

Guide to Teaching with Technology

Guide to Teaching with Technology

eLearning at Brock

CENTRE FOR PEDAGOGICAL INNOVATION



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About this guide

This guide is designed to help you plan, design, develop, and teach technology-enhanced courses and programs. We have compiled recommendations and suggestions from our staff of educators and technology professionals as well as from faculty who have experienced the process. We have included guides that illustrate pedagogical design issues; tips on planning, developing, and writing course content; as well as planning and facilitating online interaction. We have also included a description of various technologies to assist you in the process.



We have designed this guide to provide an overview of the entire process, from planning to implementation. If you have any questions or concerns, or would like to discuss your unique course dynamics, feel free to call or email us at any time, at edtech@brocku.ca or (905) 688-5550 ext 4734.

Material in this guide has been adapted with permission from Faculty Guide to Teaching and Learning with Technology. ET@MO, University of Missouri. Additionally, a number of videos and learning objects originally created for Carleton University's cuOpen initiative have been included.

Supplementary and/or Brock University focused content has been added by Kyle Mackie Consulting Ltd and the Centre for Pedagogical Innovation. Links to the source files for any Creative Commons material are included at the end of this guide.

Related websites

The Centre for Pedagogical Innovation

Isaak: Brock University's Learning Management System

PART I
ELEARNING AT BROCK

I. Benefits and Challenges

eLearning at Brock

Learners are increasingly identifying with a networked, connected society that privileges interactivity as a learning strategy and acknowledges new media literacies as indigenous modes of expression. Traditional pedagogical principles are still valued, but this new context offers unique opportunities to consider new approaches.

Technology offers solutions to a diverse set of instructional challenges, and instructors choose to augment courses with instructional technologies for a number of reasons. Some examples include: large lecture courses managing hundreds of students or dozens of sections, introductory courses providing access to significant amounts of basic materials throughout the semester, courses that shift in-class quizzes to an online format allowing for more class discussion time, or courses and programs using the Internet to reach a nonresident, national, or international audience. The following videos discuss how teaching online positively impacts both the teaching and learning experience and what challenges to expect.

Benefits and Challenges of Online Teaching



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=20>

Featuring: Laurie Harrison (Toronto), Peter Thompson (Carleton), Richard Nimijean (Carleton), Denise Mohan (Guelph),

Dan Boyes (Toronto), Karen Fricker (Brock), Zopito A. Marini (Brock), Franco Taverna (Toronto), Alison Gibbs (Toronto), James M. Skidmore (Waterloo).

Benefits and Challenges of Online Learning



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=20>

Featuring: Maureen Connolly (Brock), MJ D'Elia (Guelph), Kevin Cheung (Carleton), Laurie Harrison (Toronto), Patrick Lyons (Carleton), Boris Vukovic (Carleton), Bob Burk (Carleton), Franco Taverna (Toronto), Denise Mohan (Guelph), Richard Nimijean (Carleton).

Overcoming the Challenges of Online Teaching and Learning



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<https://opentextbooks.uregina.ca/teachingtech/?p=20>

Featuring: Franco Taverna (Toronto), Laurie Harrison (Toronto), Andrew Barrett (Carleton), Maureen Connolly (Brock), James M. Skidmore (Waterloo), Richard Nimijean (Carleton), MJ D'Elia (Guelph), Don Boyes (Toronto).

Instructors want to better manage time and resources, provide engaging learning opportunities to students outside of class, and/or want to offer a course to a nontraditional or off-campus audience. Although there are many themes and recommendations in common, you will find specific strategies through this guide to prepare for a variety of challenges that each unique set of circumstances may present.



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<https://opentextbooks.uregina.ca/teachingtech/?p=20#h5p-1>

2. Teaching Online

Online Teaching Skills



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<https://opentextbooks.uregina.ca/teachingtech/?p=22>

Featuring: Peter Thompson (Carleton), Zopito A. Marini (Brock), Karen Fricker (Brock), John Logan (Toronto), Anne Trepanier (Carleton), MJ D'Elia (Guelph), Peggy Hartwick (Carleton).

Teaching Online and Teaching Face-to-Face



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<https://opentextbooks.uregina.ca/teachingtech/?p=22>

Featuring: Karen Fricker (University), Alison Gibbs (Toronto), Steve Joordens (Toronto), Peter Thompson (Carleton), Anne Trepanier (Carleton), Patrick Lyons (Carleton).

Competencies for online teaching

These short, self-assessments are based on Penn State University's Faculty Competencies for Online Teaching. Use them to get a sense of where you are at with your readiness to teach online. For *fun*, they give you results based on downhill ski trail difficulty ratings.

Technical Competencies



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<https://opentextbooks.uregina.ca/teachingtech/?p=22#h5p-2>



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<https://opentextbooks.uregina.ca/teachingtech/?p=22#h5p-3>

Administrative Competencies



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<https://opentextbooks.uregina.ca/teachingtech/?p=22#h5p-4>



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<https://opentextbooks.uregina.ca/teachingtech/?p=22#h5p-5>

Pedagogical Competencies



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<https://opentextbooks.uregina.ca/teachingtech/?p=22#h5p-6>



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<https://opentextbooks.uregina.ca/teachingtech/?p=22#h5p-7>

Worksheet: Are you ready to teach online?



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<https://opentextbooks.uregina.ca/teachingtech/?p=24#h5p-8>

PART II

COURSE PLANNING

3. Course Planning

Planning is key to successfully implementing innovative components into your course; and this is especially true of eLearning courses. We recommend talking with your fellow faculty members, department chair, and support staff in order to develop a comprehensive strategy that will make your planning and expectations consistent with other courses in your discipline as well as better prepare students to learn via technology. For eLearning courses, plan ahead and allow at least 4-6 months for content development or adapting existing materials to online delivery. Also, make certain that you take advantage of the instructional and technology support services that the campus offers, such as Brock University's Centre for Pedagogical Innovation (CPI), as well as external resources, such as Contact North's 9 Key Steps About Teaching Online.

Course Road Map: Analyzing context, content, and process

The first step to planning your course is to create a development plan that will outline its essential components. The goal of this planning exercise is to identify the scope and purpose of the course, necessary resources, types of technology (and training) needed for successful development, and advanced planning for multimedia development or collaborative course development needs.



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<https://opentextbooks.uregina.ca/teachingtech/?p=27#h5p-9>

Theories of Learning



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<https://opentextbooks.uregina.ca/teachingtech/?p=27>

Featuring: Timothy A. Pychyl (Carleton), Denise Mohan (Guelph) Maureen Connolly (Brock), John Logan (Carleton).

Constructivist Theories of Learning and Online Courses



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<https://opentextbooks.uregina.ca/teachingtech/?p=27>

Featuring: Joy Mighty (Carleton), John Logan (Carleton), Denise Mohan (Guelph), Samah Sabra (Carleton), Timothy A. Pynchyl (Carleton).

Deep and Surface Learning



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<https://opentextbooks.uregina.ca/teachingtech/?p=27>

Featuring: Joy Mighty (Carleton), Maureen Connolly (Brock), Samah Sabra (Carleton), Steve Joordens (Toronto).

