator is: the instructor provided clear instructions on how to participate in course learning activities.

An indicator of facilitation is when the instructor is helpful in guiding the class toward understanding course topics in a way that helps students clarify their thinking. Another facilitation indicator is where instructor actions reinforce the development of a sense community among course participants.

Under direct instruction, indicators are things like: the instructor helps to focus discussion on relevant issues in a way that help students learn; the instructor provides feedback in a timely fashion.

At the end of Week 1, you'll have reviewed three models combining technology and pedagogy, considered the role of the teacher, and the things you will do when using technology to enable student learning. You've completed assignments and participated actively in these activities and on the discussion board. This week, read Tony Bates' chapter 11 in his book *Teaching in a Digital Age.* Respond in the forum to the following questions: Technology can provide opportunities for students to work together to learn skills and knowledge. How would you encourage and support peer teaching when using technology?

Review again what Dr. Norman Vaughan says about technology tools and complete the worksheet of indicators for the Community of Inquiry. Add up your score when you do and consider what you learned from the exercise. This

week your assessment will be a quiz on all three topics. My best wishes.

1.3.2 ACTIVITIES

The read, review, and respond activities below are required. The explore activity is optional. The weekly quiz is required for a Certificate of Participation.

READ
Bates, T. (2016). *Teaching in a Digital Age*. Chapter 11: Ensuring quality teaching in a digital age. Unit 3: Decide how you want to teach. https://opentextbc.ca/teachinginadigitalage/chapter/11-3-step-one-decide-how-you-want-to-teach/.

REVIEW
Consider again what Dr. Norman Vaughan says about technology tools and complete the worksheet of indicators for the Community of Inquiry (see the course Resources section or Appendix to this document). Add up your score as directed on the worksheet and consider what you learned from the exercise.

RESPOND
Reply to the forum titled "On Teaching Presence: Activities" with your responses to:

> ***Technology can provide opportunities for students to work together to learn skills and knowledge. How would you encourage and support peer teaching when using technology?***

EXPLORE
There are many pieces to the process of rethinking and applying new technology to enable learning. This short video reviews key aspects of online learning environments and what students should do with them. https://www.youtube.com/watch?v=CPAybysg0Gk

ASSESSMENT
Complete the quiz for this week. Passing the quiz with at least five correct answers is required for a Certificate of Participation.

ANSWER
If you have not yet completed our Pre-Course Survey, please do so now at https://www.surveymonkey.com/r/telmooc2017precourse. Thank you for your time; the information you provide on our surveys will be very valuable to us and to future TEL MOOC participants.

Now use the forum titled "On Teaching Presence: Activities" to reply to the RESPOND question above.

RESOURCES

Vaughan, Cleveland-Innes, & Garrison. (2013). *Teaching in Blended learning environments: Creating and sustaining communities of inquiry.* Download Chapter 6 at http://aupress.ca/index.php/books/120229

Collaborative learning technologies. http://tinyurl.com/collaborativecommunity

Guthrie, O. Online pedagogy: Community of Inquiry. https://www.youtube.com/watch?v=pZQm8Fta93k

TPACK. http://tpack.org/

Technology Integration Matrix (TIM) framework. http://fcit.usf.edu/matrix/matrix.php

Toppo, G. A different way to think about technology in education. TEDxAshburn. https://www.youtube.com/watch?v=D17P3kqB3_0

TPACK explained. http://www.matt-koehler.com/tpack/tpack-explained/

Bates, T. (2016). *Teaching in a digital age. Chapter 11. Ensuring quality teaching in a digital age.* https://opentextbc.ca/teachinginadigitalage/chapter/11-3-step-one-decide-how-you-want-to-teach/.

Chickering, A. W., & Gamson, Z. F. (1987). *Seven principles for good practice in undergraduate education.* AAHE Bulletin, 3, 7.

Cover photo: International Institute for Communication and Development (IICD) https://www.flickr.com/photos/iicd/5349210090

Community of Inquiry Educator Survey

Read each statement and answer based on a course you are currently teaching, or your overall design and teaching practice. NOTE that strongly disagree is first, receiving a score value of 1. Once completed, please follow the scoring instructions on page 3. If you have questions, please ask a TELMOOC facilitator for further instruction.

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Students in my course can describe ways to test and apply the knowledge learned.	1	2	3	4	5
2. My actions reinforce the development of a sense of community among course participants.	1	2	3	4	5
3. Students in my course are motivated to explore content related questions.	1	2	3	4	5
4. Course activities pique students' curiosity.	1	2	3	4	5
5. I acknowledge emotion expressed by the students in my course.	1	2	3	4	5
6. I clearly communicate important due dates/time frames for learning activities.	1	2	3	4	5
7. Students in my course are able to form distinct impressions of some other course participants	1	2	3	4	5
8. I clearly communicate important course goals.	1	2	3	4	5
9. I provide feedback in a timely fashion.	1	2	3	4	5
10. I provide feedback that helps students understand strengths and weaknesses relative to the course goals and objectives.	1	2	3	4	5
11. I help to identify areas of agreement and disagreement on course topics in a way that helps students to learn.	1	2	3	4	5
12. Students feel comfortable disagreeing with other course participants while still maintaining a sense of trust.	1	2	3	4	5
13. Reflection on course content and discussions helps students understand fundamental concept	1	2	3	4	5
14. Expressing emotion in relation to sharing ideas is acceptable in my course.	1	2	3	4	5

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
15. Online discussions are facilitated in a way that is valuable for helping students appreciate different perspectives.	1	2	3	4	5
16. I encourage course participants to explore new concepts in my course.	1	2	3	4	5
17. I clearly communicate important course topics.	1	2	3	4	5
18. Combining new information helps students answer questions raised in course activities.	1	2	3	4	5
19. Brainstorming and finding relevant information helps students resolve content related questions.	1	2	3	4	5
20. In my role as instructor, I demonstrate emotion in my presentations and/or when facilitating discussions, online or face-to-face.	1	2	3	4	5
21. Learning activities helps students construct explanations/solutions.	1	2	3	4	5
22. Students feel his/her point of view is acknowledged by other course participants.	1	2	3	4	5
23. I keep the course participants on task in a way that helps them to learn.	1	2	3	4	5
24. Students utilize a variety of information sources to explore problems posed in my course.	1	2	3	4	5
25. I keep course participants engaged and participating in productive dialogue.	1	2	3	4	5
26. Students' feel comfortable interacting with other course participants.	1	2	3	4	5
27. I provide clear instructions on how to participate in course learning activities.	1	2	3	4	5
28. I find myself responding emotionally about ideas or learning activities in my course.	1	2	3	4	5
29. Getting to know other course participants gives students a sense of belonging in my course.	1	2	3	4	5
30. Students feel comfortable conversing online or face-to-face in my course.	1	2	3	4	5
31. Online or web-based communication is an excellent medium for interaction with and among my students.	1	2	3	4	5

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
32. Problems posed increase student interest in course content.	1	2	3	4	5
33. Students feel comfortable expressing emotion through the online medium or in the face-to-face classroom.	1	2	3	4	5
34. I help to focus discussion on relevant issues in a way that helps students to learn.	1	2	3	4	5
35. Students can apply the knowledge created in my course to his/her work or other non-class related activities.	1	2	3	4	5
36. Students feel comfortable participating in course discussions.	1	2	3	4	5
37. Students develop solutions to relevant problems that can be applied in practice.	1	2	3	4	5
38. I am helpful in guiding the class towards understanding course topics in a way that helps students clarify his/her thinking.	1	2	3	4	5
39. Online or face-to-face discussions can help students to develop a sense of collaboration.	1	2	3	4	5
40. Emotion is expressed, online or face-to-face, among the students in my course.	1	2	3	4	5

Reference: Cleveland-Innes, M. Reflections on teaching. *Teaching for Flexible, Blended Learning.* Invited presentation, KTH Royal Institute of Technology, Stockholm, Sweden.

