EFFECTIVE TEACHING IN LARGE CLASSES

Strategies from Social Sciences Instructors

McMaster University | SOCIAL SCIENCES

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INTRODUCTION

Tracy Prowse, Catherine Swanson, Erin Allard

This guidebook was created by a group of creative and engaged instructors in the Faculty of Social Sciences at McMaster University who have experience teaching large classes. It is the outcome of a series of focus group discussions on effective teaching in large classes. This project was initiated by Dr. Charlotte Yates, the former Dean of Social Sciences, and facilitated by staff in the Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching. Focus group participants identified challenges they face teaching large classes in the Social Sciences and share their strategies for addressing these challenges. President Patrick Deane, in his 2011
Forward with Integrity letter to the McMaster community, noted that universities are facing the challenge of increasing student enrolment at a time when government funding is declining. One of the three priorities President Deane identified for McMaster's future is the development of "a distinct, effective, and sustainable undergraduate experience" (Deane, 2011, p.5). In support of this priority, this guide offers instructors a range of resources and strategies to help them provide a high quality learning experience for undergraduate students even given the constraints of large enrolment courses.

How do we define a "large" class? The term means different things to different people and in different contexts. It is not only based on actual student numbers, but also on the availability of teaching resources such as Teaching Assistant (TA)/instructional support. A large class can range from 80 to 100 students where the instructor has little or no additional support, to 500 students or more where there is a team of Teaching Assistants. And while most large classes are in first year, this is not always the case. The diverse characteristics of large classes mean that instructors can face a wide range of challenges in delivering a high quality undergraduate classroom experience. This guide focuses on four areas identified by contributors as those where they face their greatest challenges in large classes:

- Classroom Civility
- Student Engagement
- Effective Use of Technology
- Encouraging Writing

In each of the four sections there are tips, resources, and strategies to help instructors who teach large classes. There are also profiles of instructors from the Faculty of Social Sciences who have experience teaching large classes – they share their insights and suggestions on effective teaching and learning strategies. Each section also provides links and references for further information. Although this guide is centrally focused on effective teaching in large classes in the Faculty of Social Sciences, the strategies and resources within can also be of value to instructors teaching large classes in other Faculties, and to any instructors, independent of class size.

CIVILITY IN LARGE CLASSES

Contributors: Hannah Holmes, Tracy Prowse, and Catherine Swanson

A civil classroom can be defined as a welcoming, considerate, thoughtful, and respectful environment where learning can flourish. This section addresses the issue of incivility in large classes, and provides strategies to create a positive – and civil – classroom environment.

Civility in the Classroom in Context

Civility in the classroom is an important area of concern for many instructors of large classes. Incivility may occur more often in larger classes because of the perceived anonymity of students and the seemingly impersonal nature of large classes. However, inadvertent behaviours can arise in any size of class due to a lack of understanding by students of the rules of conduct (Carbone, 1999; Marini, 2009).

Some students think that texting, surfing the web, or talking with their friends during class are acceptable behaviours or that they go unnoticed by their professors or other students. However, these actions can have a negative impact on the classroom environment and the quality of learning. If these behaviours are not addressed at the beginning of a course, students may lose enthusiasm for the course, lose respect for the instructor, and become disengaged. Further, instructors may find themselves spending precious class time managing inappropriate behaviour rather than focusing on the course material.

Incivility is often described as a continuum of behaviours ranging from relatively mild disruptions to extremely disruptive behaviour (Marini, 2009). And what is considered to be disruptive can vary by instructor. For example, some instructors do not mind if students arrive late, while others consider this unacceptable behaviour. Instructors need to clearly communicate their expectations for appropriate classroom behavior to their students.

Emily Cowall, Instructor, Anthropology, on creating and fostering a civil classroom

"I have borrowed strategies from my previous experiences in adult education to set the stage for civil behaviour in the large classroom. During the first class meeting, I communicate my expectations to learners, building a framework of civil behaviour and a sense of commitment to adhering to rules of conduct. I express this with humour, and with seriousness.

Respect and Diversity

I explain that anthropology investigates people and their diversity. Each class, I remind students that we represent many cultural groups and experiences. I ask that they respect each other, and that they open up to the possibility of sharing and understanding their similarities and differences with acceptance and patience.

Technology Habits

I have often joked with students that, from my vantage point, I can see their faces glow with an unusual bright blue light whenever they are on a certain website. This always causes them to laugh when they realize I am telling them that I can see when they are on Facebook. I engage them in discussion concerning their commitment to staying present and attentive to the materials being delivered, even if they feel that they are capable of multi-tasking. However, I also ask students to be respectful of each other. I acknowledge that I cannot stop them; rather, I suggest that they should not behave in a way that is disruptive to their fellow students. I have also modified my own point of view. Yes, students will text message, surf the web, write on Facebook, and send Twitter messages when I am lecturing. I have let go of trying to control this and stay focused on the delivery of my course and facilitating class engagement.

Away from the Podium

I take advantage of the wireless microphones in large classrooms – the freedom to leave the podium or platform and to lecture from various points in the room. I am no longer behind a barrier. I stand amongst students. I roam and ensure I cover all aspects of the room, and I make direct eye contact with as many students as possible.

Simply being away from the podium is one way I maintain civility. If I observe a cluster of students talking and being disruptive, I go and stand near to them while I continue to lecture. This approach, being accessible and willing to let go of the podium, has stimulated new engagement opportunities and has caused students to participate. For example, I will discuss a topic and then ask for students' feedback or contributions. I have observed that my closeness to them has resulted in more students willing to talk and contribute when called upon.

My success at fostering civility is through establishing an environment of respect, inclusiveness, and engagement."

Causes of Incivility

There are a number of possible causes of classroom incivility (Berger, 2000; Drolet, 2012; Nordstrom et al., 2009). While the degree to which an instructor can control these factors varies, the following causes may play a role in incivility:

- Type and size of the classroom, with larger classes tending to have more cases of incivility.
- 'Classroom culture' developed by the instructor (e.g., perceived lack of respect for students, aloofness, defensiveness, and condescension).
- Consumerist attitude of students who believe that, since they are paying for a 'product'(i.e., their university degree), they should be able to decide what is acceptable.
- Narcissistic tendencies of students, which makes it difficult for them to understand how their disruptive behaviour can affect their peers or instructors.
- Mistaken assumptions by both faculty (e.g., the authority of the professor should never be questioned) and students (e.g., class should always be fun and entertaining).
- Inadequate assessment of prior knowledge, which can lead to student frustration if the material is too easy or too difficult.
- Changing student demographics that introduce a wider range of social, cultural, and economic backgrounds into the classroom.
- Changes in technology, exposing students to more avenues of distraction.
- Changing social attitudes towards what is defined as (un)civil behaviour.
- Gender of the instructor, with higher rates of incivility reported in classes with female instructors.
- Gender of the student, with males more likely to view uncivil classroom behaviours as appropriate.

Consequences of Incivility

There is a range of possible consequences for both instructor and students when incivility occurs in the classroom:

- It can lead to the instructor's loss of confidence in teaching, and defensive, demoralized, or indifferent behaviour (Berger, 2000).
- It can lead to student disengagement and a lack of participation, which can ultimately affect their learning experience (Gunn, 2012).
- Beyond the classroom, it can negatively influence students' perceptions of their academic development and affect their commitment to the university (Hirschy & Braxton, 2004).

David Goutor, Assistant Professor, Labour Studies, on disruptive students

"My tip is that in a large class there will always, always be a few students who are not paying attention. Unless they are being disruptive, it is important to avoid getting too distracted by those students. Even if you are giving your best lecture, there will be the proverbial "one in every crowd" that is not listening, or is off somewhere else. Conversely, it is helpful to focus on the students who are engaged – it makes you a better and more upbeat lecturer overall."

Strategies to Foster Civility and Create a Positive Classroom Environment

Many instructors believe that student engagement is a key to maintaining civility in large classes. Some instructors report that having students constantly doing something, such as using i>clickers or filling in blanks on PowerPoint slides, helps to maintain civility. Other instructors engage students in small group discussions about a topic or question, ask for feedback, and then write students' ideas on a PowerPoint slide. Visuals such as video clips or cartoons, especially those that have relevance to students' lives, tend to be very engaging.

Instructors in the Faculty of Social Sciences who teach large classes use a number of strategies to both create and sustain civility and a positive classroom environment. Many agree that the key to a civil classroom is planning and preparation for this outcome, even before a course begins.

The following tips can help create a positive classroom environment:

- Determine ground rules for civil behavior and clearly outline to the class what constitutes (in)appropriate and (un)acceptable behaviour.
- Establish consequences for inappropriate behaviours.
- Discuss ground rules and consequences for breaching those rules in class at the beginning of the term, and give students periodic reminders.
- Explicitly state the ground rules – and consequences – in the course syllabus.
- Encourage students to be mindful of their own behaviour and respectful of their peers.
- Empower students to address inappropriate behaviours by others by speaking directly to their peers or by notifying the instructor to the behaviours.

Strategies to Manage Incivility in the Classroom

Even with careful planning and preparation, situations of incivility do sometimes arise. Here are a few tips from instructors regarding how to manage incivility when it occurs:

- SOAR – stop, observe, assess, and react.
- Address the behaviours, not the person(s) involved.
- Be aware of body language and non-verbal communication.
- Uphold class 'rules of conduct' – address issues that arise each and every time and remain consistent in dealing with students using the class guidelines.
- Speak to the student in private – ask them to explain what occurred, listen to and acknowledge what they say by repeating it, and discuss possible solutions.

Civility Statements In Course Syllabi: One Example from Anthropology 1AA3

Given the difficulty that some instructors experience in navigating the topic of incivility in their courses, below is an example of how the topic of incivility is addressed in an Anthropology 1AA3 course syllabus:

Student Behaviour and Responsibilities

Classroom Behaviour:

- Please do not be afraid to ask questions or provide constructive comments! If you do not understand something, or if I have gone over a concept too fast, stop me and ask a question. Chances are if you do not understand something, other people in the class are in the same position.
- Please ensure that cell phones are turned off (including text messaging, Twitter, etc.) and arrive on time for class. If you have to leave class early, please sit near one of the exits.
- Laptop computers may be used in class for taking notes, but students using their computers for any other purpose (e.g., checking Facebook) will be asked to turn their computers off.
- Please be polite to your neighbours and keep conversation to a minimum.

Social Media Use in the Classroom:

- Each student in this course has a responsibility to other students, themselves and the instructor to contribute to a courteous, respectful learning environment. The instructor may prohibit any use of hand-held or wireless technology that substantially disrupts learning opportunities, degrades the learning environment, or promotes academic dishonesty or illegal activities.
- Communication by electronic devices, including but not limited to instant messaging, text messaging, web surfing, and telephoning during class, is strictly prohibited unless expressly designated as part of the learning activities. Electronic audio or video recording of the classroom environment is prohibited unless permission is given by the instructor prior to the recording. Devices must be silenced or turned off and should not be taken out during class.
- If personal emergency, family care responsibilities or employment situations require access to electronic communication devices, arrangements must be made in advance with the instructor.
- Students unsure of whether an activity is appropriate are encouraged to ask the instructor. Students are also encouraged to notify the instructor in confidence of disruptive behaviour they observe.
- Sanctions of violation of this policy will be determined by the instructor and may include dismissal from class, attendance penalties or loss of class participation points, zero grades on quizzes or examinations, failure in the class, or other penalties that the instructor determines to be appropriate.

Social Media Etiquette:

- Be sure your sound is off at the beginning of every class.
- Stay on task. Focused attention is needed for effective learning. Surfing, watching movies and gaming are distracting for both you and your classmates.
- Follow all social media guidelines stated in the syllabus.
- Listen to your classmates if they complain that your media use is distracting.

Common Examples of Incivility

Incivility can be passive (e.g., coming in to class late) or active (e.g., using verbally abusive language with the instructor or other students) (Berger, 2000), and can involve a wide range of behaviours:

- Inattention (e.g., doing homework in class, reading a newspaper).
- Cell phone use – talking or texting.
- Inappropriate use of computers (e.g., watching YouTube videos during class).
- Talking with friends during class.
- Napping.
- Dominating classroom discussion, or expressing intolerance/disrespect of others' views.
- Intimidation of other students or the instructor.
- Verbal or physical attacks.
- Loudly packing up personal belongings before the end of class.
- Leaving early.

Managing Student Technology Use in the Classroom

One of the most striking characteristics of 21st century students is that they are products of a technology-rich environment. And their environment is shaping their educational expectations and experiences. Technology use in the classroom today takes on many forms (e.g., using a laptop to take notes, using the internet to do research in class). When used appropriately, technology can enhance the student learning experience. It is students' inappropriate use of technology that is disruptive to the learning environment.