Identify your teaching and interaction style

Regardless of which technology you select, how you facilitate interaction is going to depend largely on your teaching style and preferences as well as your general philosophical orientation to teaching. Another factor likely to influence interaction is the general style of your discipline. The nature of some professions require significant interaction with peers or clients which may make online interaction easier for you to facilitate, especially if you will be teaching nontraditional or adult students. Bear in mind that there is no right or wrong teaching style. Antonio Grasha (1996), whose research area is in college teaching, discusses the following five primary teaching styles:



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<https://opentextbooks.uregina.ca/teachingtech/?p=27#h5p-10>

Worksheet: Course Planning



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<https://opentextbooks.uregina.ca/teachingtech/?p=29#h5p-11>

4. Course Development Process

This video discusses core principles for developing online and blended courses, and the factors that may influence this process.



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=32>

Featuring: Richard Nimijean (Carleton), Giulia Forsythe (Brock), Patrick Lyons (Carleton), Jane Holbrook (Waterloo), Laurie Harrison (Toronto).

Working With an Instructional Designer

This video describes the role of an instructional designer and how working with an instructional designer can shape the course design process.



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<https://opentextbooks.uregina.ca/teachingtech/?p=32>

Featuring: Kevin Cheung (Carleton), MJ D'Elia (Guelph), Maureen Connolly (Brock), Zopito A. Marini (Brock), Peter Thompson (Carleton), Patrick Lyons (Carleton), Don Boyes (Toronto).

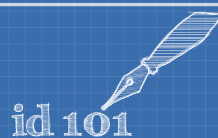
what can your Instructional Designers do for you?



discuss teaching methods



help organize your plans
and projects



review course outlines and
assess instructional needs

udl

identify and resolve
accessibility barriers



brainstorm and offer
new ideas for development

A+

co-develop assessments
and course resources



debrief courses, set goals,
and facilitate self-assessment



provide training and support
for various teaching tools

id



present in class and
facilitate workshops

Instructional Designers are here to support you and your teaching and can help you analyze, design, develop, and evaluate your course experience.



5. Universal Design for Learning



An interactive H5P element has been excluded from this version of the text. You can view it online here:

<https://opentextbooks.uregina.ca/teachingtech/?p=34#h5p-12>

Worksheet: UDL Framework



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<https://opentextbooks.uregina.ca/teachingtech/?p=36#h5p-13>

Worksheet: UDL Case Studies



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=38#h5p-14>

PART III

OUTCOMES AND ASSESSMENT

6. Learning Outcomes

The Role of Learning Outcomes

This video discusses the role of learning outcomes in (online, face-to-face, and blended) course design.



A YouTube element has been excluded from this version of the text. You can view it online here:

<https://opentextbooks.uregina.ca/teachingtech/?p=42>

Featuring: Natasha Kenny (Guelph), Zopito A. Marini (Brock), Timothy A. Pychyl (Carleton), Samah Sabra (Carleton), Maureen Connolly (Brock), Joy Mighty (Carleton), Steve Joordens (Toronto), Jane Holbrook (Waterloo), Denise Mohan (Guelph).

A learning outcome is a statement that describes what knowledge, skills and values learners should have acquired by the end of a unit of instruction. Outcomes focus on what the students will know, do, or value when they exit the course, program or degree. Note that the focus is on the student rather than the teacher. These are not instructional objectives: they are statements describing the desired abilities of the student with respect to the discipline.

Outcomes include a verb that describe what the student will be required to do to demonstrate that the outcome has been achieved (think about assessment).

For example, by the end of this course, students will be able to ...

1. Demonstrate, in writing, the ways in which the economy contributed to the rise of WWII.
2. Develop verbal communication skills through a classroom presentation on a course topic.
3. Identify the terminology related to sexual reproduction.

Learning outcomes should begin with verbs beyond “know” or “understand”. Be specific. What will the student need to demonstrate in order to be successful in the course or in the program? Student success with outcomes should be measurable by the assessments. Clearly identifying the desired learning outcomes and corresponding activities and assessments can help both students and instructors know when and how students will be successful.

For example, if we want our learners to be able to apply knowledge we can design classroom activities and assignments that allow learners to see, hear, and experience the use of knowledge. We might demonstrate how a particular model is applied to a particular problem and then provide students the chance to practice this, and then give students an assignment to demonstrate their understanding. An applied learning outcome might state: students will be compare two websites using the principles of Universal Design.

Bloom’s Taxonomy

This video discusses the relationships between Bloom’s Taxonomy of Educational Objectives, learning outcomes, and the course design process.



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=42>

Featuring: Anthony Marini (Carleton), Samah Sabra (Carleton), Andrew Barrett (Carleton), Maureen Connolly (Brock), Joy Mighty (Carleton), Natasha Kenny (Guelph), Jane Holbrook (Waterloo), Giulia Forsythe (Brock).

Writing Learning Outcomes

Knowledge. A student is able to **name, recall, recognize or label** particular terms, content, theories, or principles.

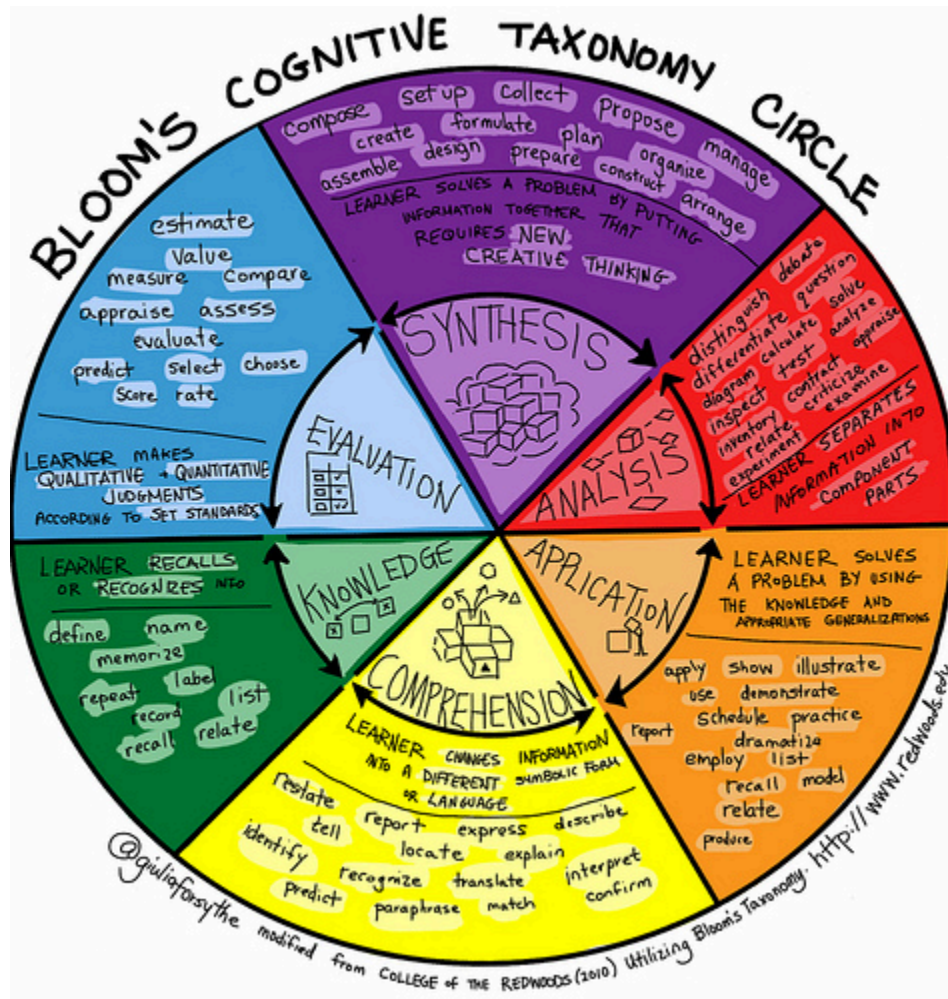
Comprehension. Learners are change information into different forms; they are able to **discuss, classify, summarize, explain, generalize or distinguish** between elements of knowledge.