CoI Coding – Instructor Version

The first table below lists the question numbers for each indicator (eg. Questions 26, 30, and 36 for Open Communication). For each indicator, add together the answers you provided for the questions identified, and divide by the number of answers for an average score.

When you have a single, averaged score for each indicator, put in the scoresheet on the next page and calculate the total scores for each type of presence. An interpretation of the scoring is given at the end of the next page.

	Social Presence (SP)	Cognitive Presence (CP)	Teaching Presence (TP)	Emotional Presence (EP)
Open Communication	26 + 30 + 36/3			
Personal Expression	7 + 29 + 31 + 39/4			
Group Cohesion	12 + 2 + 22/3			
Triggering Event		3 + 4 + 32/3		
Exploration		15 + 19 + 24 + 35/4		
Integration		13 + 18 + 21/3		
Resolution		1 + 37/2		
Direct Instruction			9 + 10 + 34/3	
Facilitation			11 + 16 + 23 + 25 + 38/5	
Design and Organization			6 + 8 + 17 + 27/4	
With TP				5 + 20/2
With SP				33 + 40/2
With CP				14 + 28/2

Totals	Social Presence (SP)	Cognitive Presence (CP)	Teaching Presence (TP)	Emotional Presence (EP)
Open Communication				
Personal Expression				
Group Cohesion				
SP SCORE (add numbers above)				
Triggering Event				
Exploration				
Integration				
Resolution				
CP SCORE(add numbers above)				
Direct Instruction				
Facilitation				
Design and Organization				
TP SCORE (add numbers above)				
With TP				
With SP				
With CP				
EP SCORE (add numbers above)				

Once you have your scores, go back and check the elements as defined by the CoI framework. If your average scores are 3.5 or above, you are on your way to using the pedagogical strategy to create learning community, but have some improvements to make. Less than 3.5, you have some valuable growth opportunities! Give yourself a gold start for anything 4.5 or above. Share what you learned from this exercise.

TECHNOLOGY-ENABLED LEARNING

TEL MOOC 2017

WEEK 2: Technology in Education

Video transcripts, activities, and resources

telmooc.org

Athabasca University and the Commonwealth of Learning

Athabasca University

COMMONWEALTH of LEARNING

Learning for Sustainable Development

2.1 Integrating Technology in Education

2.1.1 VIDEO TRANSCRIPT

Welcome back. This video introduces you to Week 2, Topic 1: Integrating Technology in Education. This week, we begin our discussion identifying several reasons why educators are integrating technology into their teaching. Consider the title of this MOOC, "Technology Enabled Learning". It is certainly true that today's digital technologies are a key element of TEL, but what is most important is how these technologies are used in order to support learning.

First, let's consider what we are talking about when we use the broader phrase, "technology in education". Technology in education has been defined by the Association for Educational Communications and Technology as, "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources". (Education Technology; http://www.instructionaldesigncentral.com/whatisinstructionaldesign).

So technology can refer to much more than computers, tablets, or the Internet. In this MOOC when we talk about technology enabled learning we are referring to digital tools and media rich resources. In other words, computers, the internet, social media, mobile and tablet devices, open education resources, online videos and documents, just to name a few. These digital technologies are the focus of this MOOC as they are what 21st-century learners will need in order to explore, understand and express themselves.

It's important to remember that technology in education can be implemented in many different ways and for various purposes. An example of this diverse toolset is seen in the explosion of Web 2.0 or social media tools on the internet over the past several years. Regardless of the diversity of tools, when we look at the research and practice in teaching, there are six main uses for technology in education. These are: using the technology to communicate, search, collaborate, create, assess, and development. Let's examine each purpose in greater detail.

Communicate. This happens with video conference tools and chat. These are particularly useful for connecting with others without being bound to physical space or geographic location.

Search. This uses search tools, libraries, databases and resources. Technology tools can often help filter information based on specific criteria and to cross-check sources for its reliability or origins. Search tools are used all around the world and are often widely available.

Collaboration. Shared documents on the cloud, Web 2.0 tools, Google Docs, Padlet are some examples. Many educational technologies utilize the internet as a way to create, share, and edit content collaboratively with multiple users. These tools allow for group brainstorming, distributing team roles, and providing immediate feedback in real time.

Create. Here we produce multimedia content, video scripts and infographics. A great deal of educational technology encourages learners to produce their own multimedia content, infographics, etc. Creating content allows learners to utilize higher order thinking and evaluate content critically, then share with others in a meaningful way.

Assess. Here you can use grading tools, Web 2.0 tools, and quizzes. Many educational technologies allow for greater customization of assessments for both teachers and learners. Assessment items can be designed to provide immediate and constructive feedback and also allows learners to work at their own pace. In addition, assessment tools or rubrics can be quickly revised, shared with others, and can perform calculations automatically to save marking time.

Professional development. These are things like teacher PD, networking, other kinds of resources. Technology tools can also be used to support and facilitate professional development. Some of these tools, Twitter as an example, allow teachers to connect with other professionals and share resources. Additionally, these tools can be used to help gather useful resources from conference events, etc.

Directions for your readings and discussions are available on the MOOC site. Remember that the learning model for this course is to create a Community of Inquiry. Connect with your fellow students. You have material to read but we will then discuss with others in the forums. There are additional learning activities for you to assist in your review of this topic, as well as some assessment opportunities. Enjoy.

2.1.2 ACTIVITIES

The read, review, and respond activities below are required. The explore and self-assessment activities are optional.

READ

The U.S. Department of Education identified evidence of the value of blended learning in its report, Evaluation of Evidence-Based Practices in Online Learning. Available in the course Resources section or at

https://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf

REVIEW

1. The U.S. Department of Education also provides examples of K-12 schools using TEL. See
   https://www.ed.gov/oii-news/use-technology-teaching-and-learning

for examples. Here is the first paragraph from the website to give a review of their position on TEL:

> "Technology ushers in fundamental structural changes that can be integral to achieving significant improvements in productivity. Used to support both teaching and learning, technology infuses classrooms with digital learning tools, such as computers and handheld devices; expands course offerings, experiences, and learning materials; supports learning 24 hours a day, 7 days a week; builds 21st century skills; increases student engagement and motivation; and accelerates learning. Technology also has the power to transform teaching by ushering in a new model of connected teaching. This model links teachers to their students and to professional content, resources, and systems to help them improve their own instruction and personalize learning."

2. Campbell County School District offers TEL to students. Review the district's website at
   http://web.ccsd.k12.wy.us/techcurr/index.html

to see a few examples of how it uses technology in different grades and different subjects.

RESPOND

Reply to the forum titled "Integrating Technology in Education: Activities" with your responses to:

What do teachers need to bring new technologies into the classroom? How can you, in your situation, get what you need to add technology that you feel is valuable into you classroom?