It is important for instructors to understand how students perceive civility with respect to technology, as it may differ from their own views on appropriate classroom behaviour. Some common inappropriate technology-related student behaviours in the classroom include:

- Cell phone ringing and talking.
- Text messaging.
- Listening to music.
- Using a mobile device for non-class work.
- Sending inappropriate emails to instructors.

Much of this inappropriate technology use in the classroom is due to the fact that, in general, students are accustomed to and expect constant stimulation, and they prefer visual modes of communication over speech or text alone. Crenshaw (2008) calls students natural "switchtaskers" who simultaneously try to learn, do homework, watch TV, listen to music, and instant message.

USEFUL LINKS ON CIVILITY

Addressing Problematic Student Behavior (Carnegie Mellon University Eberly Center)
http://www.cmu.edu/teaching/designteach/teach/problemstudent.html
Faculty Guide to Addressing Disruptive Behaviour (McMaster University)
http://studentconduct.mcmaster.ca/pdf/Faculty-2007.pdf.
Managing Hot Moments in the Classroom, by Lee Warren (Derek Bok Center)
http://bokcenter.harvard.edu/managing-hot-moments-classroom
Passive vs. Aggressive Student Incivilities (Indiana University Bloomington Kelley School of Business)
https://kelley.iu.edu/ICWEB/Teaching%20Learning%20Library/Practical%20Applications/page1739.html
Teaching Strategies: Incivility in the College Classroom (University of Michigan Center for Research on Learning & Teaching)
http://www.crlt.umich.edu/tstrategies/incivility

CIVILITY IN LARGE CLASSES REFERENCES

Berger, B. A. (2000). Incivility. American Journal of Pharmaceutical Education, 64, 445-450.

Bjorklund, W. L., & Rehling, D. L. (2009). Student perception of classroom incivility. College Teaching, 58, 15-18.

Carbone, E. (1999). Students behaving badly in large classes. New Directions for Teaching and Learning, 77, 35-43.

Crenshaw, D. (2008). The myth of multitasking: How "doing it all" gets nothing done. San Francisco, CA: Jossey-Bass.

Drolet, D. (2012). Defusing class disruptions. University Affairs. Retrieved from http://www.universityaffairs.ca/features/feature-article/defusing-class-disruptions/.

Feldmann, L. J. (2001). Classroom civility is another of our instructor responsibilities. College Teaching, 49(4), 137-140.

Gunn, C. (2012). Is uncivil behaviour hijacking your classroom? University Affairs. Retrieved from www.universityaffairs.ca/career-advice/career-advice-article/is-uncivil-behaviour-hijacking-your-classroom/.

Hirschy, A. S., & Braxton, J. M. (2004). Effects of classroom incivilities on students. New Directions for Teaching and Learning, 99, 67-76.

Marini, Z. (2009). The thin line between civility and incivility: Fostering reflection and self- awareness to create a civil learning community. Collected Essays on Teaching and Learning II, 61-67.

Nordstrom, C. R., Bartels, L. K., & Bucy, J. (2009). Predicting and curbing classroom incivility in higher education. College Student Journal, 43, 74-84.

STUDENT ENGAGEMENT IN LARGE CLASSES

Contributors: Erin Allard, Geraldine Voros, Philippa Carter

There are challenges that instructors often face in keeping students engaged in their large classes. There are, however, strategies that can help instructors improve student engagement. Regardless of which strategies instructors choose, one thing they should always consider is accessibility.

Accessibility and Accommodation

To create and foster a learning environment that is accessible for all students, instructors are responsible for providing course information in a range of formats (e.g., online, print, verbal), and in an accessible manner. Further, instructors are required to provide individualized accommodations to students who are registered with, and have approved accommodations through, Student Accessibility Services (SAS). For more information about accessibility and accommodation at McMaster University, please visit the Student Accessibility Services website at https://sas.mcmaster.ca or the Accessibility at McMaster website at http://accessibility.mcmaster.ca. To learn more about accessibility in Ontario more broadly, and The Accessibility For Ontarians with Disabilities Act, 2005 (AODA), please visit http://www.mcss.gov.on.ca/documents/en/mcss/publications/accessibility/AboutAODAWeb20080311EN.pdf.

"Podcasting has a number of benefits for students. It complements the Accessibility for Ontarians with Disabilities Act with regard to an inclusive educational environment, and also speaks to new technologies that facilitate all students with regard to universal instructional design. Having introduced podcasts in courses taught at the university level, the benefit of the practice proves to have many more advantages than challenges. The research on its implementation and the observations of its in-course use as a learning tool reveal a technology that addresses many structural, social, psychological, and personal issues directly related to the learning experience of the student. Overall, podcasting appears to enable not only special needs students, but all students, to maximize their academic experience should they access and employ the system wisely.

First and foremost, the podcasts in my course were introduced to facilitate the growing number of students with special needs that were in course and unquestionably needing reliable support. In the past, volunteer note-takers were the more common source of aid offered to these students, however, this was not always successful. Note-takers were sometimes ill, missing class and/or took less than thorough notes. Depending on the students' special needs, students requiring support could very well find themselves lacking in appropriate and meaningful facilitation. For example, a hearing impaired student relies heavily on the note-taker. The professor is not always facing the hearing impaired student as they lecture, and so the student is not always able to read the lecturer's lips. The need for the safety-net of a note-taker is without question. However, with the introduction of the podcast, this same student has timely access to the lectures made available in the portal on Avenue to Learn. Within twenty-four hours or less, the student can go online, retrieve the edited podcast, and take their own set of robust, clear, and identifiable notes in the privacy of his or her study room. Students have their own ways of learning, so in essence, the podcasts have permitted students to become independent academics who have the opportunity to customize their learning experience.

This same approach has facilitated many other special needs students. Students with a variety of health challenges, including multiple sclerosis, lupus, cerebral palsy, Parkinson's, vision impairment, cancer, other chronic diseases, attention deficit disorder, obsessive compulsive disorder, head trauma, and mental health issues are all now able to study when they feel well enough. The beauty of the podcast is that it is there when the student feels ready and willing to access the information to engage in the optimum learning experience. The student empowers himself or herself to maximize learning, given the flexibility to work at his or her own pace in an independent and confident manner."

Student Engagement Strategies

Instructors in Social Sciences identified a number of strategies they found useful for engaging students in their large classes.

This section discusses student engagement strategies that involve the use of:

- Technology
- Discussion
- Examples
- Active Learning
- Critical Reflection
- Course Evaluation

Technology

Given that technology is ubiquitous in education today, it is no surprise that there are various ways in which technology may be used in large classes. Many instructors use PowerPoint slides in lectures, as well as audio/visual presentations and personal (student) classroom response devices (e.g., i>clickers). Most of the larger lecture halls at McMaster are equipped with Smartboards, which allow instructors to write on PowerPoint slides and highlight key points. Some instructors also record their lectures and post them as podcasts on their learning management system. These and other topics will be addressed in greater depth in the "Effective Use of Technology in Large Classes" section, later in the guide.

"As a key recommendation of the Forward with Integrity's Student Experience Taskforce, the Learning Portfolio was seen as an exciting new aspect of the McMaster student experience. Using the Learning Portfolio function initially on Avenue to Learn (and now on the PebblePad platform), students are able to put together an e-Portfolio on where they can develop their individual learning goals, preserve evidence of their learning from their McMaster courses, reflect on their experiences inside and outside the classroom, and arrange some or all of these "artifacts" in presentations that can be made available to fellow students or other members of the McMaster community, to potential employers, or to others not associated with the university. The ability to steward or curate the Portfolio continues after the student has graduated and PebblePad has guaranteed that graduates will be able to share all or part of their Portfolios with others in perpetuity.

The Learning Portfolio is marked by a flexibility that adapts to each student's learning goals. Starting in the academic year 2013/2014, several faculty members from across the university began to use the Learning Portfolio in assignments for their courses. Additionally, SOC SCI 2LP3, a pilot project funded through a special grant from the President's Office and matching funds from the Faculty of Social Sciences, focused on cultivating a core group of peer mentors to assist incoming students in mastering the Learning Portfolio functionality of Avenue to Learn and in developing their learning goals.

Many universities and colleges across Canada and the United States have implemented a version of the Learning Portfolio. McMaster's approach is overtly student-centred based on the learning goals that students develop for themselves. Not only can the Learning Portfolio demonstrate that students have met the Degree Level Expectations mandated by the provincial government, but more importantly they offer a place where students can "take charge" of their own learning both in and out of the classroom.

Requiring students in our classes to collect artifacts for a Learning Portfolio presentation that will be graded provides them with opportunities to develop their learning goals, as well as fulfill course requirements. Using the Learning Portfolio presentation feature to supplement or replace traditional assignments (e.g., essays, exams) offers a way of bringing together learning experiences from coursework and experiences in the broader world in a tangible (albeit digital!) way.

The technology can seem daunting at first, but workshops and other resources are available through the McPherson Institute for instructors who are interested in contributing to the success of the McMaster Learning Portfolio. You can find out more about the Learning Portfolio on the McPherson Institute website at: https://mi.mcmaster.ca/learning-portfolio. I used my Learning Portfolio to put together my Teaching Portfolio!"

Philippa Carter, Teaching Professor, Religious Studies, on the Learning Portfolio

Discussion

Why Discussion is Valuable

- Discussion is valuable in that it enhances the learning/ retention of material (McKeachie & Svinicki, 2006), helps students create personal connections with material, and allows students to be co-creators of knowledge (Brookfield & Preskill, 1999).

- Engaging in discussion may also improve students' ability to verbalize ideas coherently, listen to and respond to others' ideas, and evaluate their skill in discussion.

- Hearing feedback from other students and the instructor may make a big difference in learning retention and use of knowledge, as the responses permit students to get their ideas checked (students have the opportunity to reflect on and evaluate their own insight and understanding), which can then help them to refine or develop extensions of their ideas.

- Instructors should make students aware of the benefits of discussion as this may increase their desire and willingness to participate.

How to Engage Students in Discussion

Almost all instructors would agree that it is, at times, a challenge to get students talking in class. Below are some strategies that Social Sciences instructors identified as useful to encourage discussion.

Think-Pair-Share is a technique that Social Sciences instructors identified for engaging students in class discussion – even in very large classes.

- For this technique, the instructor prompts students by providing a question to fuel their thinking.

- Students are then given some time (typically 1-3 minutes) to independently think through an appropriate answer – the Think part.

- Each student then pairs with a classmate and they discuss their responses with one another – the Pair part.

- This permits students to rehearse their responses, while also gaining valuable feedback from a peer (it thus reduces the risk associated with sharing their answer with the larger class as it has already been screened by another person).

- Students are then asked to volunteer to share the results of their discussion with the larger class, one at a time – the Share part.

- Students should be asked to speak loudly, and the instructor should summarize each student's contribution in case hearing is an issue in certain locations of the classroom.

- Instructors should facilitate transitions between parts of the exercise, using both verbal and visual cues. This is particularly important in very large classes.

The Think-Pair-Share technique can be very successful for getting students actively engaged in the learning process. Personal Classroom Response Devices, such as i>clickers, can be useful tools to encourage student engagement. If having students vocally share their discussion conclusions does not work well in a class, instructors can still have students discuss questions amongst themselves and then ask students to report responses using their i>clicker or other personal classroom response device.

- For best results, instructors should not show students possible answers beforehand so as not to lead them to certain responses.

- When the instructor is satisfied that the discussion is complete, he or she can then provide students with possible answer choices from which students select their answer.
- It is a good idea to include "other" as a choice; instructors can then ask students who chose this response to share with the class how they came to that answer.

To create effective classroom discussion questions, the questions should be:

- interesting and engaging (to motivate student discussion)
- high-level (require application, analysis, synthesis, or evaluation)
- divergent (suggest many possible correct responses)
- structured (direct the student to a specific approach, area of the subject matter, or framework to arrive at an answer)
- straightforward (clear; addressing one issue at a time).

Questions that fit these criteria have been found to produce 2 to 3 times more responses than questions that do not. They have also been found to help students develop cognitive skills (Andrews, 1980).

The '*10-Second Rule*' is a strategy that some Social Sciences instructors use to encourage student involvement in class discussion. To give students sufficient time to develop an answer to the question they have posed to the class, some instructors silently count to 10 before moving on or providing their own response. It is important to remember that some silence is okay – students need extra time to process and think about the questions before they can formulate a response.

Why Students Choose Not to Participate in Discussion

Most instructors have had at least one frustrating experience facilitating discussion. The most common cause of frustration is getting students to participate in class discussion. There are a host of reasons why students may choose not to participate.

Some of these reasons, as well as ways to prevent or address them (McKeachie & Svinicki, 2006), are discussed below.