Application. At this level, learners are able to problem solve using acquired knowledge; for example they will be able to **demonstrate, relate, practice, interpret, manipulate, translate** and use knowledge.

Analysis. When we require our learners to understand how the elements of a model work together, organizing principles or the relationships between concepts, systems, or ideas, then our learners will **examine, experiment, compare, relate, test, or differentiate** knowledge.

Synthesis. When knowledge is synthesized learners will usually create something in a new and novel way or integrate information; they might **design, arrange, collage, produce, perform or assemble** knowledge.

Evaluation. Learning at an evaluation level usually involves students judging the quality of something; quality might be determined by a set of standards, value, or adequacy. Students, therefore, may **estimate, compare, rate, interpret, criticize, conclude, or assess**



See also: A Guide to Developing and Assessing Learning Outcomes at the University of Guelph [pdf].

7. Degree Level Expectations

“The Undergraduate Degree Level Expectations (UDLEs) and Graduate University Degree Level Expectations (GDLEs) represent the threshold level skills and knowledge Ontario students must demonstrate in order to successfully complete their programs. The Degree Level Expectations form an integral part of Ontario’s Quality Assurance Framework , which establishes the protocols for the approval of new undergraduate and graduate programs and the review of existing programs at publicly assisted universities”. (Excerpt from the Official Degree Level Expectations Website hosted by McMaster University, funded by the Council of Ontario Universities).

What are the Brock DLES?

Brock University has adopted the six DLES as established by Ontario Council of Academic Vice-Presidents (OCAV). See the UDLES and GDLES at <http://www.brocku.ca/vp-academic/quality-assurance>

Faculties may also identify Faculty specific DLES as an opportunity to articulate outcomes and learning experiences specific to particular disciplines.

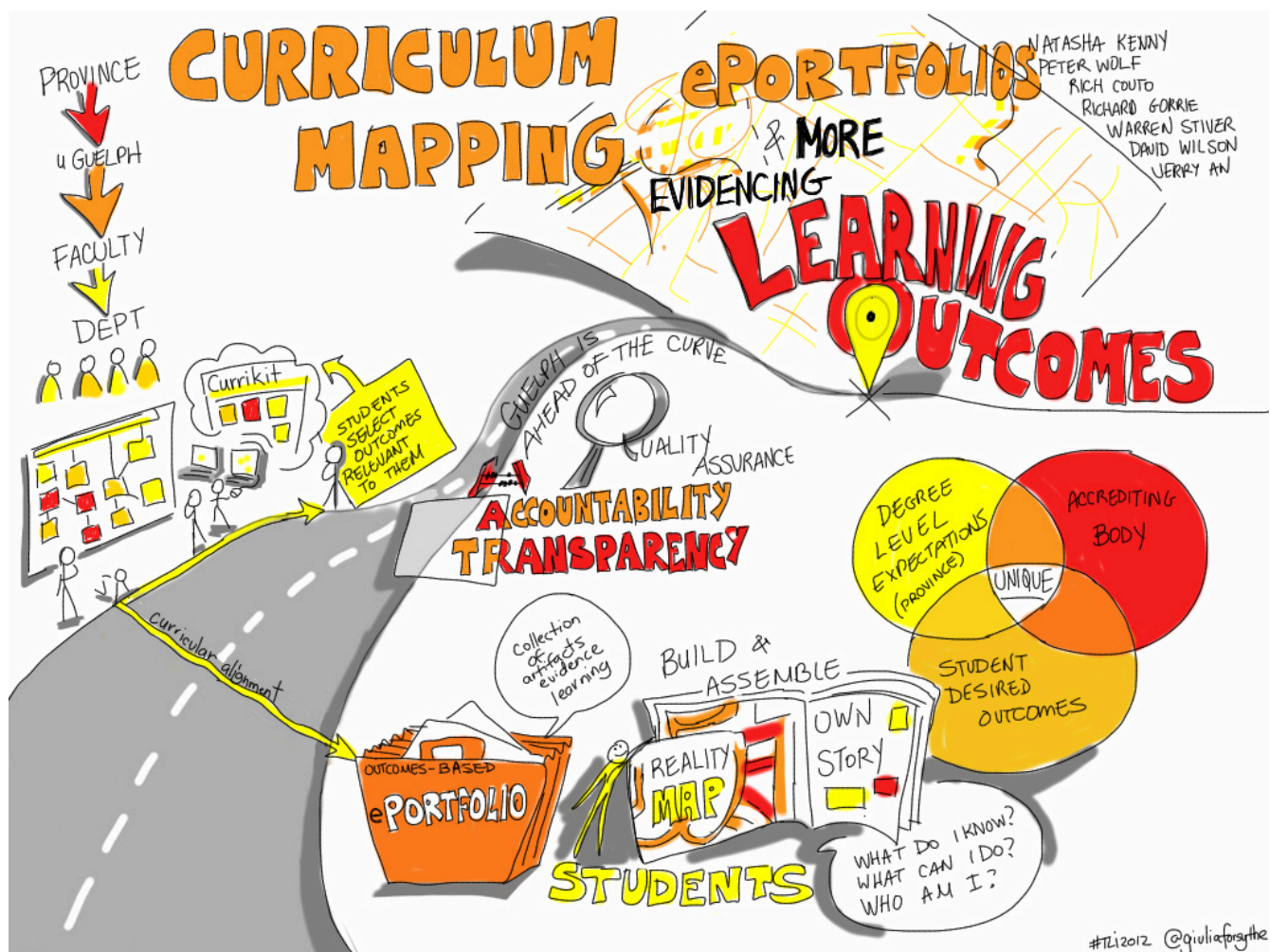
What are the benefits of thinking about our curriculum in terms of DLES?

- Describes the outcomes of the degree
- Provides an overall framework that guides curriculum planning
- Provides a framework for evaluating program effectiveness
- Provides documentation for assessing transferability
- Provides a framework for developing appropriate assessments of student learning
- Assists with quality assurance
- Fosters intentional teaching aligned with program/degree goals
- Provides a context for student self-evaluation
- Informs students of the expectations and standards of the degree
- Helps students engage with the course, program and degree

How do we align program outcomes to the DLES?

Curriculum committees might come together to identify program outcomes. In these discussions, it is helpful to ask...

1. What are the attributes of an ideal graduate from this program? What knowledge, skills, and values should they have? What do we want a graduate of this program to know or be able to do at the end of the degree?
2. How do the knowledge, skills and values align or map onto the six DLES? What abilities (knowledge and skills) are not covered by the six, if any? (This is an opportunity to identify discipline-specific outcomes).
3. Where in the curriculum does a student get an opportunity to acquire these attributes or develop these skills? (This then becomes a curriculum mapping opportunity where program outcomes are mapped at the course level).
4. What learning /assessment experiences are used to ensure the student has achieved the outcomes?