EXPLORE

Athabasca University offers a training program for teachers that leads to credit in graduate school. They are supported by CANLearn, the Canadian support group for TEL. See what they do at

http://canelearn.net/cider-session-november-4-2015-blended-and-online-learning-and-teaching-bolt-promoting-teaching-for-21st-century-learning/

ASSESS YOUR LEARNING

Write a paragraph about the support available to you where you work: support that will provide more information, training, and perhaps resources for you to move forward with TEL. Share this paragraph in the forum titled

"Integrating Technology in Education: Activities".

Now use the forum titled "Integrating Technology in Education: Activities" to reply to the RESPOND question above.

2.2 Benefits of Technology in Education

2.2.1 VIDEO TRANSCRIPT

Hi everyone. Welcome to Topic 2 for Week 2: Benefits of Technology in Education. How does technology add to teaching or learning? While there are many different kinds of learning activities in education, we can think of them as being in two main categories: activities that use the technology and activities that don't.

In the past, teachers and other professionals including doctors and lawyers relied primarily on low technology tools: approaches such as reading, writing, speeches, manipulative visual aids, role play, games, and so on. Now technology is everywhere, so it's not only advantageous to include some in teaching and learning, it's critical to engaging learners in a meaningful and effective way.

Many K-to-12 schools now utilize online educational social networks to connect teachers, parents and students together to communicate or report attendance, academic progress, school events, and activities.

In 1996, Jonasson penned what is become a common way to categorize how students interact with technology: learning about technology or technology as a subject, learning from technology where technology is used as a delivery tool, and learning with technology - technology as a cognitive partner. In his seminal work on mind tools, Jonasson encouraged teachers to go beyond the typical uses of computers to engage students in what we term in this course as technology-enabled learning.

According to Jonasson and Reeves (1996), technology is best used when **students**, not teachers, use it as a cognitive partner or tool to access and analyze information, interpret and transform that information into their own personal knowledge, and then represent that knowledge to others.

This week in your reading, reflections, and discussion with others we want you to consider the value, the benefits, affordances and drawbacks of technology. Technology, knowledge, skills and application are key skills for the 21st-century. Using technology in schools prepares our students for this. Is there anything they might miss using new technology? Consider this and other possible drawbacks as you look at the benefits of technology.

Removing Obstacles to Pedagogical Changes Required by Jonasson's Vision of Authentic and Technology-Enabled Learning is your reading for this week. Make sure you remember to read, review, respond, and assess.
Thank you and enjoy.

2.2.2 ACTIVITIES

The read, review, and respond activities below are required. The explore and self-assessment activities are optional. The weekly quiz is required for a Certificate of Participation.

READ
Ertmer, P. A., & Ottenbreit-Leftwich, A. (2013). Removing obstacles to the pedagogical changes required by Jonassen's vision of authentic technology-enabled learning.

http://ltc-ead.nutes.ufrj.br/constructore/objetos/2%ba%20artigo%20-%20Removing%20obstacles%20to%20the%20pedagogical%20changes.pdf

REVIEW
Things have changed and new technology has been added since Jonasson talked about technology. Your reading this week says, "As noted by Greenhow, Robelia, and Hughes (2009), Web 2.0 tools have the capacity to connect

learners to a wide network of critical others who can offer feedback or support." In keeping with Jonasson's view that technology in the hands of the student enables cognition, Greenhow, Robelia, & Hughes apply this to Web 2.0 tools. Review this article at

http://journals.sagepub.com/doi/full/10.3102/0013189X09336671

RESPOND

Reply to the forum titled "Benefits of Technology in Education: Activities" with your responses to:

Is there anything they might miss using new technology? Consider this and other possible drawbacks as you look at the benefits of technology.

EXPLORE

Where will you find other teachers involved in transforming education with new pedagogy and technology? Look for professional organizations in your area involved in TEL. You can also look for global organizations and review their websites. Membership fees can be a barrier, but websites are often full of references and resource ideas. Have a look at https://www.iste.org, the site for the International Society for Technology in Education, and http://www.distancelearningportal.com/partners/eadtu, the site for the European Association for Distance Teaching in Universities.

ASSESS YOUR LEARNING

Create a list of professional organizations you wish to explore. Identify, review, and share your ideas with participants. See http://www.studying2.com/instructional-technology for ideas on organizations, if you need it.

ASSESSMENT

Complete the quiz for this week. Passing the quiz with at least five correct answers is required for a Certificate of Participation.

Now use the forum titled "Benefits of Technology in Education: Activities" to reply to the RESPOND question above.

RESOURCES

Jonassen, D. H., & Reeves, T. C. (1996). Learning with technology: using computers as cognitive tools. In D. H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (pp. 693–719). Bloomington, IN: Association for Communications and Technology.

The U.S. Department of Education. *Evaluation of Evidence-Based Practices in Online Learning.* https://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf

The U.S. Department of Education. *Use of Technology in Teaching and Learning.* https://www.ed.gov/oii-news/use-technology-teaching-and-learning

The Campbell County School District. http://web.ccsd.k12.wy.us/techcurr/index.html

Athabasca University. *Blended and Online Learning and Teaching (BOLT): Promoting Teaching for 21st-Century Learning.* http://canelearn.net/cider-session-november-4-2015-blended-and-online-learning-and-teaching-bolt-promoting-teaching-for-21st-century-learning/

Ertmer, P. A., & Ottenbreit-Leftwich, A. (2013). Removing obstacles to the pedagogical changes required by Jonassen's vision of authentic technology-enabled learning. *Computers & Education, 64,* 175-182. Retrieved from http://ltc-ead.nutes.ufrj.br/constructore/objetos/2%ba%20artigo%20-%20Removing%20obstacles%20to%20the%20pedagogical%20changes.pdf

Greenhow, C., Robelia, B., & Hughes, J. E. (2009). Learning, teaching, and scholarship in a digital age Web 2.0 and classroom research: What path should we take now? *Educational Researcher, 38*(4), 246-259. Retrieved from http://journals.sagepub.com/doi/full/10.3102/0013189X09336671

International Society for Technology in Education. https://www.iste.org

European Association for Distance Teaching in Universities. http://www.distancelearningportal.com/partners/eadtu/

Instructional Technology, Studying2.com, Education Directory. http://www.studying2.com/instructional-technology/

Cover photo: One Laptop per Child
https://www.flickr.com/photos/olpc/4882646127

TECHNOLOGY-ENABLED LEARNING

TEL MOOC 2017

WEEK 3: Open Educational Resources

Video transcripts, activities, and resources

telmooc.org

Athabasca University and the Commonwealth of Learning

Athabasca University

COL Commonwealth of Learning

Learning for Sustainable Development

3.1 Understanding Open Educational Resources (OER)

3.1.1 VIDEO TRANSCRIPT

Welcome to Week 3. By now you should be well aware of the benefits and challenges of using technology enabled learning, aware of the models used to ensure technology and pedagogy work together, and know some of your fellow participants. This week starts by defining **open educational resources**. An open educational resource is defined as a digital, self-contained unit of self-assessable teaching with an explicit measurable learning objective, having an open license clearly attached to allow adapting and generally being free of cost for reuse (Kawachi, 2014).