Students Feeling They Don't Have Sufficient Time to Formulate a Response: When instructors pose a question for discussion, it is important to allow students time to process the question and think of a potential response before instructors provide their own response (again, using the"10-second rule" can be useful). Also, to encourage a fuller discussion, instructors should seek responses from more than one student for each question, including asking for different perspectives on a question or issue.

Students Feeling Their Task is to Find the Answer the Instructor Wants Rather than to Explore and Evaluate Possibilities: Instructors should ask questions that do not necessarily have one correct answer, take responses from more than one student for each question, and ask if anyone has another perspective on the problem that they would like to share.

Student Boredom: Instructors should try to keep the class 'dynamic' to keep students engaged. To accomplish this, an instructor may want to consider changing gears (shifting from lecturing to an activity, for example) approximately every 15 to 20 minutes. Research has found (Prince, 2004) that students' attention in lectures tends to dissipate after approximately 15 minutes.

Students' Failure to See the Value of Discussion: Instructors should seek to help students understand why participating in discussion is, generally speaking, valuable to student learning. Instructors should also look for opportunities to remind their students as to why participating in course-specific discussions is valuable, given the context of the course.

Students' Habits of Passivity: Instructors might consider making participation a component of the assessment scheme for the course to encourage students to participate in discussion.

Cultural Norms that Discourage Students from Speaking in Class: If instructors expect students to participate in class discussion, they need to create classroom norms and expectations that will promote discussion, and to do so early in the course. Instructors should clearly articulate their participation expectations and then give students an opportunity to model this during the first class (for example, including an activity in that class that gets all students talking).

Fear of Criticism or of Looking Stupid, Often Due to Perceived Lack of Knowledge: To encourage a baseline of knowledge for discussions, instructors should assign readings in advance or provide students with a common experience in class (e.g., have them watch a video together) that they can draw from to participate in discussion.

Ann Herring, Professor, Anthropology, on discussion in the classroom

"One thing I find works well is to present a problem I've faced in my research and ask the students for suggestions about how it might be interpreted, approached, what questions might be asked, etc. They tend to respond quite well to this opportunity to deal with a "real" situation and use their creativity."

Walt Peace, Associate Professor, Geography and Earth Sciences, on making students feel comfortable in the classroom

"One of the challenges of teaching large classes (especially first-year classes) is making students feel comfortable and at ease with the real and perceived barriers that separate students from instructors. Students can (and should) be made to feel at ease with the instructor such that they are willing and able to ask questions, get advice, etc. both in and outside of the classroom. In order to encourage students to feel more comfortable, I make sure that my office hours are clearly stated on course outlines and on course websites on Avenue to Learn. In addition, I post a teaching/office hours schedule on my office door. In each class, I make a point of encouraging students to ask questions – questions which may or may not be directly related to course material (either in class or outside of class). I also, from time to time, use a few minutes in class to discuss current/upcoming events (on campus, in the community, in world news, etc.) even though these events may be completely unrelated to specific course content. My intent with each of these strategies is to make students feel more at ease and to let them know that I am human, too (just like them). My experience tells me that when students are more comfortable, they are also more likely to engage with the course material. More engaged students (and instructors) enhance teaching and learning."

Challenges Related to Discussion

There are a number of discussion-related challenges (McKeachie & Svinicki, 2006) that instructors encounter in large classes that they need to address. They include the following:

Incessant Talkers: Given that it is sometimes extremely challenging to get students to participate in class discussion, instructors often come to appreciate the students who participate in discussion regularly. When those students participate too much, however, it reduces opportunity for other students to do so. One strategy an instructor may use to reinforce their appreciation of regular participants while encouraging non- or less-frequent- participants is to simply say "We have heard from some of you several times, which is great because I love seeing your understanding of the topic progress, but now let's hear from someone who hasn't shared yet today." If one of the regular participants in their class goes beyond simply offering to particulate regularly and speaks without being called on, cuts their peers off, or speaks out of turn, the instructor should address it. Usually, taking the student aside and explaining to them the importance of giving everyone an opportunity to speak is an effective way to moderate their participation.

Inappropriate Comments or Behaviour: There are many ways in which student comments may be inappropriate but, in general, inappropriate comments involve content that is disrespectful of one or more individuals at an individual or group level. Such comments are not appropriate and have no place in the classroom. When inappropriate comments are made, it is important that instructors deal with them head on to prevent the situation from escalating. Often a reminder to the class of what constitutes respectful and appropriate behaviour can be effective. However, if the student continues to make inappropriate comments, the instructor needs to speak with the student after class about their comments, and to determine whether or not other factors may be playing a role in their behaviour. If the inappropriate comments continue, it may be necessary for the instructor to involve the Student Code of Conduct office, to help address the situation.

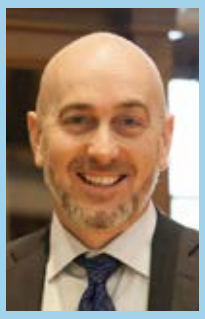
Student Conflicts: How an instructor should deal with any given disagreement or conflict in the classroom depends on the situation. In the case of a minor dispute between students (e.g., disagreement over differing opinions), a reminder of expectations regarding a respectful classroom environment, or a statement that "academic debate is wonderful but personal insults are inappropriate", should suffice. In the case of a more serious conflict (e.g., name calling, threats, aggressive gestures), it may be necessary to ask one of the individuals involved in the conflict to leave the room so that both individuals can cool down and the conflict does not escalate. If instructors find themselves in a situation where they believe the conflict could turn violent, they should call campus security immediately (phone extension 24281). Instructors need to protect their own safety, as well as the safety of their students.

Going off Topic: It is certainly not uncommon for a discussion to start on one topic but for it to then shift to a second topic. This topic change may not be a problem when the instructor wants students to explore a topic more broadly, but if they want their students to explore one particular question in depth, it can be a challenging issue. To get the discussion back on track, saying something as simple as "let's return to the original question posed" should be effective.

Examples

Examples can be used to clarify course content in two primary ways. First, the instructor may provide students with an example to demonstrate a course concept. Second, the instructor may ask students to come up with an example of their own to demonstrate that they understand the concept. When using examples as an educational tool, instructors should ask for and use examples that are meaningful to students (i.e., that relate directly to students' lives or interests) or that have real world relevance. Research shows that personal and real world relevance is one of the best motivators for student learning (Kember, Ho, & Hong, 2010). Relevance may be established by showing how theory may be applied, referring to local cases, relating content to everyday applications, or finding applications in recent news stories (Kember, Ho, & Hong, 2008).

James Gillett,
Associate Professor, Sociology.
Health, Aging and Society,
on the use of images and narratives in teaching



"Use images and tell interesting stories about them. There is something about the image and the story that grabs large classes.

[Also,] if you can, incorporate consistent learning rituals in your class that help convey information and the class will find it reassuring.
For instance, when I teach Intro Health Studies, I begin each class with a curious story from the history of medicine and an image that is tied to the key point I want students to learn that day."

Active Learning

Active learning has been variously defined. Most definitions include two key components: doing and reflecting (Mills, 2012). A commonly cited definition is "involving students in doing things and thinking about what they are doing" (Bonwell & Eison, 1991, p. 2). Research has shown that active learning works. It has been linked to greater academic achievement, more favourable attitudes towards learning, increased persistence through courses/programs, and increased learning compared to the amount learned from the traditional lecture method.

"I work to encourage students to contribute to the learning process as active learners, even when the classes are too large for in-depth discussion.
To accomplish this, I have incorporated a personal response system (i>clicker), which tallies students' answers to questions that are displayed right then in class. I have found this tool useful to encourage students to ask more questions and discuss issues. For example, I have used the i>clicker to play the "Who Wants To Be a Millionaire" game. I ask for nine volunteers who make up three teams. Each team answers a series of questions until they get a wrong answer. If a team is unsure of an answer, they can use a lifeline, asking the class to use their i>clickers to answer the question.

At the end of this exercise, the class discusses why the answers to some questions were common knowledge whereas others were much more difficult to assess.

Another exercise I use to engage students involves placing students in groups of five, and giving each group a topic for which they will argue either the pro or con position over the course of the semester. Often, these debates incite passion, esecially when I open up the discussion to the entire class. I've had students tell me that this exercise has helped them to reassess some of their own presumptions and biases."

Melanie Heath,
Associate Professor, Sociology, on using personal response systems

Active Learning Strategies

There are many effective strategies to engage students in active learning in large classes. Some of these strategies include:

Role Playing: At the outset, the instructor provides sufficient information to explain the context and setting of the role-playing scene, as well as what the roles will be (each role should be given a clear task to accomplish, such as articulating a position or advocating for a particular course of action). He/she then divides the class into smaller sugroups. Within each subgroup, students are asked to divvy up the roles. The students then act out their scenario with each role-player trying to achieve their agenda. Many of these agendas may come into conflict because of politics, ideology, tactics, etc. After the scenario is complete, the instructor carries out a debriefing session to identify what students have learned and to place the information within the context of the course.

Student Volunteers: Some concepts can be dramatized for the whole class by the instructor inviting one or more students to illustrate them. This activity is similar to role playing, but here the instructor actively guides students. For example, Hannah Holmes, an Economics instructor, invites two students to pretend they are firms and asks them to move around the classroom to illustrate how firms decide where they will locate to maximize their profits. Hannah tends to have no trouble finding student volunteers, and the rest of the class seem to enjoy suggesting actions for the volunteers to perform.

Thinking-Aloud Pair Problem Solving (TAPPS): For more complex information, such as case studies, it can be helpful for students to work in pairs. In the TAPPS model, one student in each pair takes the role of explainer and the other student in the pair takes the role of questioner. The explainer describes the situation and how they might approach solving it. The questioner mainly listens, but may also ask questions or make a few suggestions. When the instructor gives the say so, they switch. The instructor then opens the floor to allow students to share what they have learned and to summarize main points.

Three-Step Interview: In the three-step interview, the instructor provides a series of questions based on the course material (usually with no right or wrong answer). Students then break into pairs. One student interviews the other student (Step 1), and then they switch (Step 2). When complete, two pairs of students join together, and each individual in the group takes turns explaining their partner's ideas to the other pair (Step 3). Finally, the instructor brings the discussion back to the large class format and asks that volunteers share what they have learned.

Guided Analysis: For the guided analysis strategy, the instructor selects a short document for review and then distributes a copy of a similar document to students divided into sub- groups (one document per sub-group). The instructor performs an analysis of their document in front of the class, providing a clear demonstration of the procedure to be used. Students are then given a period of time to ana-

lyze their own document using the process that they have just learned. At the end, each student or group is asked to present their analysis and they receive feedback from the instructor and their peers.

Jigsaw Classroom: In a jigsaw classroom, the class is broken down into groups of 5-6 – this is their jigsaw group. Each member of the group is assigned a letter or number – this is their concept group. Students then join their concept group. Each concept group is assigned a different topic or question and given time to become an "expert" in that area. Once that is accomplished, students return to their jigsaw group. Each member of the jigsaw group is then tasked with teaching their topic to the other members of their group.

Send/Pass-A-Problem: This activity begins with a list of problems or issues (they can be instructor- or student-generated). Students are divided into groups and given an envelope corresponding to one of the problems/issues. The group then brainstorms solutions or responses, writes them on a piece of paper, and places them in the envelope. Next, this envelope is given to another group. The members of the second group generate their own ideas or solutions (without looking at the first group's responses). The envelope is then passed to a third team who reviews answers from the first two groups, provides their own responses, and synthesizes the ideas from all three teams for the rest of the class.

Brainstorming: In a brainstorm, students generate ideas that are then recorded by the instructor. This information can be refined (either in the beginning, or after the fact) through the uses of categories. Once all ideas have been recorded, the instructor asks students to volunteer to comment on the accuracy and value of the material that they have provided. This evaluation should only take place once all ideas have been recorded.

Ungraded Quizzes: Ungraded quizzes can be used as a pretest to determine level of knowledge; a quick, non-threatening check of student absorption of class material; or as a gauge of instructor effectiveness. Questions for the quiz can be written on the board, overhead, PowerPoint slides, or in a handout. Students should be provided with an appropriate amount of time to complete the quiz anonymously. Instructors can then collect the quizzes and report the pattern of results to students at the beginning of the next class. Alternatively, students can trade their quiz with a peer for grading and receive more immediate feedback.

Video or Audio Fill In The Blank: Students watch or listen to a portion of a clip and then use their existing knowledge to extrapolate what follows. Following that, students form pairs and share their answers with their partner. The instructor then plays the remainder of the clip and leads a class discussion on the differences between students' answers and the actual result.

Focused Listing: In this activity, the instructor assigns a focus topic and students are tasked with generating a list of ideas that are related to it. When they have completed their lists, the instructor then asks students to volunteer to share their ideas with the rest of the class.