Mapping the curriculum

Curriculum mapping provides an opportunity to align our course learning outcomes to our program outcomes and to our degree level expectations (DLEs). The image above represents how different levels of outcomes can nest or embed within each other. By looking for alignment between these various levels of outcomes, we can get a sense of what outcomes are being met, where they are being met, and at what level of sophistication. Some outcomes are ‘introduced’ in foundational courses, ‘reinforced’ mid way through the degree, and ‘mastered’ at a senior level. Mapping the curriculum can provide the “big picture” of the student experience and ensure that students are getting the activities and assessments that allow them to be successful in the program.

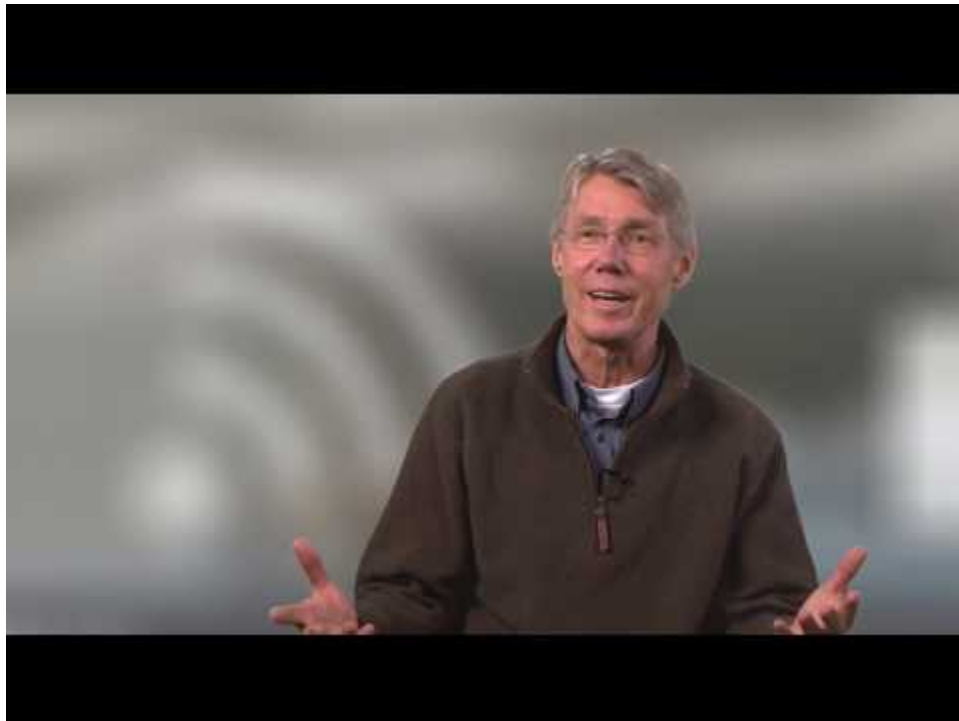
For additional resources, visit the Centre for Pedagogical Innovation or the Curriculum Resource Page and the Brock University’s Guide to Curriculum Mapping.

8. Assessment

What do you want from your assignments? Why are you creating them? Why are they important to you? Why are they important to the students? Is it worth your time to grade them? As you think about these questions, use the following items (from Walvoord & Anderson, 1998) as a guide to designing and constructing the assessment instruments for your course.

- Consider what you want your students to learn; select tests and assignments that both teach and test the learning you value.
- Construct a course outline that shows the nature and sequence of major tests and assignments.
- Check that the tests and assignments fit your learning goals and are feasible in terms of workload. Learning outcomes, activities, and evaluations should match.
- Collaborate with your students to set and achieve goals.
- Give students explicit directions for their assignments.
- Teach what you are grading: the assignments you've created align with learning outcomes; why shouldn't you be teaching to that knowledge you've identified as important to your students?
- Keep in mind that all assignments should align with your learning outcomes.

Assessment Tools For Online Courses



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=47>

Featuring: Tracy Penny-Light (Waterloo), Timothy A. Pynchyl (Carleton), Bob Sproule (Waterloo), Anne Trepanier (Carleton), Maureen Connolly (Brock), Richard Nimijean (Carleton), John Michaela (Waterloo), Vincent Kazmierski (Carleton), Bob Burk (Carleton).

Assessment Strategies

Student self-assessment can be an important part of the total evaluation process which allows for a global look at personal growth. Self-assessment can be assigned as a component of any assignment (e.g., group assignments, presentations), at midterm, or at the end of the semester. Palloff and Pratt (1999) suggest asking how well students feel they have met the learning goals, how well they feel they performed overall, and what grade they think they have earned. They provide a helpful list of possible reflection statements for students:

- What was most and least useful in my learning process?
- Did I achieve my objectives?
- What did I learn about my own learning process?
- How did I change as a learner through my involvement with this course?
- Will what I have learned through this course apply in other areas of my life?
- Am I satisfied with the level and quality of my participation?
- Did I see myself as an active contributing group member in collaborative assignments
- How would I evaluate my overall performance in this class?

Self and Peer Evaluation

Peer-assessment also provides helpful information and is particularly supportive for courses emphasizing frequent discussion or collaborative work. This form of assessment could be submitted privately to the instructor or used as feedback from each other throughout the course.



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<https://opentextbooks.uregina.ca/teachingtech/?p=47>

Featuring: Timothy A. Pychyl (Carleton), Denise Mohan (Guelph), Giulia Forsythe (Brock), Andrew Barrett (Carleton), Steve Joordens (Toronto), Alison Gibbs (Toronto), Dan Gillis (Guelph), John Michaela (Waterloo).

Creating and Using Grading Rubrics

Grading rubrics, which have many forms, have been around for a long time. In simplest terms, they help you score assignments objectively and consistently. Walvoord & Anderson (1998) describe the components in creating a rubric (see their book, *Effective Grading*). This video discusses advantages and disadvantages of using rubrics for assessment in online learning environments.



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=47>

Featuring: Timothy A. Pychyl (Carleton), John Michaela (Waterloo), John Logan (Carleton), Denise Mohan (Guelph), Zopito A. Marini (Brock), Dan Gillis (Guelph), Vincent Kazmierski (Carleton), Steve Joordens (Toronto).

Here is an example discussion post grading rubric where the primary traits identified are based upon Blooms Taxonomy of Knowledge and basic university writing conventions.

Authentic Assessment

Authentic assessment is an attempt to measure what students can do with knowledge and skills in real-world contexts. Students participating in learning activities and assessments that relate closely to real life application master needed skills and gain the ability to see how their learning can be applied to aspects of their future careers. Student performance can be enhanced by implementing assessments that do more than tell us what students know at a given point in time: students should be measured on what they can do and allowed to both reflect and improve upon their work.



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<https://opentextbooks.uregina.ca/teachingtech/?p=47#h5p-15>

9. Online Testing

The CPI recommends using online quizzes in two ways:

Formative tool: The act of taking a quiz can be a great learning tool often referred to as Assessment For Learning.

Open Book: Questions that do not lend themselves to clear-cut responses are often not at risk when unintended collaboration occurs. For example, questions that ask learners to consider their own personal context will not have one correct answer.

In any case, online multiple choice quizzes should be low stakes. A common and successful strategy has been a weekly multiple choice quiz worth a small but sufficiently meaningful percentage of the overall course grade.

Best practices when testing in Sakai course sites

The following information is abbreviated from the Tests and Quizzes – Best Practices help page, and is intended to advise Brock University instructors on the use of Isaak-Sakai course sites to safely and effectively offer online assessments. Members of CPI would be pleased to offer support at any stage in the administration of an online assessment.