Generally this means that educators can make use of OER in their teaching practice if and when the teacher decides the materials are suitable for their teaching content. There is however challenges in accessing OER, finding ones that are related to the curriculum you're teaching, and of course of suitable quality for use in the classroom.

With access to the internet we can find OER for almost any type and level of education, from K-to-12 through to post-secondary education. OER can also include resources for professional development and workplace training as well as informal learning tools that might even include areas of personal interest or hobbies. OER and open education in general provide endless opportunities for learners and an unprecedented base of resources for teachers.

One way that we can begin to understand the challenges of OER is to explore what other educators have identified as the key quality assurance for OER. The **TIPS framework** for quality assurance criteria for teachers as authors of OER is based on the findings of educational researchers and was validated by teachers as useful for themselves and other teachers. It provides a starting point for understanding OER material. The four layers of the TIPS framework relate to aspects of an OER's quality.

T is for teaching and learning processes. **I** is for information and material content. **P** is for presentation, product and format. And **S** is for system, technical and technology.

While we don't have time in this course to fully explore the layers of the TIPS framework or its 38 quality criteria, this is something you can refer to when you are searching, selecting, or even authoring OER for your classroom.

We encourage you to take a few minutes reviewing the TIPS framework PDF that we've provided for you. There is so much to learn about using OER in technology enabled learning. Remember to look at selective reading and the videos for content in this MOOC. Discussion is also key. Talk to your fellow participants in the forums. There's also opportunity to review and assess your learning. Enjoy.

3.1.2 ACTIVITIES

The read, review, and respond activities below are required. The explore, self-assessment, and survey activities are optional.

READ

1. Kawachi, P. (2014). Quality assurance guidelines for open educational resources: TIPS framework. Available in the course Resources section or at http://cemca.org.in/ckfinder/userfiles/files/TIPS%20Framework_Version%202_0_Low.pdf
2. Habler, Neo, and Fraser (2014). Open Education and the Schools Sector. Available in the course Resources section or at http://oer.educ.cam.ac.uk/w/images/5/5a/G1_Open_Education_and_the_Schools_Sector.pdf

REVIEW
Review quality assessment at http://www.slideshare.net/AshishKumar70/framework-to-assess-the-quality-of-open-education-resources-oer.

RESPOND
Reply to the forum titled "Understanding OER: Activities" with your responses to:

What do you identify as the two most important aspects of OER for your classroom? If you have used OER in your classroom, what has been a challenge that you can share with others in the course?

EXPLORE
To consider other points about openness, watch Dr David Wiley's TED Talk on Openness in Education at https://www.youtube.com/watch?v=Rb0syrgsH6M

ASSESS YOUR LEARNING
After reviewing some of the comments of your peers in the discussion forum, consider and record what you feel are the top three qualities of OER.

ANSWER
If you have used any OER prior to this course, consider participating in an OER Use survey at https://www.surveymonkey.com/r/oermovement to see what kinds of questions are being currently researched about OER.

Now use the forum titled "Understanding OER: Activities" to reply to the RESPOND question above.

3.2 Types of Open Licenses

3.2.1 VIDEO TRANSCRIPT

Hello again. Now that you've been introduced to OER, we want to tell you about types of licenses. When we talk about OER, there are a variety of copyright terms that relate to the type of use the authors intended for their work. When exploring OER, you will likely come across terms like fair use, fair dealing, remixing, share alike, no derivatives, and many more. But what do these terms means for you as an educator? In this topic we will take a closer look at these licenses.

Open education resources fall under a variety of license types with the **Creative Commons** license systems being one of the most widely used. There are six Creative Commons licenses that provide a wide range of acceptable uses for the OER, from very open licenses such as CC BY that allow the user to distribute, remix, and even add to a commercial work, to much more restrictive licenses such as CC BY NC ND that only allow users to download and share with others.

The two main elements that determine the type of Creative Commons license attached to an OER are:
- whether or not the resource is available for commercial use
- whether the creator allows derivatives of the resource which means that the resources can be altered and reused or repurposed.

In order to better understand the Creative Commons licenses we would like you to spend a few minutes exploring the Creative Commons licenses on their website, which you'll find in your resources in mooKIT. As well, the document *Understanding Open Licensing* is an excellent guide developed by Bjorn Hebler, Helen Neo and Josie Fraser. It's published by the Leicester City Council and was published under a Creative Commons BY license.

Finally, we've included a short video that explains how to choose a Creative Commons license. Please take the time to review these three resources that you've been provided with so that you could have a full understanding of OER and its copyrights.

3.2.2 ACTIVITIES

The read, review, and respond activities below are required. The explore and self-assessment activities are optional.

READ
1. Habler, Neo, and Fraser (2014). *Understanding Open Licensing*. Available in the course Resources section or at http://oer.educ.cam.ac.uk/w/images/0/0b/G2_Understanding_Open_Licensing.pdf
2. Choosing a Creative Commons License (video). https://www.youtube.com/watch?v=Fh8bEoOKFrg

REVIEW
Spend some time reviewing the Creative Commons website descriptions of their licences. https://creativecommons.org/licenses

RESPOND
Reply to the forum titled "Types of Open Licenses: Activities" with your responses to:

Were you previously aware that some open resources have conditional licenses? Have you ever made your own material available through Creative Commons licensing? What were your choices, or what would your choices be in the future, for sharing your work through a Creative Commons license (what type of licence would you choose)?

EXPLORE
MOOCs are another type of open resource that can provide an excellent source of continuing professional development. Some MOOCs and MOOC platforms to explore are Participating in the Digital Age MOOC at http://www.curtincommons.com, FutureLearn in the UK, Open2Study in Australia, Canvas in US, and Learning to Learn Online.

ASSESS YOUR LEARNING
Think about the kinds of OER that you have found in your searches this week and think about what kind of modifications you will need to make in order to meet the educational and technological contexts where you teach.

Now use the forum titled "Types of Open Licenses: Activities" to reply to the RESPOND question above.

3.3 Finding OER

3.3.1 VIDEO TRANSCRIPT

Hello again. By now you should be aware of how OER can fit when using technology enabled learning in your teaching. Now that we know more about OER and the copyright permissions that are attached to them, let's start finding and sharing.

There are potential challenges to keep in mind when you search for OER. For example, a certain resource may work perfectly well on your computer system, but it doesn't necessarily mean that it will work well for your students. Or, does the resource have a suitable level of material for your students or the curriculum you're teaching? As we have pointed out at the beginning of the week, suitability for your curriculum and instructional purposes are two of the key elements of selecting OER. Just like searching for anything on the internet, finding good resources takes time and practice and this is what we want to help you with in this topic.

So where can you find quality OER on the internet? While many resources can be found using popular search engines like Google or Yahoo, OER are more effectively found in online repositories collected for that purpose. You've likely heard of open access videos; video repositories such as Khan Academy and Teacher Tube are repositories for open source videos, while dedicated and organized OER repositories are also starting to become more common.

So let's review a few questions to keep in mind when looking for OER. Is the skill level appropriate for your students? Does the resource match the curriculum you're teaching? Is the resource easily modified with the computer technologies you have available? What speed of internet connection is required to access the OER? These are some of the questions you should keep in mind when you search for OER. This is what we'd like you to spend some time doing for the remainder of this week.