Learning Logs: Learning logs allow students to track their goals, thoughts, and progress related to learning. To use this strategy instructors ask students to bring a notebook with them to each class. In this notebook, students are asked to record the key points that they have learned, as well as any questions that they have that they would like to have answered (some instructors also ask students to research those questions and to record their answers in their notebook). Learning logs allow students to reflect on what they have learned, which helps them to track their progress/learning and remember course material.

Gallery Walk: This strategy has small groups of students move around the classroom to different stations where they can write or draw their ideas on a piece of chart paper. The instructor assigns a different topic to each paper. Each group should be given a few minutes to visit each paper, adding to the collection of ideas that have already been generated by previous groups visiting. Once every group has visited each station, groups are asked to review the ideas recorded on the chart paper at their final station and to synthesize the ideas for the rest of the class.

Case Studies: Case studies present students with the opportunity to apply theories (and other course material) to real world/sample situations. This process can help to demonstrate the applicability of course concepts beyond the classroom. In general, good case studies present students with scenarios that they can easily relate to their own lives or experiences. Cases should present enough realistic information in the scenario that students can come up with a solution to the problem at hand. In a large class, an instructor may provide a case study and go through it with the entire class (with several students volunteering to share their thoughts/answers) or ask that students break up into smaller groups to work on it (which the instructor then follows up with a debriefing session).

Karen McGarry, Assistant Teaching Professor, Anthropology, on using case studies

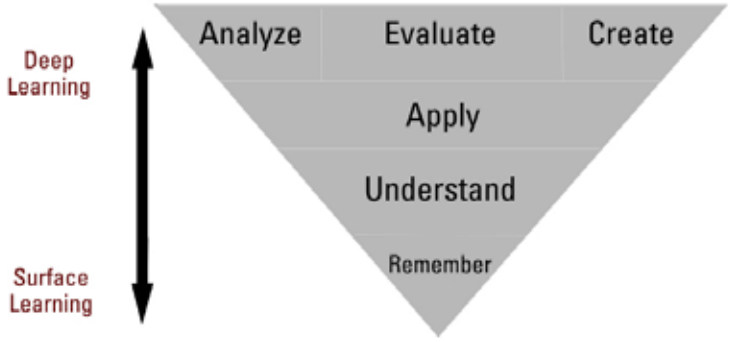
"I teach large lecture-based courses without tutorials. To motivate students and to instil a sense of instructor/student engagement, I often provide examples of critical or controversial case studies in lecture. Students are then encouraged to engage in a directed online discussion or debate. This permits practical applications of course material, but moreover, it makes students feel that they have a voice or a sense of agency in a context where opportunities for in-class discussions are limited."

Considerations When Selecting an Active Learning Strategy

There are some key things to consider when selecting an active learning strategy in large classes. They include:

- Intended learning outcomes
- Type of desired learning
- Class format
- Accessibility

Intended Learning Outcomes: Every activity in a course (and every assessment) should be aligned with one or more of the course's intended learning outcomes.
Type of Learning Desired: The active learning strategy that an instructor selects will likely have an impact on the type of learning that occurs.
Below is a diagram of a revised version of Benjamin Bloom's taxonomy of the cognitive domain.



Put simply, in this revised version of the taxonomy by Anderson and colleagues (2001), they suggest that remembering is the least complex cognitive task, understanding and applying are increasingly complex cognitive tasks, and analyzing, evaluating, and creating are the most complex cognitive tasks. If an instructor chooses an active learning strategy that engages students in a more complex cognitive task (e.g., evaluating), deep learning – true knowing or mastery of the material – is likely to result. If, however, the instructor chooses an active learning strategy that engages students in a less complex cognitive task (e.g., remembering), surface learning – simply regurgitating or remembering – is likely to result. So, when selecting a strategy it is important that an instructor considers their goal. If their goal is to have students remember or understand material (a common goal when introducing a new topic/concept) then they should select a strategy that will foster that. If their goal is to have students work with a topic/concept that they have introduced previously, then they should select a strategy that will encourage them to go beyond memorization and comprehension and have them apply the knowledge to novel situations, critically analyze or evaluate it, or create new ideas or processes that build upon their current understanding.

Class Format: Is the course a face-to-face, blended (mixture of face-to-face and online classes), or online course? The answer to this question is important when selecting active learning strategies because some strategies work better in one format than another. For example, send/pass-a-problem may work well in a face-to-face format, but would be very difficult to execute in a fully online format.
Accessibility: As noted at the beginning of this subsection, regardless of which active learning strategy an instructor chooses, one thing they should always consider is accessibility. Be sure to select active learning strategies for a course that will enable all of the students to participate.

Critical Reflection

How Reflection Differs from Critical Reflection

Reflection and critical reflection have been variously defined and can be understood to mean different things to different people depending on their perspective and the context (Lucas, 2012). Generally speaking:

- Most definitions of reflection describe individuals reviewing and thinking about their past activities and the world.
- Most definitions of critical reflection take reflection one step further with respect to cognitive complexity and describe individuals thinking critically to create or clarify the meaning of past experience in terms of self (self in relation to the self, and self in relation to the world) – identifying their assumptions, assessing them, and modifying/clarifying them.

Drawing from the literature, (Smith (2011) identified four main forms/domains of critical reflection:

- Personal (thoughts and actions): Aims to address concerns about the influence of subjectivity by recognizing and bringing to light personal thoughts and actions.
- Interpersonal (interactions with others): Aims to address concerns about the influence of professionalism and group interactions by recognizing and bringing to light disciplinary traditions and ways of working.
- Contextual (concepts, theory, and methods): Aims to address concerns about the influence of established concepts and ideas by recognizing and bringing to light their limitations.
- Critical (political, ethical, and social contexts): Aims to address concerns about the influence of powerful groups by recognizing and bringing to light various interests and agendas.

Why Critical Reflection is Valuable

Many educators (e.g., Boud, Cohen, & Walker, 1993; Lay & McGuire, 2010; Moon, 2006; Wolf, 2010) have noted that critical reflection is an important ability for students to develop because it contributes to deeper understanding and learning. "Teaching critical reflection supports the well established argument that learning should include both the assimilation of subject knowledge and the confidence to question and adapt that knowledge" (Smith, 2011, p. 217).

Some of the benefits of critical reflection that have been noted in the literature (e.g., Irwin, 2013; University of Technology Sydney, 2013; Wolf, n.d.) include:

- Making students active participants in the learning process.
- Increasing students' awareness of connections between the course material, the self, and the world.
- Increasing transfer of learning from inside the classroom to outside the classroom.
- Providing students with the opportunity to frame and reframe information in relation to their existing knowledge.
- Helping students identify, evaluate, and clarify their opinions.
- Permitting students to strengthen their metacognitive skills (i.e., thinking that enables them to understand, analyze, and control their cognitive processes).
- Helping students learn more about how they learn.
- If the reflection is ongoing, enabling students to document their learning over time and to identify changes in their thinking, better equipping them to help others.
- If the reflections are submitted to the instructor, giving the instructor insight into students' thinking and development – insight that is not normally otherwise obtained. It also fosters open dialogue between instructor and student and enables the instructor to respond to and encourage students' growth.

Critical Reflection Techniques

Some techniques an instructor may use to engage students in critical reflection (adapted from Morrow, 2010, as cited in Smith, 2011) include the following:

- Reflective writing
- Learning journals/diaries
- Learning portfolios
- Critical incident questionnaires
- Two minute papers
- Reflective summaries
- Tabulations or lists of reflective themes
- Feedback/self-evaluation forms
- Diagrammatic representations
- Concept maps
- Conceptual diagrams
- Creative representations
- Pictures/images

How to Facilitate Reflection

Some tips for facilitating reflection, adapted from the Assessment Resource Centre at HKU (2009) and Colorado State University's Office for Service-Learning and Volunteer Programs(2013), include:

- Share with students the benefits of reflection (i.e., why they are being asked to reflect)
- Provide students with a clear definition for reflection so as to prevent confusion about what they will be expected to do when asked to reflect
- Clearly communicate (in writing) students' responsibilities for reflection, including if/how their reflection will be evaluated
- Share with students course policies concerning student privacy and confidentiality of information
- Engage students in regular reflection activities that are both guided and purposeful
- Strive to engage each student in both individual and group reflection activities
- Encourage each student to assess the knowledge, values, and skills they bring to each reflection activity
- Focus reflection activities on topics of relevance to your students
- Leave some cognitive and topical issues open for ongoing discussion to encourage reflection between reflective activities and/or between classes

As reflective work can bring about emotional responses from students, instructors should be thoughtful about the quality and quantity of reflective activities that they ask their students to engage in, and should be prepared to navigate such responses when they occur.

Given the assessment/grade-driven nature of students, some have argued that it may be necessary to assess reflection in order to encourage it. Some pros and cons of assessing reflection are:

Pros	Cons
- The reflection is directed (i.e., clear instructions are given to students), making students aware of the process being undertaken - As the reflection is assessed it makes students aware of their reflective ability - Students who are doing poorly can, as a result of reflection, learn from their mistakes and may gain additional marks for their realizations	- Unless clear pointers are provided, the reflection may become formulaic (i.e., students may not genuinely reflect each time) - Due to their personal nature, some instructors may experience discomfort when assigning grades to students' reflections - Due to their subjective nature, some instructors may have difficulty objectively and consistently assigning grades to students' reflections

Critical Reflection Assessment

Appraising a student's knowledge, understanding, abilities, and/or skills related to reflection can be challenging. "Assessment of critical reflection generally is complicated because of defining what it is and whether it has been understood or applied" (Smith, 2011, p. 218). There is also an underlying tension related to attempting to set standards for critical reflection (Smith, 2011). "To impose a unitary view of near-objectivity on the assessment process, is to require the learner to conform to the reality of the assessor" (Leach, Neutze, & Zepke, 2001, p. 296). To remedy this, an instructor could include reflective course activities and assessments that provide students with a framework from which they may reflect (on their autonomy, self-direction, transformation, and critical reflection, as well as existing knowledge/power formations), while also acknowledging that students vary in their interest, confidence, and ability to make judgments about their own work (Smith, 2011). If achievements in reflection are to be both monitored and assessed, there must be a basis for comparison and indicators of quality (Smith, 2011). Based on educational theory and research on reflection, (Smith, 2011) has identified the following as key indicators with which critical reflection may be observed and monitored:

Domain 1: Self-critical (reflecting on your own thoughts and actions)	Domain 2: Interpersonal (reflecting on interactions with others)
Key considerations could include: • Why are you interested in a particular issue or topic? • What questions seem important to you? • What informs your views? • What aspects of your background are you drawing on?	Key considerations could include: • What disciplinary-based ideas and frameworks inform your interpretations? • What aspects of your disciplinary background lead you to dwell on certain aspects of an issue or problem and not others? • Whose perspectives might be missing or • What personal experience do you have? overlooked?
Domain 3: Contextual (reflecting on concepts, theories, or methods used)	**Domain 4: Critical (reflecting on political, ethical, and social context)**
Key considerations could include: • What insights were generated, or do you hope to generate, by using a particular approach? • On what basis do/will these insights contribute to knowledge or practice? • What different insights may be/have been made if a different approach or perspective is/had been taken?	Key considerations could include: • What is the political context in this situation? What are the contentious issues? • Is there a political agenda at stake? What might the outcomes be? • Who might gain because of what has been done or not done? Who might lose out?

For more information about how to engage in critical reflection, please see works by Brookfield (e.g., 1995, 2006).

Gary Dumbrill, Associate Professor, Social Work, and Learning Portfolio Fellow 2014/2015, on relating to students

"Let the class relate to you as a person. Present in class in a way that students can relate to you as an instructor and not just relate to the topic. In other words, take up the role of professor not just as someone who presents knowledge, but as someone who is a conduit to that knowledge. In the classroom, draw on and reveal those parts of yourself that will enable students to relate to the topic through you as a person; let them glimpse the ways you make sense of, unravel, and relate to the topic you are teaching. In this process, reflect on what inspires your personal passion for the topic and find ways to communicate this to students from a broad range of backgrounds in a manner that sparks and stimulates a similar passion in them. If students can relate to the passion you have for your topic, the teaching will almost (but not entirely) take care of itself.

Relate to the class as a whole.

Classes are like people in that they each have their own personality. In your course, relate and dialogue with the unique personality of your class as a whole. Dialogue can be verbal (such as asking questions), but be cautious because in a large class not everyone will respond to questions and dialogue can easily be reduced to talk between the professor and the same small group of students every week. Try to pay attention to and draw people in on the margins of the class, but in doing so respect a student's right to participate by listening rather than answering questions. Remember that dialogue does not have to be verbal because body language and other signals will inform you of the mood and tensions in the class and these subtleties are a part of dialogue, too. You may respond to these either verbally or directly, or non-verbally with an acknowledging glance that conveys hearing an unspoken concern or perhaps inappropriate comment, and then perhaps by changing or rephrasing the way you address a topic in an indirect and subtle but recognizable response to what you sense occurring. In this manner, when teaching a large class you look beyond a sea of faces to recognise, engage, and interact with the "person" (or persons) that class becomes. When combined with the previous tip of letting the class relate to you as a person, education becomes an exciting journey of discovery that instructors and students travel together."