Offer a trial run

Ungraded “Get to know you” or practice quizzes that approximate the configuration and flow of formal assessments for the course afford students the opportunity to familiarize themselves with the experience.

Prevent loss of data

- Assign one question per online assessment page to oblige test-takers to regularly navigate between pages, thus preventing inactivity timeout during longer assessments.
- Enable automatic submission of unsubmitted assessments.
- Provide some time between assessment due dates and retraction dates to allow for any unforeseen technical or user complications.
- Provide some additional time at the beginning and end of timed assessments to allow for any unforeseen technical or user complications.
- Enable the Statistics tool prior to online assessment to track basic usage information.
- Do not delete completed or in-progress assessments.

Offer high frequency / low stakes testing

Higher frequency assessments with lower stakes tend to be less prone to risk within the online environment than traditionally high-stakes midterm and final examination models. Instructors may thus wish to release chapter, weekly, or monthly assessments to provide for small fractions of overall course grading but equating collectively to the fraction allocated to larger assessments.

Support academic integrity

Assume that all known risks that apply to traditional take-home assessments apply to assessments done online. Consider the points below to help ensure academic integrity as online assessments are administered.

- Assessment that calls upon participants to leverage critical thinking rather than memorization skills will provide more opportunities for unique responses.
- Randomize question inclusion and ordering.
- Time assessments strategically to reduce the opportunities for students to collaborate or refer to other sources of information when these behaviours are not intended.

Proctoring options

The Examinations and Timetables department within the Brock University Registrar's office provides this information as needed.

Originality Checkers

Software such as Turnitin.com offers originality checking or phrase-matching services to students and instructors to promote integrity and collaboration on written assignments. Instructors should communicate that they intend to use originality checking by informing students in class, in the course outline, and/or in the description of assignments. Likewise, students must be given the option of not submitting to Turnitin. Brock University requires that students be given the option to declare that they do not want to use Turnitin in advance and submit revisions or drafts of their work in advance of the due date (or other similar accommodation). As per the faculty handbook, students with a principled objection must be offered an alternative.

10. Course Syllabus

Your syllabus is the linchpin of your course. A complete syllabus should establish student expectations and describe the course in fairly specific detail. When you are developing an eLearning course you may fear you are being too specific, but when you do not have face-to-face time with students, it is best to provide them with highly specific, process-focused information.

Instructor information

When developing an eLearning course, this document can be a vital tool in letting your students know about you on a personal level. Students appreciate an opportunity to get to know their instructor, even without the typical classroom setting. You may want to include:

- Personal introduction: One to two paragraphs about your educational background, professional interests, and/or accomplishments, and a paragraph about your hobbies, interests, or family.
- Specific contact information (postal address, telephone, email, fax, personal webpage).

Course schedule

If your students will be conducting significant work online, such as group discussions, quizzes, or assignment submissions, it is vital that your schedule be as integrated as possible, reflecting due dates, and where assignments should be submitted (e.g., in class, online via email by noon). You may choose to include a week-by-week run-down providing:

- A brief description of content to be covered including information about any special arrangements students must coordinate.
- Assignments for each week and deadlines for completion, timelines for discussions, etc.
- Examination dates including a description of type or style of exam and length and time needed to complete, with points/percentage value. Proctor information for exams administered off-campus.

Complete grading information

The biggest issue for students is knowing what they need to do in order to meet your expectations on assignments. Be specific! We recommend developing grading rubrics (additional information can be found in the Assessment section) to help communicate your criteria, which include:

- Possible points for each assignment, examination, student interaction, and class participation.
- Grading/passing scale, using points or percentages.
- Information providing advice concerning study techniques you feel might help students succeed (Note: encouragement and motivational comments are appropriate in this section).

Learning Outcomes

A learning outcome is a statement that describes what knowledge, skills and values learners should have acquired by the end of a unit of instruction. Outcomes focus on what the students will know, do, or value when they exit the course, program or degree. Note that the focus is on the student rather than the teacher. These are not instructional objectives: they are statements describing the desired abilities of the student with respect to the discipline.

Refer to the section on Learning Outcomes for more information.

Brock University requirements and recommendations

[Click here](#) for a complete list of required and/or recommended course outline components as stipulated by the Brock University Faculty Handbook.

PART IV

CONTENT DESIGN AND DEVELOPMENT

II. Writing for eLearning

When writing material for the Internet, avoid long blocks of text. Break material into logical chunks of no more than two to three screens worth of information, using ample content-specific headings and subheadings as cues for the content, and keep paragraphs short. Experienced eLearning course instructors recommend that you develop lesson discussion questions and activities, or relevant group activities, at the same time you are creating lesson materials. Having lesson goals and content fresh in your mind coordinates these interactive experiences.

When developing eLearning course materials, keep in mind that to reduce student confusion and questions that may arise without face-to-face contact, it is important to develop specific, self-explanatory materials. You will not have the opportunity to self-correct or explain confusing points when students access material outside the classroom setting.

Make writing your own

As you begin developing content, avoid outlining or summarizing textbook material. Assert your presence and personality. As an experienced content expert, you add richness with personal experiences, observations, and other real-world examples. As you write, consider these tips:

- Use real-life examples, stories, problems and solutions, case studies, striking facts, or quotations to challenge students and spur interest
- Use simple language students understand and find approachable
- Treat materials as a one-on-one conversation, addressing the student as “you”

Commentary or Lecture Material

This section relates to the body of information within the lesson itself. We recommend writing content in sentence format, with headings and subheadings to guide the reader. We also recommend using the second person pronoun “you” within the instruction so readers feel the material is personalized. The instruction section is an opportunity to accomplish any or all of the following:

- Expand areas not discussed in the text
- Explain or illustrate difficult concepts
- Interpret textbook or other printed materials
- Work typical exam problems not addressed by the text
- Present contrasting viewpoints
- Anticipate questions students may raise

Remember also to list corresponding or optional books, journal articles, and Internet readings including book chapters, page numbers, or Internet addresses.

12. Interactive Teaching Methods and Strategies

Online Discussions

Educational technologies can encourage and facilitate a variety of interaction and teaching styles. Though many instructors are particularly familiar with solitary teaching techniques where learners attend lectures and interact with content such as library resources, databases, reading journals, etc., this section focuses on teaching techniques that encourage and facilitate peer interaction.

Small group assignments in your course provide students an opportunity to learn from their peers, interact in a team environment, brainstorm and debate issues and ideas, and role-play. Two possible uses of groups include:

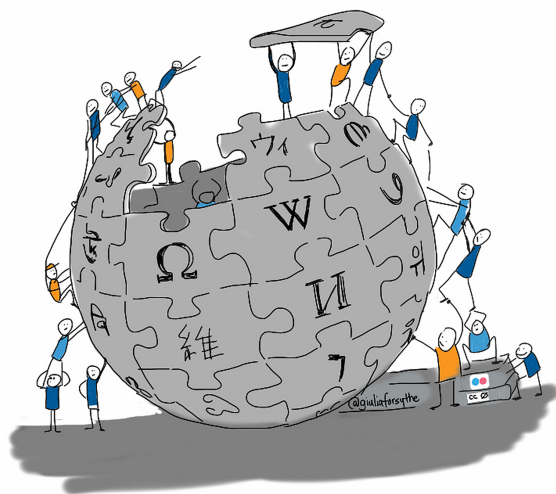
1. **Discussion Groups** focus on issues related to course content and require higher-order thinking skills. The instructor facilitates the discussion, guiding and encouraging participation when needed. These groups may be a required aspect of the course, accounting for some participation grade or overall value.
2. **Project Groups** are generally small groups that interact to accomplish a shared goal (e.g., project, paper, presentation). Projects may be submitted to the instructor or used as a learning activity for the entire class, possibly including a group presentation followed by a discussion.