The video we've provided in the Resource section is a detailed description of search techniques for finding OER and how you do an OER search on the Creative Commons website. You can also use Google to search and we'll show you that as well. While we've provided a couple examples of OER repositories, we are looking forward to you sharing some of the OER you find in the discussion forum. There is much reading to do on this topic and the other topics in this course. Share your views on what you have time to read with other participants. Remember to take time to review the topics and your ideas based on them. Also, assessment is a powerful tool for solidifying learning.

3.3.2 ACTIVITIES

The read, review, and respond activities below are required. The explore and self-assessment activities are optional. The weekly quiz is required for a Certificate of Participation.

READ

1. Watch the video OER Search Techniques. https://www.youtube.com/watch?v=0dMJzt5w_dk.
2. Explore the OPEN website's page, Find OER. https://open4us.org/find-oer/

REVIEW

Explore the OER Commons Website. https://www.oercommons.org

RESPOND

After viewing the OER Search Techniques video, spend some time finding a couple OER that you can see trying out in your classroom over the next few months. Post the link to the OER as well as a short explanation of why you

selected the OER in the forum titled "Finding OER: Activities".

EXPLORE
In this explore activity, we would like to curate a list of OER websites or repositories around the globe so that we can continue to share even after this course is over. Digital curation, which is the collection and organization of URLs, is one way in which we can share online resources with other teachers. One social media tool that help us with this sharing is Scoop.it. Take a few minutes to explore TEL MOOC's OER Scoop.it page at http://www.scoop.it/t/open-education-resources-1. If you would like to contribute a URL to your favorite OER website, post your link to the forum titled "Finding OER: Activities" and ask for it to be included in Scoop.it.

ASSESSMENT
Complete the quiz for this week. Passing the quiz with at least five correct answers is required for a Certificate of Participation.

Now use the forum titled "Finding OER: Activities" to reply to the RESPOND question above.

RESOURCES

Kawachi, P. (2014). *Quality assurance guidelines for open educational resources: TIPS framework.* Commonwealth of Learning.

Habler, Neo, and Fraser (2014). Open Education and the Schools Sector. http://oer.educ.cam.ac.uk/w/images/5/5a/G1_Open_Education_and_the_Schools_Sector.pdf

Ashish Kumar Awadhyla. Framework to Assess the Quality of OER. http://www.slideshare.net/AshishKumar70/framework-to-assess-the-quality-of-open-education-resources-oer

Wiley, D. TED Talk on Openness in Education. https://youtu.be/Rb0syrgsH6M

Habler, Neo, and Fraser (2014). Understanding Open Licencing. http://oer.educ.cam.ac.uk/w/images/0/0b/G2_Understanding_Open_Licensing.pdf

Choosing a Creative Commons License. https://youtu.be/Fh8bEoOKFrg

Creative Commons. https://creativecommons.org/licenses/

Participating in the Digital Age MOOC. http://www.curtincommons.com

OER Search Techniques. Commonwealth of Learning. https://youtu.be/0dMJzt5w_dk

OPEN. Find OER. https://open4us.org/find-oer/

OER Commons. http://www.oercommons.org

TELMOOC OER Scoop.it. http://www.scoop.it/t/open-education-resources-1

Cover photo: TESS-India
https://www.flickr.com/photos/98655236@N06/9913515773

TECHNOLOGY-ENABLED LEARNING

TEL MOOC 2017

WEEK 4: Application of Technology

Video transcripts, activities, and resources

telmooc.org

Athabasca University and the Commonwealth of Learning

Athabasca University

COMMONWEALTH of LEARNING

Learning for Sustainable Development

4.1 Practical Application of Technology

4.1.1 VIDEO TRANSCRIPT

Welcome to Week 4. This week in the TEL MOOC, our goal is to assist you in planning a technology-enabled learning activity in an educational context that is familiar to you. In order to plan technology-enabled activities that are pedagogically valuable and effective, we will consider four key elements. These four elements are: the technology, the media, the context, and the purpose.

By now you know what we mean by technology. Now we need to consider what to choose of the many technology options we have. Some examples of technology questions we need to consider when selecting the technology for educational activities are:
- Do we have enough hardware?
- Do we have access to software that is appropriate for the level of the students using it?
- Will there be access to the Internet or other communication devices?

The second element to consider is media. In the open access book that you've already looked at, *Teaching in a Digital Age,* Tony Bates refers to media as text, graphics, audio and video that provide ideas and images in order to convey meaning. This definition is helpful in understanding that media, while it may be dependent on technology for being transmitted, requires separate consideration when planning for use in education. We can look at media as either content or as a message that we are communicating.

The third element to consider when planning a technology-enabled activity is the learning context. What we are referring to by learning context are the specifics of who, what, and where the teaching is delivered. Who are the students and what grade level of education are they? What topic and subject is being taught? Where are the students while they're engaged in the learning activity: in a classroom, online, or some blend of the two? This aspects of the learning context allow us to make appropriate selections and we are considering the technology and media.

The fourth and final element that needs consideration for a technology-enabled activity is the purpose of the activity. A framework we introduced in Week 1 in this TEL MOOC was the TIM or **Technology Integration Matrix**. We mentioned that this framework incorporates five purposes of technology enabled activities. These five purposes are: active student engagement, student collaboration, construction of new understanding, authentic real world connections, and goal-directed activities. While there may be other ways to categorize purposes for using technology, the TIM framework is one effective way for understanding how technology needs to be tied to an educational purpose in order to develop a pedagogically sound plan.

What we would ask you to do now is to spend time exploring how teachers have been using technology-enabled learning in their classrooms. We've provided a link for you to the TIM digital tools index which presents a collection of videos organized by technology, context, and purpose, and ask that you take time now and explore some of these videos showcasing technology-enabled learning.

Please read chapter 6 in Bates' book. Respond to the forums with other participants to questions about these four elements of a technology-enabled activity plan. Review pedagogical models from Week 1 in reference to these decisions and assess your learning to date.

4.1.2 ACTIVITIES

The read, review, and respond activities below are required. The explore and self-assessment activities are optional.

READ

Read the following sections of Bates, T. (2016). Teaching in a Digital Age.

- Pages 6.1: Choosing technologies for teaching and learning. https://opentextbc.ca/teachinginadigitalage/chapter/section-8-2-chossing-technologies-for-teaching-and-learning-the-challenge/
- Pages 6.4: Broadcast vs communicative media. https://opentextbc.ca/teachinginadigitalage/chapter/8-3-broadcast-vs-communicative-technologies/
- Pages 7.1: Thinking about the pedagogical differences in media. https://opentextbc.ca/teachinginadigitalage/chapter/7-1-thinking-about-the-pedagogical-difference-sof-media/

You can also find the full book at https://opentextbc.ca/teachinginadigitalage.

REVIEW

Review the Grade Level Index or the Digital Tools Index at the TIM website to find videos that provide examples of lessons in the content areas in which you teach.

- Grade Level Index. http://fcit.usf.edu/matrix/gradelevel.php
- Digital Tools Index. http://fcit.usf.edu/matrix/digitaltools.php

RESPOND

Reply to the forum titled "Practical Application of Technology: Activities" with your responses to:

Are there specific types of technology that are appropriate for certain grades, ages, or subject areas?

EXPLORE

Explore the TIM Matrix page at http://fcit.usf.edu/matrix/matrix.php and explore some of the Levels and Characteristics categories in the Matrix and explore the lesson videos available from the MA/SC/SS/LA content button links.