Course Evaluation

Why Course Evaluation is Important

Course evaluations can provide valuable feedback about how students feel about a course and the instructor's approach to teaching it. Such evaluations provide students with the opportunity to anonymously inform the instructor about what they like or don't like about each – an opportunity they tend to appreciate as it shows them that the instructor cares. The feedback provided, whether positive or critical, can help instructors improve their courses and polish their teaching methods.

How to Conduct A Course Evaluation

Apart from the formal departmental course evaluations conducted at the end of the term, many instructors elicit student feedback during the term by conducting their own mid-semester course evaluations. There are many ways in which such evaluations may be conducted. Two common approaches are described below.

- *Online Surveys*: It is easy to conduct online surveys using most learning management systems (including Avenue to Learn). A few well-chosen multiple choice or short answer questions (e.g., 'What should I stop doing?', What should I start doing?', and 'What should I continue doing?') can garner valuable information. For best results, an instructor should keep the questions to a minimum; three to five questions should yield ample feedback. To encourage students to give honest feedback and to alleviate the concern that the feedback they provide could impact their grade in the course, instructors should collect the feedback in such a way that students' anonymity is retained. They should also be sure to have a

deadline for submissions, and plan for some class time where they can discuss the results with the students. The questions should be focused on only aspects of the course that the instructor can address during the term. And the instructor should be prepared to make changes, if it is possible and appropriate to do so, in response to student feedback, or to explain to the class why these changes are not appropriate or possible.

- *Ad Hoc, In-Class Questions*: Eliciting student feedback can be as easy as asking students to respond to a question during lecture (by raising their hands, using their i>clickers, etc.). For example, an instructor could ask if students like the i>clicker questions and whether they would like more, fewer, or the same number of questions per class that the instructor has been using up to that time.

If you are an instructor and would like help with creating an online course feedback survey for your course, please contact an Educational Developer at the Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching at: http://mi.mcmaster.ca/site/.
For information about how to use course evaluations to engage students, see works by Lewis (e.g., 2001a, 2001b).

"I view teaching and learning as bound together, intertwined, and inseparable in each instant of pedagogical practice. Most fundamentally, teaching bespeaks relationships. I am forever learning from my students and the new perspectives they bring to our subject matters. … At the second year undergraduate level, I have had success encouraging critical engagement with the material covered in my Global Politics course by presenting it as "a course about stories," with the objective being to show students the contingency of many of the accounts of international politics we study as well as whose accounts they are. While I have found this approach to be quite conducive to critical thinking, I am also encouraged by what seems to be a better reception to and mastery of different International Relations theories (presented as simply more 'stories' which students are by then able to associate with particular political outlooks and outcomes) than I have otherwise experienced with second year undergraduates. Overall, the results of course evaluations are one measure of success; knowing that former students have gone on to achieve their goals in graduate schools, professional programmes, or a chosen career path is another. But my most immediate sense of the degree of my effectiveness as a teacher is seeing familiar faces on the first day of a new class. Students have a great deal at stake when they choose to invest their time, energies, and life chances in a course, and I am most gratified whenever some who have studied with me before think me worthy of further attention."

Marshall Beier, Associate Professor, Political Science, on assessing teaching success

STUDENT ENGAGEMENT IN LARGE CLASSES REFERENCES

Discussion

Andrews, J. D. W. (1980). The verbal structure of teacher questions: Its impact on class discussion. POD Quarterly: The Journal of the Professional and Organizational Development Network in Higher Education, 1(1), 129-163

Brookfield, S., & Preskill, S. (1999). Discussion as a way of teaching: Tools and techniques for university teachers. Buckingham, England: Society for Research into Higher Education and Open University Press.

McKeachie, W. J., & Svinicki, M. (2006). McKeachie's teaching tips: Strategies, research, and theory for college and university teachers (12th ed.). Boston, MA: Houghton Mifflin Company.

Prince, M. (2004). Does active learning work? A review of the research. Journal of Engineering Education, 93, 223-231.

Examples

Kember, D., Ho, A., & Hong, C. (2008). The importance of establishing relevance in motivating student learning. Active Learning in Higher Education, 9, 249-263.

Kember, D., Ho, A., & Hong, C. (2010). Characterising a teaching and learning environment capable of motivating student learning. Learning Environment Research, 13, 43-57.

Active Learning

Anderson, L. W., Krathwohl, D. R. , Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J., & Wittrock, M. C. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives. New York, NY: Longman.

Bonwell, C. C., & Eison, J. A. (1991). Active learning: Creating excitement in the classroom. ERIC Digest. ASHE-ERIC Higher Education Reports, The George Washington University.

Hake, R. R. (1998). Interactive-engagement vs. Traditional methods: A six thousand-student survey of mechanics test data for introductory physics courses. American Journal of Physics, 66(1), 64-74

Millis, B. J. (2012). Active learning strategies in face-to-face courses. Idea Papers, 53, 1-8. Retrieved from http://files.eric.ed.gov/fulltext/ED565290.pdf

Springer, L., Stanne, M. E., & Donovan, S. S. (1999). Effects of small-group learning on undergraduates in science, mathematics, engineering, and technology: A meta-analysis. Review of Educational Research, 69, 21-51.

Reflection

Assessment Resource Centre at HKU (2009). Types of assessment methods. Retrieved from http://ar.cetl.hku.hk/am_rj.htm

Boud, D., Cohen, R., & Walker, D. (1993). Using experience for learning. Buckingham, England: Society for Research into Higher Education and Open University Press.

Brookfield, S. (1995). Becoming a critically reflective teacher. San Francisco, CA: Jossey-Bass.

Brookfield, S. (2006). The skillful teacher: On technique, trust, and responsiveness in the classroom (2nd ed.). San Francisco, CA: Jossey-Bass.

Colorado State University's Office for Service-Learning and Volunteer Programs (2013). Facilitating reflection. Retrieved from http://writing.colostate.edu/guides/teaching/ service_learning/reffac.cfm

Irvin, L. L. (2013). The importance of reflection. Retrieved from http://www.cconlinejournal.org/irvin/Importance.htm

Lay, K., & McGuire, L. (2010). Building a lens for critical reflection and reflexivity in social work education. Social Work Education, 19(5), 539-550.

Leach, L., Neutze, G., & Zepke, N. (2001). Assessment and empowerment: Some critical questions. Assessment & Evaluation in Higher Education, 26(4), 293-305.

Lucas, P. (2012). Critical reflection. What do we really mean? Retrieved from http://acen.edu.au/2012conference/wp-content/uploads/2012/11/92_Critical-reflection.pdf

Moon, J. (2006). Learning journals: A handbook for reflective practice and professional development (2nd ed.). New York, NY: Routledge.

Philip, L. (2006). Encouraging reflective practice amongst students: A direct assessment approach. Planet, 17, 37-39.

Smith, E. (2011). Teaching critical reflection. Teaching in Higher Education, 16, 211-223.

University of Technology Sydney (2013). Critical reflection on teaching. Retrieved from: http://www.iml.uts.edu.au/scholarship-research/reflection.html

Wolf, K. (2010). Bridging the distance: The use of blogs as reflective learning tools for placement students. Higher Education Research & Development, 29(5), 589-602.

Wolf, P. (n.d.). Transformational learning and critical reflection. Retrieved from http://www. wlu.ca/documents/20396/Critical_reflection_-_handout.pdf

Course Evaluation

Lewis, C. (2001a). Making sense of student written comments. New Directions for Teaching and Learning, 87, 25-32.

Lewis, C. (2001b). Using midsemester student feedback and responding to it. New Directions for Teaching and Learning, 87, 33-44.

ENCOURAGING WRITING IN LARGE CLASSES

Contributors: David Young, Tracy Prowse, Catherine Swanson

Writing is one of the best ways to encourage higher-order critical thinking in university students (Hobson & Schafermeyer, 1994). The ability to speak and write effectively is a skill that employers look for in job candidates. The Faculty of Social Sciences is committed to promoting and encouraging writing practice by all of its students, but there are a number of challenges to be addressed to ensure effectiveness and efficiency of the writing assignments in university courses. Many of these challenges are magnified in large classes. None of these challenges are insurmountable, but we need to be aware of these potential roadblocks and develop informed strategies to overcome them.

Challenges Involving Writing Assignments

Skills Gap: Writing Experience and Practice

Writing assignments are designed to build on existing student competencies and increase their skill levels through given tasks. One of the first barriers to student success in writing assignments is the prior knowledge and experience students bring to class. When we see student papers that do not address the focus of the assignment, contain incomplete sentences, include faulty arguments, or consist of various other writing errors, instructors are prompted to review the gap between instructor expectations and student perceptions of what is expected in a writing assignment (Lea & Street, 1998). Students may not have a strong foundation in grammar, punctuation, and other technical aspects of academic writing, which is different than narrative or composition writing that students may have experienced (Lavelle, 2003). Students bring a wide range

of reading and writing experiences that require us to view a cohort as heterogeneous. For example, whether English is the first or second language, students will have varying abilities with academic English writing. Marshall (2010) cautions against viewing 'being ESL' as a deficit – rather than an asset – and also challenges us to think about what prior knowledge and experiences of students we are including or excluding in designing writing assignments. Moreover, a substantial number of students may have not yet learned how to properly cite or paraphrase others' work. There is clearly a need to teach students good principles and best practices in writing, and to help align instructor expectations with students' ideas about writing.

Skills Gap: Analysis and Argument Development

The second challenge in writing improvement concerns students' abilities to conduct thoughtful and effective analyses. Good writing and good analysis are intricately related; students need to learn to effectively articulate points that collectively make up a logical and persuasive argument. Without training or guidance, many students tend to write descriptive papers, rather than analytical papers, that merely summarize some academic material rather than providing an argument or evaluation. Interviews with university students have shown that they have trouble understanding when they have successfully constructed an argument in an essay, and they are also aware of the need to meet different writing requirements in different courses (Lea & Street, 1998). This leads to student confusion regarding academic writing since there is no one universal 'correct' way to write. Instructors may need to be more explicit in the detailed steps of analysis involved in writing, and criteria for judging good arguments, as relevant to their specific courses and expectations.

Resource Gap: Feedback Quality and Grading Efficiency

The third challenge associated with writing assignments involves contending with class size. As our courses get larger, it becomes more challenging to implement writing assignments. It is difficult to correct writing errors, check for plagiarism, and comment on the quality of the content when there are dozens or perhaps hundreds of papers to grade. We may find it necessary to be selective in what we focus on when examining student work. For instance, with so many papers waiting to be marked, we might choose to say little or nothing about problematic writing and to concentrate our few comments on the lack of analysis. Instructors face this situation in medium-sized classes where they have no Teaching Assistants (TAs). In large classes, the task of providing commentary on writing or analysis often falls on the TAs rather than the instructor, and that brings us to the next challenge.

Resource Gap: Ensuring Consistency in the Marking of Written Assignments

Even if an instructor has a sufficient number of TAs, there can be problems in terms of helping undergraduate students with their writing. For instance, some graduate students may have difficulties with their own writing, and new TAs may lack experience with grading written assignments. Furthermore, even among knowledgeable and seasoned TAs, there may be inconsistence in the grading of writing assignments.

Addressing Challenges Involving Writing Assignments

The aim of this section is to help instructors to deal with some of the challenges described above. The section builds on a roundtable discussion among instructors from various departments in the Faculty of Social Sciences. This discussion revealed a number of ideas and approaches with regard to writing assignments in large classes. The first issue to be examined is how to get students to understand the value of writing assignments and the importance of writing or analytical skills, especially with regard to developing these skills in large classes with limited TA support. Then, the advantages and disadvantages of different types of writing assignments will be considered. After that, various issues associated with giving or grading written work will be examined. The section will conclude by outlining approaches connected to assisting students with preparation of their written assignments.

Motivating Quality Writing by Students

If students understand the importance of good writing and analysis, they may be more inclined to see the value of writing assignments and perhaps work harder on their assignments.

Points Students Should Understand about Writing Assignments

Students need to understand the skills to be gained from writing assignments. They need to realize that written work can help them to develop technical writing skills and analytical skills.

Writing assignments can help them to learn what is involved with: structuring paragraphs and sentences; using proper grammar, punctuation, and spelling; constructing persuasive arguments or evaluations; and using evidentiary material well through proper quoting, paraphrasing, and referencing techniques. This is a general description of some skills that could be enhanced through writing assignments, but the specific skills to be developed depend on the types of assignments that are given and what instructors want to emphasize.