The following video discusses strategies for creating and evaluating effective online discussions.



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<https://opentextbooks.uregina.ca/teachingtech/?p=57>

Wikis



Wikis are collaboratively written, edited, revised, and managed web pages. Ideal for group research and writing projects, the history function in wikis allows instructors and students to see the contributions of each group member in minute detail. They may be deployed at the course, group, or individual level.

Wikipedia is one of the most prominent wiki tools on the Internet. Entries are created and anyone can add entries, revise existing ones, etc. You might think of this tool as an exercise in “group think”. Wikis can be used as a knowledge management system, as a community-based website, and as a learner-centred project.



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<https://opentextbooks.uregina.ca/teachingtech/?p=57#h5p-16>

Blogs

Blogs, a shortened term for “web-log”, are online personal journals or opinion articles publicly accessed on the Internet. They can also be password-protected by being placed on a secure server or private network. Blogs work well in small classes; however, they have been effectively used in large classes by creating group or team blogs. Generally, blogs have frequent updates and posts that are displayed in descending chronological order. Blog entries can include images, recorded sound files or active links to other websites or blogs. A blogger is anyone who creates or contributes to a blog, usually by sharing ideas, feelings, hobbies, or work.

Instructors have found blogs to be an effective communication mechanism to assist with a variety of outcomes. The following are examples from experienced educators:



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<https://opentextbooks.uregina.ca/teachingtech/?p=57#h5p-17>

Social Media



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=57>

Featuring: Shawn Graham (Carleton), Dan Gillis (Guelph), Bob Burk (Carleton), MJ D'Elia (Guelph).

The popularity of social networking websites has rapidly increased in the past few years. Social networking websites continue to be generally regarded as personal social spaces rather than platforms for teaching and learning (Baran, 2010). While this may be true, there are several pedagogies that utilize social networking sites for teaching purposes.



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=57#h5p-18>

Teaching with web 2.0 technologies: Twitter, wikis & blogs – Case study

13. Teaching with Case Studies

The Case Study method is based on focused stories, rooted in reality, and provides contextual information such as background, characters, setting, and enough specific details to provide some guidance. Cases can be used to illustrate, remediate, and practice critical thinking, teamwork, research, and communication skills. Classroom applications of the case study method include:

- Socratic cross examination
- Directed discussion or research teams
- Public hearings or trials
- Dialogue paper (e.g., 10 exchanges between two characters from opposing sides of an issue that finish with a personal opinion or reflection)

At the Fifth Annual Conference on Case Study Teaching in Science hosted by the University of Buffalo-SUNY, two broad categories of case studies were identified (recognizing potential overlap):

1. **Open or Closed:** Open cases are left to one's interpretation and may have multiple correct or valid answers depending on the rationale and facts presented in the case analysis. Closed cases have specific, correct answers or processes that must be followed in order to arrive at the correct analysis.
2. **Analysis or Dilemma:** Analysis Cases (Issues Cases) are a general account of "what happened." Dilemma Cases (Decision Cases) require students to make a decision or take action given certain information.

Case Study Analysis Process

Based on a variety of different case study analysis models, we have identified four basic stages students follow in analyzing a case study. This process may vary depending on discipline and if case studies are being used as part of a problem-based learning exercise.

1. Observe the facts and issues that are present without interpretation ("what do we know").
2. Develop hypotheses/questions, formulate predictions, and provide explanations or justifications based on the known information ("what do we need to know").
3. Collect and explore relevant data to answer open questions, reinforce/refute hypotheses, and formulate new hypotheses and questions.
4. Communicate findings including citations and documentation.



How to Write a Case Study

Effective case studies tell a story, have compelling and identifiable characters, contain depth and complexity, and have dilemmas that are not easily resolved. The following steps provide a general guide for use in identifying the various issues and criteria comprising a good case study.

1. Identify a course and list the teachable principles, topics, and issues (often a difficult or complex concept students just don't "get").
2. List any relevant controversies and subtopics that further describe your topics.
3. Identify stakeholders or those affected by the issue (from that list, consider choosing one central character on which to base the case study).
4. Identify teaching methods that might be used (team project, dialogue paper, debate, etc.) as well as the most appropriate assessment method (peer or team assessments, participation grade, etc.).
5. Decide what materials and resources will be provided to students.
6. Identify and describe the deliverables students will produce (paper, presentation, etc.).
7. Select the category of case study (open or closed/analysis or dilemma) that best fits your topic, scenario, learning outcomes, teaching method, and assessment strategy. Write your case study and include teaching notes outlining the critical elements identified above.
8. Teach the case and subsequently make any necessary revisions.

Problem-Based Learning (PBL)

PBL uses case studies in a slightly different way by providing a more specific structure for learning. The medical field uses this approach extensively. According to Barrows & Tamblyn (1980), the case problem is presented first in the learning sequence, before any background preparation has occurred. The case study analysis process outlined above is used with PBL; the main difference being that cases are presented in pieces, with increasing amounts of specific detail provided in each layer of the case (e.g., part one of the case may simply be a patient admission form, part two may provide a summary of patient examination notes, part three may contain specific medical test results, and so on).

The problem-based learning approach encourages student-directed learning and allows the instructor to serve as a facilitator. Students frame and identify problems and continually identify and test hypotheses. During group tutorials, case-related questions arise that students are unable to answer. These questions form the basis for learning issues that

students will study independently between sessions. This method requires an alert and actively involved instructor to facilitate.

14. Educational Technologies

Selecting Educational Technologies

This video discusses criteria for evaluating and selecting appropriate educational technologies for online courses.



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=62>

Featuring: Steve Joordens (Toronto), Peggy Hartwick (Carleton), James M. Skidmore (Waterloo), Don Boyes (Toronto), Franco Taverna (Toronto).

Creating and Managing Your Course Website



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=62#h5p-19>

Recommended tools

The following are Isaak-Sakai site tools that have proven to be the most useful and user-friendly to both new and seasoned users of educational technologies:



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=62#h5p-20>

Collaborative tools

The following tools are effective at facilitating synchronous (real-time) or asynchronous (anytime) remote collaboration among students participating in group projects, meetings, or lectures. Note that it is advisable to seek assistance from CPI staff or to consult support documentation when enabling more complex tools for use in course sites.



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=62#h5p-21>

15. Video and Media

Creating Video Lectures

eLearning courses often successfully use online lectures as a method of delivering course content. The Centre for Pedagogical Innovation suggests the use of Snagit or LifeSize for lecture recording, Camtasia or Vegas for editing, and various solutions for hosting your lecture videos once they are ready to be viewed.