ASSESS YOUR LEARNING

Think about and consider the technology, the media, the context, and the purpose of your plan that you will begin to build as you move forward in the development of the TEL Activity Plan. You may want to download the TEL Activity Plan Template and Exemplar now for your reference (see the course Resources section).

Now use the forum titled "Practical Application of Technology: Activities" to reply to the RESPOND question above.

4.2 Getting Help with Technology

4.2.1 VIDEO TRANSCRIPT

Now that you've had an opportunity to explore some technology implementations in various classroom settings, we'll focus our attention on one of the key elements not directly represented in the TIM framework, and that is media.

You will remember that in the previous week, we introduced the idea that there are four elements of pedagogically sound TEL activities. We further described media as text, graphics, audio and video, that provide ideas and images in order to convey meaning. So we can say that media is the content of the lesson or activity, but how do we as educators choose and select effective media for our technology-enabled learning activities?

Let's look again at Tony Bates' open access book, *Teaching in a Digital Age*. His description of educational media is helpful in this regard. Professor Bates points out that research about educational media has confirmed a few findings, and I quote, "The critical point is that different media can be used to assist learners learn in different ways and achieve different outcomes."

An important research finding is that using many media are better than using one as it allows learners with different learning preferences to be accommodated. This results in deeper understanding or gaining a wider set of skills, knowing that media variety supports success and provides even more complexity. Being able to provide a wide variety of media even when accessing open educational resources like those we explored in Week 3 presents several significant challenges for educators. Whether it's the monetary cost to access, create, or develop media, or the time and effort needed, selecting media can be quite difficult. So where can an educator get some support for this task? For this, we suggest you review Tony Bates' **SECTIONS** model of media and technology selection (Bates, 2016). The SECTIONS model provides a set of criteria or questions that can help an educator make decisions about which media or technologies to use.

The SECTIONS model stands for Students, Ease-of-use, Costs, Teaching functions, Interaction, Organizational issues, Networking, and Security and privacy. Try using this model as you begin your selection of media and technology. Take some time to read and review the SECTIONS model in Professor Bates' book. As always we will discuss this topic with other participants in the forum.

Your main assignment in this TEL-MOOC is the creation and sharing of a technology enabled learning plan for your specific teaching context. Here's a hint: this topic, SECTIONS, will be very helpful and completing that assignment.

4.2.2 ACTIVITIES

The read, review, and respond activities below are required. The explore activity is optional. The weekly quiz is required for a Certificate of Participation, and a TEL Activity Plan is required for a Certificate of Completion.

READ

1. Review the TIM frameworks at http://fcit.usf.edu/matrix/matrix.php and select an area in which you would like to create a TEL activity plan. In particular, consider the Context Indicators and Purpose Indicators, and think about the context and purpose of your plan as you begin to develop it in your mind.
   - Context Indicators. http://fcit.usf.edu/matrix/download/tim_table_of_setting_indicators.pdf
   - Purpose Indicators. http://fcit.usf.edu/matrix/download/tim_table_of_student_indicators.pdf
2. Read about the SECTIONS Model in Chapter 8 of Bates (2016).

REVIEW

Explore other lessons and continue to develop your TEL Activity Plan. If you haven't already, download the TEL Activity Plan Template and Exemplar now for your reference (see the course Resources section).

RESPOND

Explore resources, technologies, media, and interactions that will contribute to your TEL Activity Plan and begin filling out your plan template. Discuss any issues or make suggestions to your fellow TEL MOOC participants in the forum titled "Getting Help with Technology: Activities".

EXPLORE

Visit the TEL Resources website at http://www.telresources.org, browse through other activity plans, and register in preparation for uploading your TEL Activity Plan in the Assessment activity below.

ASSESSMENT

There are two Assessment activities this week.

1. Complete the quiz for this week. Passing the quiz with at least five correct answers is required for a Certificate of Participation.
2. During this week and Week 5, complete and post your TEL Activity Plan onto the TEL Resources website and copy the link to the Assignments screen.

Now use the forum titled "Getting Help with Technology: Activities" to reply to the RESPOND question above.