Students also need to understand the importance of the skills that instructors want them to acquire from doing writing assignments. In relation to this, various points can be made to students. For instance, it might be useful to let students know that employers and graduate schools value writing and analytical skills.

Strategies to Help Students See the Value of Writing Assignments

There are a number of strategies that can be employed to help students grasp the benefits of doing writing assignments. These strategies are perhaps particularly important in large classes, as in those classes the points must reach a large number of students.

Discuss Writing Assignments in Class: The best strategy is to discuss writing assignments in class. Instructors may find it useful to spend a few minutes during class explaining to students why they are being asked to do writing assignments. This provides an opportunity to highlight the particular skills to be gained, the importance of the skills, and other reasons that the instructor may have for assigning written work. It might even be useful for the instructor to mention surveys of employers (or similar types of evidence) that indicate the importance that is attached to writing and analytical skills.

Describe the Value of Writing Assignments: An additional supplementary strategy is to describe the value of writing assignments in instructions or announcements. This strategy must be supplementary because students are more likely to pay attention to the points if they hear their instructors emphasizing the points in class. Nevertheless, it can be useful to make points about the value of writing assignments in the instructions for the assignments or to post brief reminders of the points in announcements on Avenue to Learn. This serves to remind students who attend class, and to reach students who may have missed class.

Emphasize Process Over Product: Another important thing that instructors should strive to do is to emphasize the process over the product with respect to writing assignments. This may be a harder goal to achieve, since many faculty and students are used to focusing on the end product (i.e., the written assignment). There is, however, growing evidence that suggests that in order to encourage critical thinking and writing skills, students need to create, reflect, and revise (Pare & Joordens, 2008).ng assignments. This may be a harder goal to achieve, since many faculty and students are used to focusing on the end product (i.e., the written assignment). There is, however, growing evidence that suggests that in order to encourage critical thinking and writing skills, students need to create, reflect, and revise (Pare & Joordens, 2008).

Joseph LaRose, Instructor, Religious Studies, on the benefits of writing assignments

"One strategy that I have always found useful is to assign brief responses to the assigned readings through the term. I usually ask for a paragraph on assigned readings. These are submitted electronically on Avenue to Learn 5 - 7 times a term before the material is covered in lecture.

This offers benefits for both me, and the students. I find that it gets most of the students reading more of the assigned material. Since the responses are due before the material is discussed in lecture, I find the students are more engaged during class and have more questions.

I also think it is important that I read and mark them myself. Reading these responses give me an opportunity to understand how students are responding to class material."

Designing for Effectiveness and Efficiency: Types of Writing Assignments

Different types of writing assignments may be given in large classes, and they do not need to add an overwhelming burden to the instructor or the TAs. These types of assignments come with their own set of advantages and disadvantages, and impact how well the assignments help students develop writing and analytical skills. Essay assignments and other writing assignments are discussed below.

Essay Assignments

Essay assignments are the traditional approach to student writing in university courses. However, it is important to consider whether this type of assignment is the best approach, especially in a large class setting.

Some advantages of essay assignments are that they help students:

- grasp the academic research process.
- learn how to tackle research questions.
- learn how to make use of journal articles or other academic materials.
- develop their formal analysis skills (constructing arguments).
- develop their understanding of the formal writing process.

However, essay assignments also have disadvantages, including the following:

- Essays, it can be argued, are an antiquated approach to writing in university courses. Unless students are interested in pursuing graduate studies and becoming academics, they may see essays as irrelevant. To some degree, this disadvantage can be overcome by helping students see that the skills learned through writing essays are transferable to other types of writing, and therefore still highly relevant to their future career. Even if students choose not to become professors (where the expectation is that they will publish academic papers), it is still valuable that they have a sound understanding of the formal writing process as they may still have to conduct research and write reports as part of their job – it is a common expectation for various white-collar occupations.
- Essay assignments are often completed at the last minute and may consequently involve problematic analysis or writing. This disadvantage may be mediated to some extent by breaking essay assignments into smaller components that students must submit over time (e.g., a research proposal, a literature review, etc.).
- Essays can be time consuming to grade, particularly if instructors ask students to submit a series of smaller components of the essay over the course of the term.

Other Writing Assignments

Non-traditional writing assignments have been used by a number of instructors. These assignments may entail active learning. For example, students could be presented with a question or problem that stems from lecture material and asked to work in small groups to reflect, in writing, on the issues discussed. Instructors could then ask that those written responses be handed in so they can check for student understanding. Specific versions of this general technique (Write-Pair-Share, a variation of Think-Pair-Share) exist in the educational literature (Syman, 1981). Other forms of in-class writing may include the one-minute (or five-minute) paper, group written responses in which they have to come to a consensus on a statement, or a question box in which students must place a question or concern about a topic covered in class (Hobson & Schafermeyer, 1994).

Alternatively, students could be asked to prepare one or two larger writing projects that involve an element of creativity. This might include scrapbooks that contain news stories and commentary on how news items reflect issues or concepts addressed in lecture or the course readings. McMaster's Learning Portfolio is a way for students to organize, reflect on, and share these types of learning experiences (for more information, go to http://mi.mcmaster.ca/site/learning-portfolio.
Another creative project could involve developing PowerPoint presentations that provide answers to "thinking" questions and having students submit the work for credit, instead of a presentation format.
There are several benefits to using non-traditional writing assignments, compared to essay assignments.

- Some students find non-traditional assignments more enjoyable and more relevant. For instance, students may

expect to have to prepare a PowerPoint presentation as part of their future career.

- Non-traditional writing assignments often provide practice in other forms of writing and analysis that go beyond what is required for essays - students must "think on their feet" when doing active learning writing activities in class.
- Non-traditional writing assignments may be less time-consuming to grade (which makes them especially useful in classes with no TA support or an inadequate number of TAs).

Melanie Heath, Associate Professor, Sociology, on using in-class writing assignments

"One of my goals in teaching is to motivate students to sharpen their analytic and writings skills. I have accomplished this by introducing in-class exercises and group work that empower students to learn not only from me, but also from eachother. For example, to encourage students to learn from and with each other, I assign points for peer review. This facilitates thinking critically about the strengths and weaknesses of another student's written work. By means of in-class presentations and debates, I also seek to make the materials engaging and thought-provoking. While these types of exercises are more successful in smaller classes of up to thirty students, I have worked to translate these tools successfully to the larger lecture halls of my large Perspectives on Social Inequality class."

Effective Administration of Written Assignments

Preparing Instructions for Assignments

When assigning written work in the classroom, it is important to provide clear expectations (e.g., the length requirement) for the assignment, and to outline the criteria that will be used for assessment. This is particularly important for Level I and II students, but clear expectations, instructions/guidelines, and assessment criteria should be provided for all assignments, at all levels. It takes time to develop a clear, well-planned writing assignment, and as the instructor, it is important to consider the balance between providing enough detail for students and not making the instructions/guidelines too long (a perception of some instructors is that students tend not to read guidelines or instructions if they are too long).

Discussing Instructions for Assignments in Class

One way to deal with "information overload" for students when presenting writing assignments is to split the instructions into a series of sub-topics and cover one sub-topic in each class (as opposed to covering all aspects of the instructions in one session, or worse yet, not discussing the assignment in class at all). These instruction sessions do not have to take up entire lectures, but instead can be divided into short 10-minute pieces at the end of each lecture. For example, sub-topics could include: how to use online library resources, tips on doing research, or the expected citation style. Another sub-topic could be a discussion on academic dishonesty (e.g., the instructor could show students a paragraph with a series of fictitious student paraphrased sentences and ask them to decide whether they are examples of plagiarism).

Providing Training and Support for TAs Grading Assignments

If instructors have TAs for their classes, part of the TAs' duties may be marking written assignments. It is important that both the instructor and the TAs have a clear understanding of how such written assignments should be assessed. The TAs should be provided with a marking rubric or clearly defined criteria for grading. The rubric can be similar to the one the instructor provides students, or can be a more detailed version. It is also useful for the instructor to provide a standard evaluation sheet to the TAs to help with consistency and uniformity in grading, as well as handouts on common mistakes made in written assignments. An important aspect that is often overlooked is that TAs should also be trained on how to provide constructive feedback on written work. Feedback should be specific, provide clear suggestions for improvement, and be balanced, noting both the strengths and weaknesses of the work (Hobson, 1998).

Todd Alway, Assistant Professor, Department of Political Science, on the role of Teaching Assistants in large classes

"As far as tips go - since much of the hands-on learning in large classes takes place in tutorials, my best tip relates to the way in which Teaching Assistants (TAs) are integrated into the course. My own approach has been to spend as much time interacting with the TAs as I do with my students. I provide my TAs with a course manual that outlines the pedagogy underpinning the course, their role in the learning process, and a week-by-week breakdown of the exercises that they will run in their tutorial groups.

In addition I meet with my TAs every week so that we can share any observations, obstacles, and best practices. The weekly meetings help to ensure that students receive a consistently excellent experience, regardless of the tutorial to which they have been assigned."

Supporting Writing Skills Development Outside a Single Class

Students struggles with writing at all program levels, but there are a number of strategies and resources that instructors can use to support students.

- Instructors can incorporate student guidebooks on writing into the curriculum of their courses (e.g., Northey, Tepperman, & Albanese, 2012).

- Instructors can invite representatives from support units (like the Student Success Centre) to come to their classes to discuss the writing resources available to students, or arrange tutorials in the library on how to use library and online resources.

- Instructors can consult with staff at the Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching on strategies that may be used to integrate writing into course work.

The key is for instructors to be resourceful and strategic in helping their students develop skills related to writing, ideally early on in their academic careers.

David Young, Teaching Professor, Sociology, on writing workshops

"During the 2012-2013 academic year, several departments in the Faculty of Social Sciences participated in Undergraduate Writing Workshops. Working in collaboration with Associate Dean (Academic) Lori Campbell and Assistant Dean Lynn Giordano, David Young from Sociology took the lead role in facilitating the workshops.

The Undergraduate Writing Workshops were designed to help undergraduate students improve their writing skills, and they were run with the assistance of graduate student volunteer mentors from various departments in the Social Sciences. The aims were: to improve the basic writing skills of undergraduate students (in terms of grammar, punctuation, etc.); to help undergraduate students connect with the department in which they were doing their major; and to give graduate students an opportunity to acquire valuable experience (for inclusion on their CV) by mentoring undergraduate students in relation to their writing. Each participating department organized a few workshops in the fall and winter terms that were staffed by some of the department's graduate students in order to provide writing assistance to undergraduates in the second, third, or fourth year of the department's program. The scheduled workshops were promoted by department instructors during their classes. Undergraduate students were able to bring in-progress papers to the workshops for help with their writing. Undergraduate students found the writing support very valuable, and graduate student mentors found the experience rewarding."

MCMASTER WRITING SUPPORT RESOURCES

Student Success Centre

The Student Success Centre provides a wide range of services to help students with their writing, as well as other aspects of their academic life. Supports available include:

- One-to-one instruction (by appointment) with a professional Learning Strategist.
- Writing skills workshops (offered throughout each term).
- Online support consisting of links to resources, websites, and video tutorials. McMaster students have free access to Grammarly, an online tool that assists with editing and revising written work.
- Writing Skills Assistants (usually upper year undergraduate or graduate students) who work with students to help them develop and articulate ideas, organize essays, and assist with referencing and citation (they do not proofread or edit work). http://studentsuccess.mcmaster.ca/students/academic-skills/writing-support-services.html. In order to access these services students need to make an appointment or sign up for a workshop using OSCARplus. Contact the Student Success Centre at: (http://studentsuccess.mcmaster.ca/students.html).

Library Support

Academic skills support (including writing support) is available in the Mills Learning Commons, Room L213/E in the Mills Memorial Library. The library also provides links on its website to instructional videos regarding how to access and use their resources: http://library.mcmaster.ca/instructional-videos. Further, the library offers one-on-one consultations with subject specialists, including for the Social Sciences, on the first floor of Mills: http://library.mcmaster.ca/research-help.

McMaster Writing Support for English as a Second Language (ESL) Students

In large classrooms, informal mentoring of ESL students can take place through study groups or study partners. Instructors can encourage non-ESL students to participate as a study partner by offering to write a letter about their partner's volunteer activities at the end of the term, although specific details about expectations should be presented clearly, and also in writing.

The Office of International Affairs at McMaster offers summer ESL programs that cover, in part, instruction on grammar, reading, and writing: http://oia.mcmaster.ca/summer-esl.

The Student Success Centre also offers services for ESL students that are not specifically focused on writing. These services, described below, may help ESL students to improve their spoken English.

- The Speakeasy Program partners English-speaking students with ESL students to meet on a regular basis.
- The Conversation Circle provides an informal, small group setting where students discuss chosen topics.