Tips on Video Production

A 2014 paper by Guo, Kim and Rubin titled *How Video Production Affects Student Engagement: An Empirical Study of MOOC Videos*, presented an empirical study of how video production affected student engagement in 862 videos from four edX courses offered in the Fall 2012 to 128,000 students. Guo's seven summarized recommendations from his 2014 blog post match the CPI's guidance and experience:



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<https://opentextbooks.uregina.ca/teachingtech/?p=65#h5p-22>

Content File Types Used in Web-enriched Courses

There are a variety of file types that will contribute to your course website. Depending on the content and media you select to complement your course goals, you may capture and edit video files, develop written content in HTML, or simply distribute lecture notes in PDF. The following file types are used most commonly by instructors in course websites:

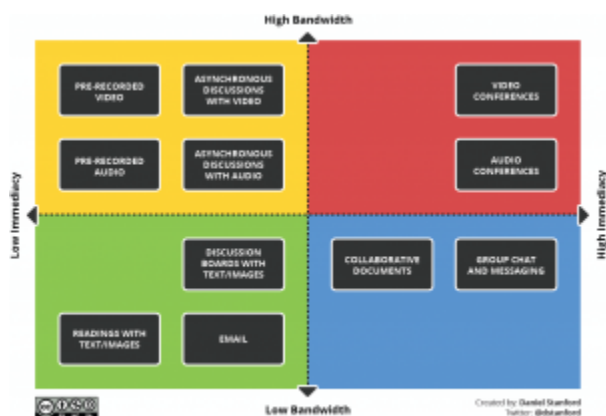
- **HTML files** are the most common files used on the Internet. Generally, we recommend generating these files for your course site because they are easily accessible for students. Many instructors write their content in SoftChalk, an easy-to-use HTML editor that offers functionality similar to document creators such as Microsoft Word, but offers added tools to create directories and integrate with course sites. Alternatively, instructors may choose to use familiar programs such as Microsoft Word and save documents as HTML pages.
- **PDF (Portable Document Format) files** are very popular for distribution via the Internet. PDF files are excellent for disseminating papers, readings, or image-rich lecture materials, and tend to be more accessible than many other types of web-based documents.
- **Word files** are often uploaded by instructors to their course site. Because some students may not have similar or up-to-date programs with which to read DOC files, a safe measure would be to save Word files as RTF files. Note that doing so should keep nearly all formatting provided by Microsoft Word intact.
- **PowerPoint** is another file type popular among instructors. Because PPT files are often completely inaccessible if the end user does not have a compatible version, and because file sizes are generally much larger than is

recommended, consider exporting the text or slides to Word (File > Send To > Microsoft Word), which gives you the same content in a more manageable format. It is also possible to export a PowerPoint presentation to PDF.

Low-bandwidth Teaching

Remote teaching and learning brings with it a number of considerations and challenges. If learners are able to connect to free/institutional networks (e.g., from local libraries, or on-campus student work areas), they will likely be able to access a safe, reliable, and robust internet connection. However, if these learners are relying on home-based connections, these will likely have a slower speed connection, and their service may be shared with others in their house (for work, or education, or entertainment).

Daniel Stanford's article provides some guidance on the impact of videoconferencing on bandwidth and immediacy. His *Bandwidth Immediacy Matrix* (embedded below) prompts educators to shift our thinking, "[b]y reflecting on the unique pros and cons of each zone and the drawbacks that come with high-bandwidth/high-immediacy tools, we can identify ways to make our courses more flexible and accessible."



[click image for a higher quality version](#)

Here's a quick definition of internet bandwidth.

While we're considering activities that lower the bandwidth, it's also to have a refresher on how to optimize images, PDFs, etc. for effective distribution *before you post them to your LMS or send them via email*. We've broken these down into separate pages, linked below. These solutions are also mostly based on our experience working on Mac platforms, and there are likely some Windows-based tools that should be included here.

- Optimizing documents
- Optimizing video files
- Optimizing pdfs
- Optimizing images

Tips on Course Web Page Design

Instructional web sites need to meet a variety of requirements. Pages must contain quality information. In addition, the site should be visually pleasing, download quickly, and have intuitive navigational features.



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=65#h5p-23>

For additional information on general style and layout issues, as well as issues specific to the Internet, consult Yale's Web Style Guide.

PART V

FACILITATING MEANINGFUL LEARNING

16. Building Community, Engaging and Motivating Students

Palloff and Pratt's book, *Building Learning Communities in Cyberspace*, maintains that a learning community is the defining hallmark of the successful distributed/distance education effort. Using the computer for significant course interaction can be an experience different from teaching a face-to-face course. This section guide will provide information on the following issues:

- How can instructors create interactive learning environments?
- How can instructors become successful interaction facilitators?
- What interaction tools are available for distributed/distance education?
- What interactive teaching methods could be implemented in a course?

Cultivating Supportive Online Environments



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=68>

Featuring: Giulia Forsythe (Brock), Patrick Lyons (Carleton), Steve Joordens (Toronto), Shawn Graham (Carleton).

Characteristics of Effective Teaching in Any Setting

How do you engage and facilitate learning with students? One report, titled *Students' Perceptions of Effective Teaching in Higher Education*, examined student feedback on what makes an effective and engaging college instructor in traditional classroom, hybrid, and online modalities. They list nine characteristics held consistently valuable across the spectrum, which is provided below in the sequence specifically relating to an eLearning context (Delaney, Johnson, Johnson, & Treslan, p. 6, 2010):

1. Respectful
2. Responsive
3. Knowledgeable
4. Approachable
5. Communicative
6. Organized
7. Engaging
8. Professional
9. Humorous

Good, quality teaching, regardless of the time, place, format, or modality, enhances the student experience. Some of these characteristics are certainly easier, if not simply more familiar, in a physical classroom; but given experience, practice, and sometimes patience, they are just as attainable in the cyber classroom. Moreover, these characteristics align closely with the course design rubric created by QualityMatters (QM). Whereas the QM tool addresses the content, instructional strategies and approaches, as well as resources that comprise a well designed course, these nine characteristics relate back to the 'human side' of teaching.

The Centre for Pedagogical Innovation (CPI) offers support for tailoring instructional methods to technology-enhanced distance and blended courses.

The Importance of Interaction

Interaction is important for quality learning. It may be defined as direct communication, with the telecommunication infrastructure (interactive video, computer, telephone, fax, or other technology tools) acting as the mediating tool. The emphasis is on communication and not technology (which is the tool for communication). There are many types of interaction. There is interaction with instructional content, among peers, or between instructor and students. Most importantly, it needs to have a purpose. This implies that a learning environment has been created and interaction strategies can be guided to support learning outcomes. Interaction can be particularly supportive of:

- Higher-order learning skills (i.e., analysis, synthesis, or evaluation)
- Collaboration and cooperation skills
- The sharing of new ideas
- Creative thinking
- Equalizing mutual acceptance

Engaging Online Students



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=68>

Featuring: Franco Taverna (Toronto), James M. Skidmore (Waterloo), Patrick Lyons (Carleton), Tracy Penny-Light (Waterloo), Shawn Graham (Carleton), Maureen Connolly (Brock), Anne Trepanier (Carleton).



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=68#h5p-24>

The Role of the Instructor

Effective interaction must have adequate instructor preparation. Keep the following essential points in mind as you structure your online classroom.



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=68#h5p-25>

Tips for Assembling Discussion or Project Groups

Learning Management Systems (ie. Brock University's Isaak-Sakai platform) offer a diverse set of tools to enable small groups. Some instructors allow self-selection while others prefer to assign members based on information about background experiences.



An interactive H5P element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=68#h5p-26>

Motivation

There are two kinds of motivation: intrinsic and extrinsic. Goal-oriented students and those who are experienced with technology may have intrinsic, or inner, motivation. However, most who initially encounter distance education and its technology, or who are inexperienced in the dynamics of group work, will need support, monitoring, facilitating, and feedback. For those who require extrinsic, or outside, motivation, you can attach a small percentage of students' grades to participation and contribution to encourage perseverance.