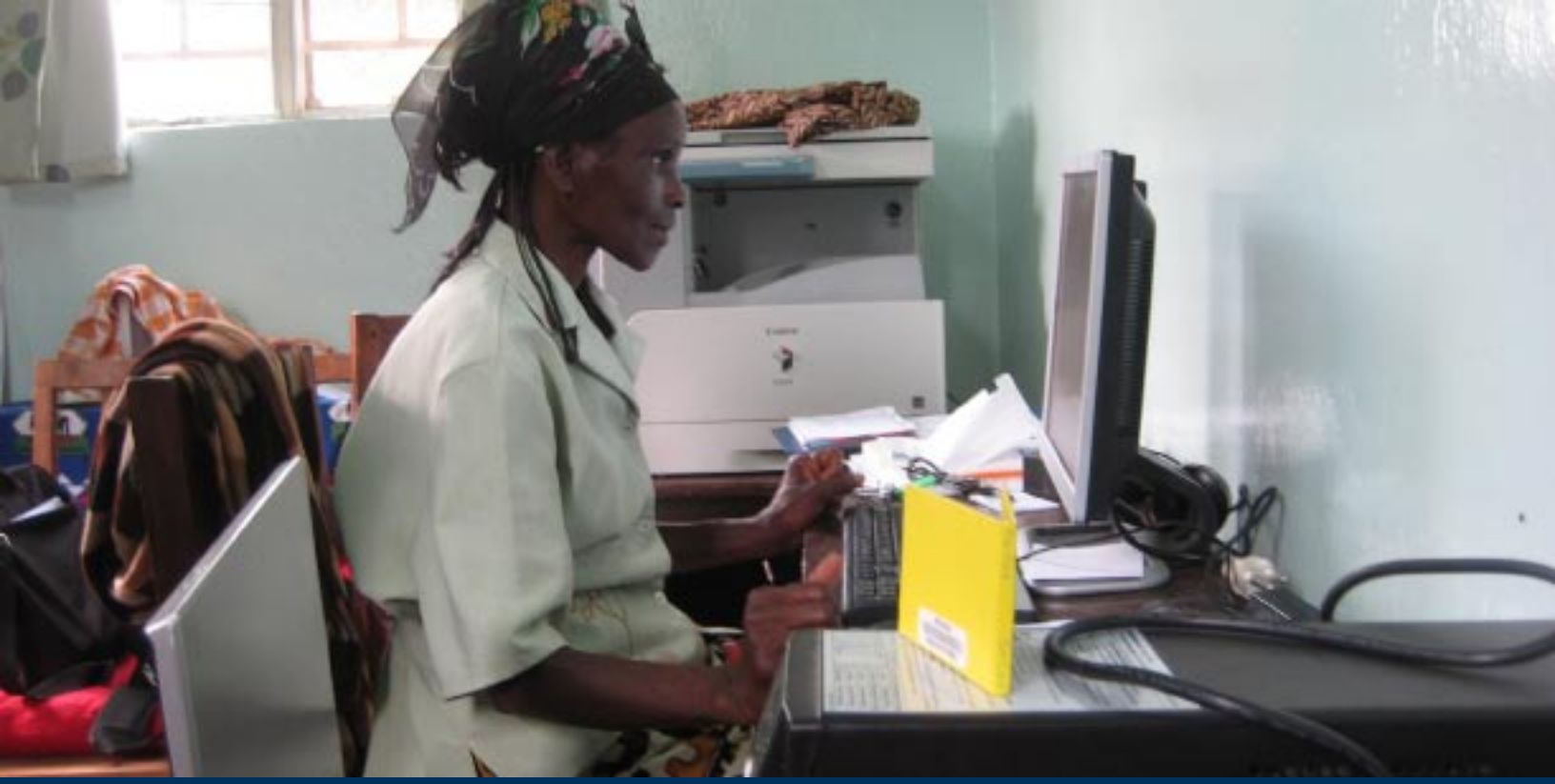
RESOURCES

Bates, T. (2016). *Teaching in a Digital Age*.
- Chapter 8. https://opentextbc.ca/teachinginadigitalage/chapter/9-1-models-for-media-selection/
- Pages 6.1: Choosing technologies for teaching and learning. https://opentextbc.ca/teachinginadigitalage/chapter/section-8-2-chossing-technologies-for-teaching-and-learning-the-challenge/
- Pages 6.4: Broadcast VS communicative media. https://opentextbc.ca/teachinginadigitalage/chapter/8-3-broadcast-vs-communicative-technologies/
- Pages 7.1: Thinking about the pedagogical differences in media. https://opentextbc.ca/teachinginadigitalage/chapter/7-1-thinking-about-the-pedagogical-difference-sof-media/

Technology Integration Matrix.
- Grade Level Index. http://fcit.usf.edu/matrix/gradelevel.php
- Digital Tools Index. http://fcit.usf.edu/matrix/digitaltools.php
- Context indicators. http://fcit.usf.edu/matrix/download/tim_table_of_setting_indicators.pdf
- Purpose indicators. http://fcit.usf.edu/matrix/download/tim_table_of_student_indicators.pdf

Lesson plans.
- http://lessonplanspage.com
- http://www.scholastic.com/teachers/lesson-plans/lesson-plans-index
- http://www.telresources.org

Cover photo: "VFS Digital Design Mexico Intensive", Vancouver Film School
https://www.flickr.com/photos/vancouverfilmschool/5938074703



TECHNOLOGY-ENABLED LEARNING

TEL MOOC 2017

WEEK 5: Creating Technology-Enabled Learning

Video transcripts, activities, and resources

telmooc.org

Athabasca University and the Commonwealth of Learning

Athabasca University

COMMONWEALTH of LEARNING

Learning for Sustainable Development

5.1 Creating Technology-Enabled Learning

5.1.1 VIDEO TRANSCRIPT

Hello, this is Dr. Marti again with your Week 5 video in your TEL MOOC. This TEL MOOC is designed to provide experience and understanding about collaborative and constructed learning environments using technology to create enabled learning.

Our objectives were to provide and teach you how to:
- encourage collaborative, reciprocal and cooperative contact among participants,
- design learning activities with technology for high engagement and active learning
- model and expect self-direction, responsibility and timeliness
- encourage and support access to and consideration of multiple forms of information, and
- communicate clear objectives and high expectations and respect diverse competencies and ways of learning.

As a foundation for these objectives, you reviewed the **Community of Inquiry** framework, a model for collaborative learning in technology-enabled environments and beyond. There are new roles required for teachers and students to foster technology-enabled learning. The Community of Inquiry framework is founded in contemporary learning theories and is well researched. In this MOOC you had the opportunity to experience social, cognitive, and teaching process as part of your TEL MOOC experience.

We said that technology, as defined for this course, refers to digital tools and media-rich resources; in other words, computers, the internet, social media, mobile and tablet devices, open educational resources, and online videos and documents. Frameworks assist you in understanding all the things you need to consider when integrating the technology. You reviewed the **TPACK** and **TIM** frameworks. They are models about how teachers can use technology to enable learning for K-to-12 students. Where the CoI was originally developed for higher education and is now being used and researched in K-to-12, TPACK and TIM were developed for K-to-12 teachers but can be viewed from the perspective of higher education and adjusted accordingly. All three models can be considered when you create your TEL implementation plan. Don't forget to consider the indicators of teaching presence in your plan.

Although there are many uses of technology and the technology itself can be a subject, this course is about technology to enable learning. TEL may include the learning about technology where technology is the subject, but in reference to making technology access and use appropriate for the learning at hand, technology as a delivery tool may provide improved access and increased learning engagement.

The technology can also act to increase or improve cognitive presence. When considering which tools to use, the following purposes have also been recommended: communicate, search, collaborate, create, access, and develop. Technology enables learning where it offers more opportunity to engage via purposeful activities.

These technology-enabled, purposeful learning activities can be supported by **open educational resources**. You now have detailed information about what they are, how they are licensed, and what quality measures are available. Searching for OER is supported by a number of repositories. You can also create your own and share them to participate in this important education movement toward openness.

When choosing or creating OER, don't forget to consider the following questions:
- Is the required skill level appropriate for your students?
- Does the resource match the curriculum you are teaching?
- Is the resource easily modified with the computer technologies you have available?
- What speed of internet connection is required to access the OER?

Last week we discussed how planning your technology enabled learning can start by also taking into consideration four key elements to support learner success: technology, media, context, and purpose. We identified the TIM framework as a very good tool, one which provides a way for educators to see what different levels of technology integration look like. Finally, we looked at one way to guide the selection of media and technology, the **SECTIONS** framework.

With these tools to guide you, it's time for you to create and share your own TEL activity plan. Attached to this video is a template for your TEL activity plan which you may like to use. You can develop one educational activity for a teaching situation you have now or may have in the future. We look forward to your discussions and sharing of ideas while you create your plan, and have provided a few other links to documents that may guide your technology selection. Happy creating!

5.1.2 ACTIVITIES

The read, review, and respond activities below are required. The explore is optional. The final quiz is required for a Certificate of Participation.

READ
Anderson, T., & Dron, J. (2010). Three Generations of Distance Education Pedagogy. Available in the course Resources section or at http://www.irrodl.org/index.php/irrodl/article/view/890/1663/
This final reading for TEL MOOC provides more background for the choices you will make when using TEL in your classroom. Written by two well-known experts in distance education pedagogy, this reading provides a review of learning perspectives and how teachers use technology based on the learning perspective. Look for the chart at the end of the article, just before the references.

REVIEW
Go back to previous readings, responses to forum questions, any videos offered in the last four weeks and take note of things you want to remember or things you hadn't noticed before. Consider these notes when creating your plan.

RESPOND
Reflect on and respond to the following question in the forum titled "Creating Technology-Enabled Learning: Activities":

> ***Which pedagogical view will guide the choices you make when creating your TEL activities? Explain why this is your first choice and when, if at all, you may use other perspectives on pedagogy to guide your choices when using technology.***

EXPLORE
Now that your work in TEL MOOC is over, you will want to develop your own process for staying familiar with the research and practice being used in technology-enabled learning. You have looked at websites with models and organizations that can continue to support you on your teacher professional development journey. Please consider joining other teachers at the BOLT (Blended and Online Learning and Teaching) Multi-authored Blog. See http://bolt.athabascau.ca for great discussion about TEL and consider participting with information from your part of the world. This Blog is a great example of how technology can help spread information and practice ideas among teachers distributed in many places and, as such, enables learning!