More information on ESL supports available through the Student Success Centre can be found at: http://studentsuccess.mcmaster.ca/students/academic-skills/english-language-support.html.

ENCOURAGING WRITING IN LARGE CLASSESS REFERENCES

Hobson, E. H., & Schafermeyer, K. W. (1994). Writing and critical thinking: Writing-to-learn in large classes. American Journal of Pharmaceutical Education, 58, 423-427.

Hobson, E. H. (1998). Designing and grading written assignments. New Directions for Teaching and Learning, 74, 51-57.

Krause, K. L. (2010). The university essay writing experience: A pathway for academic integration during transition. Higher Education Research and Development, 20(2), 147-168.

Lavelle, E. (2003). The quality of university writing: A preliminary analysis of undergraduate portfolios. Quality in Higher Education, 9(1), 87-93.

Lea, M. R., & Street, B. V. (1998). Student writing in higher education: An academic literacies approach. Studies in Higher Education, 23(2), 157-172.

Marshall, S. (2009). Re-becoming ESL: Multilingual university students and a deficit identity. Language and Education, 24(1), 41-56.

Northey M., Tepperman, L., & Albanese, P. (2012). Making sense: A student's guide to research and writing – Social Sciences. Oxford University Press.

Pare, D. E., & Joordens, S. (2008). Peering into large lectures: Examin- ing peer and expert marking agreement using peerScholar, an online peer assessment tool. Journal of Computer Assisted Learning, 24(6), 526-540.

EFFECTIVE USE OF TECHNOLOGY IN LARGE CLASSES

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Using technology for technology's sake is not guaranteed to enhance student learning. There must be a strong pedagogical foundation and clear intent behind the use of the technology for it to yield substantial benefits. For example, instructors may use technological tools to mediate some of the challenges associated with teaching large classes (e.g., student engagement), and to meet educational requirements mandated by higher authorities. In Ontario, the Accessibility for Ontarians with Disabilities Act (AODA) mandates that universities and other public institutions make their services accessible to all persons, including those with disabilities. Technological tools may be used to help facilitate this access.
Instructors in the Faculty of Social Sciences have identified a number of technological tools that they have used in their large classes to meet course intended learning outcomes.

This section will provide a brief introduction to six such tools:

- Avenue to Learn
- Learning Portfolios
- Podcasts and Vodcasts
- i>clickers
- Lertap
- peerScholar

Avenue to Learn

Avenue to Learn (A2L) is the web-based learning management system used by most instructors at McMaster to provide students with online access to course resources. It is a flexible system with a series of site resources and assessment tools. Once students are registered for a course, they are automatically added to the course list on the system. Avenue to Learn has a wide range of features that instructors may choose from. It enables instructors to:

- Use a course calendar to inform students of dates and activities.
- Share content (e.g., PDFs of lecture slides).
- Post discussion questions for students to engage with the material.
- Administer quizzes.
- Collect students' work/assessments via Dropbox.
- Use a rubric to evaluate students' work/assessments.
- Share grades (confidentially).
- Provide links to external web pages.
- Track student engagement with online course features/materials by tracking the number of times that different features/materials are accessed, and by whom.

Hannah Holmes, Assistant Teaching Professor, Economics, on using technology in the classroom

"I lecture to over 1200 first year Microeconomics students each term in McMaster's largest lecture theatre. To engage students, like most large-class instructors, I use a mix of classroom technologies that include PowerPoint slides, podcasts and i>clicker personal response units.

My Avenue to Learn site not only includes course content, but also information for students who: miss tests and deadlines, need accommodations with Student Accessibility Services, or want answers to frequently asked questions about administrative matters."

Setting Up a Course on Avenue to Learn

Instructors may request an Avenue to Learn "course shell" for their course by clicking on the Course Shell Request link on the Avenue to Learn home page: http://avenue.mcmaster.ca. Once the request has been processed, instructors can create the course's Avenue to Learn page. Workshops on the various features in Avenue to Learn are offered at the beginning of each term (a link to the registration page is also available on the Avenue to Learn home page). Once a course shell has been created, course components can be re-used in subsequent terms and a portion, or all, of the course materials can be transferred to a new course shell. Student grades can also easily be downloaded from Avenue to Learn to a spreadsheet program (e.g., Excel). Avenue to Learn has extensive eSupport designed for both students and instructors: http://avenue.mcmaster.ca/help/. This support is hugely beneficial when first using the system. D2L (the company that created Avenue to Learn) also provides instructor support: http://avenue.mcmaster.ca/help/instructor.

Tips on Using Avenue to Learn

Here are some helpful tips that can assist instructors who wish to use Avenue to Learn for their courses.

- When uploading marks received from the OMR report, delete the student numbers from your CSV spreadsheet for error-free results.
- If you use a computerized test generator for multiple choice online tests, save the file as the latest Blackboard version available in your software package. Make sure you have Question Collections and Quizzes set as active tools for the course before you upload your file.
- You can track student usage of your site: Under Content>More Actions>Reports>Content tab, you can see how many students have visited a particular topic. Click on the number in the Users Visited column to see who accessed the selected topic. If you click the Users tab, you can select a student to view which topics they have visited.
- If you use multiple versions of multiple choice tests and upload marks from the CSV file from the OMR report: If the student has neglected to bubble the version number on their scan sheet, the mark will appear as a 0 on Avenue to Learn. If the student neglected to bubble their student ID number, their grade shows up as an error during the uploading process and the student will see a – as their mark.
- You can change the colours of the banners on your Avenue to Learn course home page to differentiate each of your courses. This helps make your site stand out to students and you can tell if you're accessing the right site just by the

colour code. Go to the Edit Course menu, select Course Offering Information and scroll down the page to select your colours.

- If you do not use every tool provided as default by Avenue to Learn, declutter your site by removing them from your (and your students') view. Go to the Edit Course menu, under the Administration topic select Tools, and then check only the ones you want. Do keep the Import/Export/Copy Components tool active; you will need it if you want to upload files from other Avenue to Learn courses you have.

Learning Portfolios

The Learning Portfolio is a powerful user-centered application for storing, organizing, reflecting on, and sharing items that represent the individual learner. Within the Learning Portfolio, users may include documents, graphics, audio files, presentations, and other digital files that reflect a student's own personal learning journey. Students can then easily share their achievements, knowledge, and reflections with faculty, advisors, employers, or peers. When students are finished with their studies at McMaster, they can export their Learning Portfolio in HTML format and take their Learning Portfolio with them or host those files online as a website.

The Learning Portfolio is a very flexible tool that can be used many different ways. One of the more common ways to use the Learning Portfolio is to have students document their progress and thinking about a course throughout the term(s). Typically, assignments like this are only required to submit at the end of term, so that the instructor can assess the student's progress. It has been suggested that if you want to implement the Learning Portfolio in this way, you should also have points where the students submit a presentation to ensure that work and reflection do not occur only at the end of the course.

The Learning Portfolio can be used in large classrooms to facilitate peer review of items - students create a portfolio of items or a single asset, which is then shared with the class, or smaller groups.

This sharing enables the recipient to comment on the progress of the portfolio or individual item. An instructor can guide the feedback process by creating rubrics to help students provide constructive feedback to one another on the development of the portfolio. The portfolio can be assessed formally by instructors or by Teaching Assistants to continue the cycle of feedback to students so they can improve their work.

Podcasts and Vodcasts

A podcast is a digital audio recording, and a vodcast is a digital audio and video recording. Podcasts and vodcasts can be created for lectures, and both can be compressed and made accessible through the internet (Vajoczki et al., 2010). Instructors in the Faculty of Social Sciences have reported that podcasts are useful because students can learn at their own pace, and can rewind the lectures to review important/challenging material. Podcasts thus permit students to have more control over the learning process. Research on the efficacy of podcasts at McMaster has reported that students find podcasts helpful – they are used most often when preparing for exams, and the use of podcasts has resulted in higher grades (Vajoczki et al., 2010). Podcasts are also particularly useful for students who require accommodations through Student Accessibility Services.

Making a Podcast and Vodcast at McMaster

At McMaster, lecture capture (podcasting/vodcasting) is done through the use of ECHO360, a lecture capture system available in some classrooms on campus, including: ABB-102, ITB-137, TSH-120, TSH-B128, MDCL-1305, MDCL-1105, MDCL-1309, MUMC-1A1, MML-L107, JHE-376, CNH-104, CNH-B107, BSB-147, and HSC-1A1. Check the McMaster University campus map for the location of these classrooms. Instructors can contact Otto Geiss (geisso@mcmaster.ca) with lecture dates and times. Lectures are captured automatically by the system.

If an instructor is teaching in a classroom that does not have this technology in place, they can contact Classroom Audio Visual services (https://library.mcmaster.ca/cavs/updates/echo360-lecture-capture) for other lecture recording options; they do not necessarily have to teach in one of the above classrooms in order to use lecture capture technology.

A representative from Classroom Audio Visual services can attend the instructor's lectures and record them. In order to use lecture capture, an instructor must sign a Lecture Recording Release form (a PDF of this form is available on the above website). Lecture captures are available for viewing for one year after recording.

For more information about ECHO360, contact Otto Geiss (geisso@mcmaster.ca)

Benefits and Challenges Associated with Using Podcasts

There are many benefits of using podcasts. They include:

- Instructors report receiving fewer emails and office inquiries about class material when they podcast in their classes.
- A podcast can be downloaded to computers or other mobile devices.
- Students can listen to a podcast as many times as they want, whenever they want, during the semester.
- Podcasts improve understanding and retention of course material for both deep and surface learners (Vajoczki et al., 2011).
- Students express increased satisfaction with the course when podcasts are employed.
- Podcasts can be very useful for students who are visually challenged.

Along with the benefits associated with podcasts, instructors should also be cognizant of the challenges related to using podcast technology. Some of these challenges include:

- An instructor must make sure that podcasting technology is available in their classroom.
- Instructors must be aware of issues associated with privacy, copyright, and intellectual property.
- Instructors should be aware of the possible impact that podcasting lectures may have on class attendance.
- In rooms that do not have automatic lecture capture, instructors must rely on their Classroom Audio Visual services assistant to attend their class and be prompt – some set-up time is required.

Useful Link on Podcasts and Vodcasts

A Teaching with Technology White Paper: Podcasting (Carnegie Mellon University Eberly Centre): https://www.cmu.edu/teaching/technology/whitepapers/Podcasting_Jun07.pdf.

Geraldine Voros, Associate Teaching Professor, Health, Aging & Society, on using podcasts

"User Friendly Technology

The podcast process is simple and intuitive. Constant improvements and upgrades in the podcasting system continue to allow for greater efficiency and accessibility. There is low physical effort in accessing podcasts, as all are uploaded to the portal on Avenue To Learn within hours of the lecture. The student simply clicks on the desired lecture and it streams seamlessly. There is no need to download a special program to access a podcast. The pause, rewind, fast-forward, and stop buttons permit students to regulate their intake of, and processing of, the material. The podcast can be accessed anywhere there is internet, be that on campus, the public library, Tim Horton's, home, etc. If a student is in a public place, a pair of earphones from the dollar store can let them privately engage in their academic work without disturbing anybody nearby. Should a student not have a computer available to them, they may use alternate technologies to access a podcast; an iPad or iPhone may be employed to download the lecture material, as well. With podcasts, the special needs student is now capable of becoming a fully integrated member of the community of learners, independent and fully adapted to the educational experience in multiple venues by multiple means.

Students in General

All students have access to the podcast and, the podcast is needed and used for a variety of reasons: due to a family emergency back home, due to needing to tend to an ill child, due to needing to work, due to varsity sports, etc. Moreover, students with transition challenges, students who speak English as a second language, overachievers… all can access the podcast to meet their learning needs. Students can catch up on a missed lecture, clarify a point in the lecture notes, review a class concept, or study for an exam; the podcast is there for various individual needs. The podcast enables all, in many different ways. Given the podcast, students soon become able to manoeuvre the system and to answer many of the questions that might arise. Prior to tests and exams, there are fewer emails from students saying that there is something in their notes that they do not understand and that thus needs clarification. The time saved on clarification provides the instructor with an opportunity to redirect their efforts to other professional duties (e.g., writing letters of reference for students).

Challenges Presented By Podcasts

If there is one challenge that podcasts pose, it is that of attendance in class. Podcasts are not intended to enable a kind of long distance learning. However, in some instances this is what students begin to utilize them for. The number of students attending class may drop when podcasts are introduced, leaving the instructor with a decision to make: Should the podcasts continue to be posted? In order to encourage class attendance, the instructor may introduce new in-class activities, such as the cue card exercise. With that exercise, cue cards are handed out at the end of class minutes before class dismissal and students are asked to respond to a question based on the lecture. With their names and ID numbers clearly written on the card, along with their answer, they have the opportunity to earn bonus points. No one is punished for not attending class, but there is a definite bonus to attending. This may encourage those who may be using the podcasts less responsibly to reconsider their absence. This has worked in various classes where the initial problem arose and seems, for the moment, to be a positive problem solving strategy. Overall, this one challenge seems to be eclipsed by all the benefits and learning opportunities that podcasts offer.