Motivation in Learning



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=68>

Featuring: Dan Gillis (Guelph), Maristela Petrovic-Dzerdz (Carleton), Steve Joordens (Toronto), Joy Mighty (Carleton).

Improving Student Motivation



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=68>

Featuring: Joy Mighty (Carleton), Dan Gillis (Guelph), Maureen Connolly (Brock), Denise Mohan (Guelph), MJ D'Elia (Guelph), Maristela Petrovic-Dzerdz (Carleton).

Evaluating Participation



*A YouTube element has been excluded from this version of the text. You can view it online here:
<https://opentextbooks.uregina.ca/teachingtech/?p=68>*

Featuring: Shawn Graham (Carleton), Bob Sproule (Waterloo), Franco Taverna (Toronto), Tracy Penny-Light (Waterloo).

17. A Survival Guide to Teaching Online

Once you have your course content developed, the fun begins! This section contains timely information to help you implement your technology-enhanced instruction and anticipate possible challenges. Hopefully, you have developed all of your content by now, but you need to continue engaging students in the course site, especially if you are teaching a fully online course. You need to have a regular presence so students feel there is someone on the other end.

Tips for the First Day(s) of Class

Welcome the class

Post a general “Welcome” announcement including how to get started in the class (e.g., read the syllabus and first unit) in addition to creating a discussion forum for “Class Introductions”. You can post a more thoughtful and complete welcome message to the class in the discussion board which may sound repetitive but consider this as an opportunity to humanize yourself in an online course as well as setting a tone for the class. Another great option would be to post a short video clip containing your greeting and brief introduction to course goals.

Finalize content

Aside from the syllabus, you should strive to have all major assignments, grading schemes, samples, readings, unit commentary, etc., available for use (you don’t want to be writing the course and teaching it at the same time). Once enrollments are loaded, any content released to students will be accessible as soon as they log into your course site. You may opt to date-release certain content (vigilantly check your dates for accuracy) but make sure everything loaded onto Isaak-Sakai is otherwise complete, accurate, and finalized.

Check your links

It is a good policy before the course goes “live” to click around and make sure all your external (and internal for that matter) links are active and bring the user to the intended destination. This measure is especially worthwhile when teaching a course developed in previous semesters, as online content may have been moved, modified, or withdrawn without your knowledge.

Set up and assign custom groups

If you are dividing your students into custom groups for tailored access to course content, discussions, or group projects, now is the time to create and assign groups to course site tools as appropriate. More information about creating custom site groups is available on the Manage Groups help page.

Set up the Forums

If you plan to use the Forums tool to facilitate weekly, monthly, or topic-based discussions, consider having the structure roughly in place to immediately greet students. This also means that any custom groups should be assigned to forums and discussions as needed. It is also helpful to have one of your own posts in place to offer greetings and serve as a model for students as they begin crafting their own forums content.

Set up the Assignments tool

If you plan to accept online submissions via your course site, the Assignments tool provides a great solution. Having this in place and properly configured with assignment information as needed will allow your students to better anticipate course expectations from the start.

Choose a communication method

Provide information about your intended communication format, frequency, and style so that students know what is expected of them moving forward. Isaak-Sakai offers several tools, such as Messages, Email, and Chat Room, for communication directly within course sites, but it is also possible to externally use Brock University email. Note that external email platforms such as Gmail or Yahoo are less secure than Brock University internal email and are thus not recommended for course-related correspondence.

Begin maintaining a presence

Particularly over the first few weeks, it's advisable to be active within your course site to engage your students. While it may not be possible to respond to every student posting in the course forums, skimming through and posting summative comments and observations fairly regularly will serve as an indication that you are following student-generated course content.

Tools to support instruction when class is cancelled

Though course lectures, seminars, and office hours may be cancelled or made problematic due to occurrences of inclement weather or flu pandemic, academic instruction can often continue in lieu of brick and mortar meeting places using Isaak-Sakai and other instructional technologies. Here are some specific tips when class has been cancelled:

1. Have students submit work through Isaak-Sakai's Dropbox tool or the Assignments tool.
2. Conduct office hours privately using the Isaak-Sakai's Messages tool or openly using the Chat Room tool.
3. Facilitate collaborative work using Isaak-Sakai's Forums tool, Etherpad, or a Kumu-hosted wiki.

Tips for Avoiding & Managing Overload

The following list of suggestions and tips may help you overcome some of the challenges you may encounter as a result of incorporating the use of the Internet into large enrollment classes.

1. Set aside blocks of time each week for responding to student email. Be realistic about how much time you can devote to this each day. Then stick with your schedule!
2. Be honest with students about the volume of email you receive daily and provide them with an honest window of expected response time back from you.
3. Tell students to be precise in creating subject lines, keep messages short, and focus on a single topic. Hold students accountable to your guidelines. Return files or messages that do not conform and ask that they rewrite or re-save their work.
4. Post to the group; rather than responding to each individual student contribution, respond to several at once by weaving them together and posting your answer to the class using tools like Announcements, Messages, or Forums.
5. Tell students to avoid fancy formatting such as tabs, tables and fonts unless you are certain all users can view them.
6. Model behaviour you expect in your own messages, such as making contributions short and making subject lines specific.
7. Include information, within your course site, on how to access technical assistance and support.
8. Students can be overwhelmed, too; give tips on how to handle overload. Also consider that multiple classes with multiple discussions generate many messages for students as well.
9. Use TAs for class support: assign TAs to monitor and/or moderate discussion forums and respond to discussion list questions to ensure they stay on track and on task.
 - Train Teaching Assistants in the use of technology.
 - Assign Teaching Assistants to be available to help students with problems.
 - Include Teaching Assistant names, emails, and times they are available for assistance on your site.

Tips to Encourage Academic Integrity in the Online Environment

Academic integrity and plagiarism have become more complicated issues with the explosion in access and use of the Internet. These tips are just a starting point for you to consider how to encourage academic honesty and discourage plagiarism. Further in-depth resources are available within the CPI's guide to Academic Integrity in the online learning environment.

- Show that you care about academic honesty. If your faculty or department does not promote an honour code, consider creating one for your course.
- Include information in your syllabus about intellectual property and academic honesty. Go over that information with the class.
- Provide online resources that further explain the details (and examples) of plagiarism and adhering to copyright law. This is sometimes more meaningful at the time of the assignment.
- Be a role model.
- Explain where and how you obtained your own online resources or examples.
- Exemplify and discuss ways to cite resources.
- Discuss the libraries' role in helping access electronic reference materials.

- Prepare your TAs to be role models, and to know how to detect plagiarism in grading.
- Discuss the negative impact of online “paper mills” that allow students to purchase work instead of creating their own.
- Indicate that you utilize search engines or software to detect plagiarism.

Academic Integrity/Plagiarism Resources

- Academic Integrity in the online learning environment
- Brock University Academic Integrity Policy (Code of Academic Conduct)
- Faculty Academic Integrity FAQ
- Writing and Citing guide – Brock’s James A. Gibson Library

How to get support

The Centre for Pedagogical Innovation (CPI) guides academic instruction in many forms; staff are pleased to offer support to educators intending to instruct or supplement instruction using tools within Isaak-Sakai or other Brock-supported platforms as well as advise on the use of externally-hosted options such as social media. For technology-related support for instruction, contact edtech@brocku.ca or 905 688 5550 x4734; for information about individual contacts within CPI, visit the CPI contact page.