ASSESSMENT
Complete the final quiz for TEL MOOC. You must have six correct answers to qualify for a Certificate of Participation.

ANSWER

Please complete our end-of-course survey. Be sure to read through the participant consent letter for information on how your answers will be used and protected.

Now use the forum titled "Creating Technology-Enabled Learning: Activities" to reply to the RESPOND question above.

RESOURCES

Anderson, T. & Dron, J. (2010). Three generations of distance education pedagogy. *The International Review of Research in Open and Distributed Learning, 12*(3), 80-97. Retrieved from: http://www.irrodl.org/index.php/irrodl/article/view/890/1663/

Blended and Online Learning and Teaching (BOLT) Multi-authored Blog. http://bolt.athabascau.ca

TECHNOLOGY-ENABLED LEARNING

TEL MOOC 2017

WEEK 1: Models of Technology-Enabled Learning

Weekly summary: Trends, key posts, and prompts

telmooc.org

Athabasca University and the Commonwealth of Learning

Athabasca University

COL Commonwealth of Learning

Learning for Sustainable Development

1.1 The Community of Inquiry

1.1.1 DISCUSSION TRENDS

1. Several participants expressed practical concerns such as cyberbullying, copyright, and plagiarism.
2. Many also acknowledged technological limitations such as bandwidth, and inadequate institutional resources.

1.1.2 KEY POSTS

Poster: mloyer
Time: 12/1/2017 12:23 & 12:24
Mloyer took the three key areas (accessibility, online forum for discussion, and shift of responsibility from lecturer to learner) and clearly identified benefits and challenges of each in relation to COI. Also, she discussed an "aha" moment in her own teaching in higher education where she wants to think about how to integrate social media more purposefully and intentionally. She discusses her own relationships with social media, recognizing the generation gap between higher education teachers and their students.

Poster: meaghanp
Time: 9/1/2017 18:41
Meaghan offers a good explanation of what COI is. The use of metaphors gave the impression that she was connecting and beginning to understand about COI to her own practice. She also makes an important point about the COI framework being most effective if both teacher and student are made aware of the framework.

> Quote: *"I think the primary benefit of COI in TEL is the ability of the framework to create a sense of 'place' for the learning environments, particularly in the case of distance education where traditional 'place' (the classroom full of learners, teachers, and resources, which is also the 'space') is missing."*

Poster: terry ann
Time: 10/1/2017 13:42
Terry Ann provides a clearly written description of COI from her perspective and offers a variety of challenges but with a positive message and tone - one that suggests it's worth digging in to learn more about COI to tackle the challenges and provide opportunity for students to flourish as a result.

> Quote: *"Community of Inquiry – COI in my opinion transforms the learning environment into a friendly learner's space. It allows ongoing communication and collaboration by using a variety of learning tools that promote blended learning. No more, do students have to wait to physically be within a four-walled classroom (building) to be actively involved in activities with their classmates. They can communicate and collaborate with each other through all the available collaborative learning technologies. This way they will be able to construct meaningful learning as they engage in purposeful discourse and reflection."*

Poster: Morbo78
Time: 10/1/2017 04:31
An interesting point made about students perhaps needing to first have a certain level of proficiency with critical thinking and reflection before the benefits of COI could be realized.

Poster: Gungadeen
Time: 11/1/2017 09:52
Gungadeen poses the idea that reflecting on the nature of COI and our collective discussions are actually challenging us to think about teaching/learning more broadly.

> Quote: *"This leads to a deep reflection about the entire teaching and learning process."*

1.2 TPACK and TIM

1.2.1 DISCUSSION TRENDS

Comments about which model course participants would most likely use seem to point to differences in the participant's previous experience with course development and use of technology. There seems to be a bit more interest for the TIM model as a first step, but recognition that each model can offer benefit for different reasons and depending on the circumstances or what the teacher needs.

1.2.2 KEY POSTS

Poster: Urboniene
Time: 9/1/2017 15:32
A succinct and articulate summary of the differences between the two models, highlights the interplay between tech and pedagogy.

Quote: *"Effective technology integration for pedagogy around specific subject matter requires developing sensitivity to the dynamic, transactional relationship between these components of knowledge situated in unique contexts."*

Poster: Toussaint
Time: 11/1/2017 15:46
Toussaint gives a thorough explanation of the similarities and differences of TPACK and TIM as well as an account of how to use the TIM framework.

Poster: Varughese
Time: 11/1/2017 05:09

Quote: *"…The most important point is that technology should not dictate pedagogy or content. Technology must be used only where it can add value to teaching and learning."*

1.2.3 PROMPTS FOR FURTHER THOUGHT

Poster: kjroulston
Time: 13/1/2017 17:39

Quote: *"The TIM model poses a lot of questions for me, such as: does one need always to pass through all of these stages? Would students and their teachers necessarily follow the same development path in using different forms of technology? How would one assess students' levels of development using TIM? What are the implications for teaching when students (and teachers) pass through phases at different rates with different sorts of technologies? Might students surpass their teachers in the use of technologies?"*

1.3 On Teaching Presence

1.3.1 DISCUSSION TRENDS

Overall, participants presented a variety of means for fostering peer-peer learning using technology. No one specific technology that was over-represented, and overall the comments suggested that students could benefit from various ideas posed by their classmates. The general consensus of the discussions is that ***peer learning is worth investing in as it generates meaningful results***.

1.3.2 KEY POSTS

Poster: Wilhelmina
Time: 12/1/2017 06:19
Wilhelmina gives many examples of how to implement peer teaching in online courses, several which she has implemented in her own course design. She also recognizes that teacher presence is an important component to the success of peer teaching.

Poster: Trepule
Time: 10/1/2017 16:39
Trepule reminds us of the importance of introductions between students to help foster community sharing.

> Quote: *"It is crucial to provide learners with an initial experience of getting to know each other first – face-to-face or online (video presentations, live chats, etc.) presenting themselves not only as learners but also as personalities. This will secure safe social interaction in further online collaborations."*

Poster: Janaka
Time: 14/1/2017 00:02
Janaka provides an interesting example of how to increase peer-learning through the use of real-world problems students are encountering at the moment.

> Quote: *"Certain design course in the In ODL mode undergraduate programme, there are some learners who work in the industry may also registered to the same course. They have much potential to solve some industrial issues or problems related to their profession. Prepare a system design related to real-world application and ask the learners to submit their design into the forum. The design issues can be discussed using online learning management tool. Once the learners complete this task they can participate the laboratory session to demonstrate their implementation with the given hardware platform to perform their design. There is a demonstrator in the laboratory and a technology mentor in the online forum. Also available point scheme to reword the learners who participate authentic learning and peer teaching. This marks will be count for their formative assessment and summative assessments to encourage use of technology to learn skills, knowledge and attitudes."*

1.3.3 PROMPTS FOR FURTHER THOUGHT

Dr David Wiley (http://davidwiley.org) once said something along the lines of,

> *"… If I walk down the street with some French Fries, and offer to share the fries with everyone I meet, but no one takes them, then I haven't really shared them. I've only offered them."*

He was speaking of the reciprocal nature of sharing – the offering and the using what has been offered. This should be obvious, but for some reason it is not. What do you think Dr Wiley means, exactly?