Given the challenges of transition from high school to university, podcasts enable special needs students, in particular, a seamless transition in terms of a viable and strong safety net for accommodating and acclimatizing to their new academic environment. For those students who are simply daunted by the new educational forum, it is an asset that can reduce anxiety and build confidence. The personal affordability, versatility, mobility, and accessibility of the podcast system lends a new learning opportunity that can only benefit students."

i>clickers (and Other Personal Response Systems)

Personal response units (of which the i>clicker is the most popular) do more than simply engage students by having them actively participate in lecture. They can also be used by instructors to quickly gauge whether most students are "getting" a particular course concept. McMaster's Campus Store sells i>clickers, and many students have purchased one for use in their courses.

i>clicker is a brand of classroom response system. It is the brand most commonly used for classroom response at McMaster. i>clickers are easy-to-use hand-held devices that have buttons that students press to respond to questions posed by the instructor. For example, the instructor could pose a multiple choice question and five possible answers, each answer corresponding to a different button on the i>clicker (labeled A-E), and ask that students use their clickers to respond.
The i>clicker transmits students' responses to an i>clicker base receiver via a radio frequency signal, where they are then recorded on a computer or USB flash memory stick. The instructor can then immediately display a graphical distribution of the results using a data projector. i>clickers can be used for in-class quizzes that may or may not be worth a percentage of the final grade (to use i>clickers for grading purposes the instructor must ask students to register their i>clickers on the i>clicker website after they purchase them).

The Cost of i>clickers

i>clickers are sold in the McMaster Campus Store for approximately $42.00 (new) and $32.00 (used). If an instructor plans to use i>clickers in their class, they will need to let the Campus Store know how many students will be enrolled in their class. Students can use the same i>clicker for more than one class. There are approximately 22 lecture halls with i>clicker receiver bases. Students need to enter the specific frequency for the classroom in order to use the technology. This information is posted on the podium in the classrooms. Contact Otto Geiss (geisso@mcmaster.ca) for more information on classrooms with i>clicker base units at McMaster.

Benefits and Challenges Associated with Using i>clickers

Some of the potential benefits of using i>clickers include:
- Increased participation in class.
- More active learning via participation.
- Improved student engagement.
- Increased attendance.

Some of the potential challenges associated with using i>clickers are:
- The technology sometimes does not work seamlessly.
- Designing good multiple choice questions takes time and practice.
- Instructors need to designate sufficient class time to the use of the technology.
- Not all students will have an i>clicker.

It is not recommended that instructors use i>clickers to take attendance/monitor students. Rather, it is recommended that i>clickers be used to encourage class participation and student engagement.

How i>clickers Can Be Used to Ask Questions

As Derek Bruff (Director, Vanderbilt Centre for Teaching: http://cft.vanderbilt.edu/teaching- guides/technology/clickers/ has noted, i>clickers may be used to ask the following types of questions:
- Recall questions examine important concepts or facts and rarely generate discussion. They pertain to low order thinking.
- Conceptual understanding questions help instructors identify student misconceptions about material presented in class.
- Application questions require students to apply knowledge to particular situations.
- Critical thinking questions require students to analyze relationships between multiple concepts. Choose 'the best answer' questions encourage classroom discussion.
- Student perspective questions may not have one correct answer, but are useful to help the instructor and students under-

stand the diversity of perspectives in the classroom. They can be a good point of discussion.

- Confidence level questions ask students to indicate their confidence in their ability to correctly answer a question or perform a task.
- Monitoring questions can be used by the instructor to monitor students' progress in the course.

The Vanderbilt Centre for Teaching website also provides types of activities that can be developed using i>clickers. Further, it provides specific examples of their implementation (videos).

Tips on Using i>clickers

Below are some helpful tips that can assist instructors who are considering using i>clickers in their courses.

- Not all students will have an i>clicker. Instructors should be sure to ask for a show of hands from those students before they reveal the voting results.
- Instructors can display how the voting is progressing. This may interest students, but the instructor risks a bandwagon effect if certain answers are popular.
- It is relatively common for one or more students to select a choice for which there is not an option – the "Who chose E - there is no E?". Usually, this is done to get a laugh from the audience, but it is a god idea to repeat instructions when this occurs in case the underlying issue is a lack of clarity regarding the instructions.
- i>clickers are sometimes used to take attendance as students can register their device and the software easily records the responder's identity. In general, students overwhelmingly dislike the use of i>clickers to take attendance. They feel it forces them to come to lecture when they may not be able. Some students will give a friend their device so that the friend can register their attendance while they are absent.

Useful Links on i>clickers

Welcome to Press Western (Western University Press Western): http://presswestern.uwo.ca/.
Teaching With Clickers (Carnegie Mellon University Eberly Center): http://www.cmu.edu/teaching/technology/clickers/index.html.

Laboratory of Educational Research and Test Analysis Package (LERTAP)

LERTAP is short for Laboratory of Educational Research and Test Analysis Package. It is software to accompany multiple choice test reports. Among other things, LERTAP can help evaluate how well tests overall, and individual questions in particular, have captured students' grasp of specific intended learning outcomes. The software can help pinpoint questions that were too difficult, too easy, or "poorly" presented based on the instructor's criteria/objectives. Instructors can see exactly which individuals had difficulties with each question. In addition, LERTAP can identify potential cases of academic misconduct by identifying students who had an excessive number of the same wrong answers (statistically unlikely unless there was some collusion among those students).

How To Use LERTAP

The software has to be run, and reports prepared, by an experienced operator. For example, the Department of Economics has a technician who performs the analysis on all multiple choice test results. Interpretation of the results is not difficult. LERTAP analyses, and summaries are reported, in an Excel workbook. For a short PowerPoint presentation that summarizes how to interpret LERTAP results, contact Hannah Holmes at hholmes@mcmaster.ca.

Benefits and Challenges Associated with Using LERTAP

Some of the benefits of using LERTAP include:

- Instructors can quickly identify questions that can be modified and improved upon for future use.
- Instructors can easily see what material students found difficult by their responses to each question.
- Instructors can send each student a report indicating their answers for each question by simply cutting and pasting from the LERTAP spreadsheet.

Challenges associated with using LERTAP include:

- The software results are more accurate for large numbers of students.
- Instructors need to learn how to interpret the results.
- The use of the software to proceed with charges of academic misconduct may not always be appropriate.

At the very least, instructors will need a seating chart to identify where flagged students were sitting to determine if cheating was possible.

Useful Links on LERTAP

A 30-day free trial of LERTAP (downloadable) is available. For longer use, a license is required. Instructors who are interested in learning how to run LERTAP should contact Economics IT Analyst Irena Thomas. Interested parties may come with their own ExamRawData.csv file and in about 2 hours, they should be able to run it unassisted. Contact thonasi@mcmaster.ca for an appointment.

peerScholar

There are a number of peer assessment tools available to use in the classroom, some of which have been reviewed by Luxton-Reilly (2009). There are clear benefits to learning when peer assessment is used, but this can become a logistical challenge when dealing with large numbers of students. peerScholar is one example of an online peer assessment tool that has the flexibility to be applied to a variety of assignments to meet specific intended learning outcomes, and it can be used in classes of any size. peerScholar was developed by researchers in the Department of Psychology at the University of Toronto to improve the writing and critical thinking skills of students in large classes (Joordens et al., 2009; Paré & Joordens, 2008). Another example of this type of online writing assessment tool is Enhanced Insite.

Tracy Prowse, Associate Professor, Anthropology, on using peerScholar for writing assignments

"In my introductory Anthropology class (ANTHRO 1AA3 – Sex, Food, and Death), I used peerScholar with 450 students to complete two written assignments on topics related to the course. For each assignment, students wrote first drafts, gave and received peer feedback on those drafts, revised and resubmitted their essays, and wrote a brief reflection on the process. The Teaching Assistants in the class evaluated the first draft, the quality of the peer feedback the students provided to 3 of their classmates, and the final draft of each paper. Each stage of the assignment contributed to the final grade, to emphasize the process of writing (instead of the product) and encourage students to reflect on their own work.

How to Use peerScholar for An Assignment

There are three phases to each assignment:
1. Creation: Students log into the system and create the assignment according to the instructions and grading rubric provided.

2. Evaluation: Once the first phase closes, students are randomly assigned submissions completed by their peers and they provide feedback according to the criteria you provide (you can control the number of submissions they review, and whether or not this process is anonymous). This is considered a key stage in the process, because students can compare their own work to their peers' and reflect on what makes a good assignment.

3. Reflection and Revision: Students immediately receive their peers' feedback and you can give them the option of revising and resubmitting their work. They can also be required to submit a brief reflection on how they incorporate the feedback in their revisions.

peerScholar is available through Pearson publishing and can be bundled with a required textbook. Alternatively, an access card can be purchased (but see the note below about no-cost- options). Students have access to the peerScholar website for one year from the date of registration, and it can be used for multiple classes (i.e., they do not have to purchase a card for each class). The professor provides the students with the access code for the specific class.

Some of the advantages of using peerScholar:

- Students get immediate feedback from their peers.
- It helps to encourage higher levels of learning – analysis, synthesis, and evaluation.
- TAs/instructors can provide feedback and grades directly in the peerScholar program – there are no piles of papers to collect, mark, and redistribute (or that sit uncollected in piles on the office floor).

Some of the challenges associated with using peerScholar:

- Students can provide feedback to their peers, but they cannot grade assignments because this goes against the collective agreement with Teaching Assistants. One way to deal with this is to get students to use a star rating system (e.g., 1 to 5 stars) when providing feedback.
- There is a steep learning curve to preparing and administering assignments on peerScholar, and it is very important to give students proper guidance throughout the entire process. For example, students need to be given clear guidelines and examples of what constitutes effective feedback.
- It is important to emphasize the process of using peer assessment, not the final product, so each phase of the assignment should be worth part of the total marks."

"I personally don't teach or pretend to be an expert in teaching, and so the following is written from the perspective of a technical consultant who interacts and intersects with teachers and their teaching.

Observations and Practicalities of the Classroom Environment

Part of what makes teaching large classrooms of students difficult isn't simply the volume of people in any given lecture, but the facility in which the instructor is sometimes forced to teach. McMaster's classroom infrastructure has changed radically over time, bringing new technologies, configurations, and features to help faculty engage students and facilitate the instruction of course content. These changes often come with challenges, usually stemming from any of the following: lack of technological standardization, specialized disciplinary considerations and pedagogical approaches, institutional scheduling problems, technical capacity, ministry pressures, and lack of sustainable funding for infrastructure renewal. All of these, when combined, create a wild mix of predicaments for the instructor to tackle in a variety of diverse teaching spaces on or off campus.

Planning Ahead

As part of prep for your course, check the classroom directory frequently (http://library.mcmaster.ca/cavs/class-dir/all) before term starts to see how your classroom space is described. Visit the teaching environment ahead of time, if possible with someone else who knows the podium and lecture computer systems on campus. Plan to test everything including the lights, projector, audio system controls, microphones, sight- lines, desktop/ podium computer (if applicable), chalk boards, white boards, blinds or projection screen, and exit locations. Report to Facility Services or Classroom Audio Visual Services (CAVS) if anything is in disorder or not working. Being able to predict classroom idiosyncrasies ahead of the first day of class is a good option as you may have precious little time to make the transition from a previous class to your own. When you are juggling 6 different in-person student questions before the class starts, waiting restlessly for the previous class to file out, stressing out about the previous instructor's equipment still connected to the projector, and scrambling to load your presentation file on the podium system, the last thing you need is for the space or facility to present you with a new challenge you have never experienced before. This preparatory step will limit what can go wrong or how long it might take for you to identify a potential problem in the classroom so that you have time to adapt and minimize the impact of the issue. Teaching happens live, and that means something, anything, can and will happen. The best thing to do in this case is to follow that tried and tested motto: 'be prepared'.

Nick Marquis, Learning Technologies Consultant, Faculty of Social Sciences, on the Learning Technologies Consultant role

Learning Technologies Support in the Social Sciences

As Learning Technologies Consultant (LTC) for the Faculty of Social Sciences, a core part of my role involves assisting instructors with the appropriate integration of technology into teaching. This support may come in a variety of forms, whether it be at a planning or consultation phase, or taking a more active role in the implementation of a larger pedagogical intervention using technology. In the past, the LTC has been involved in assisting instructors with the use of certain audience response devices ('clickers') in some large lecture classes. Aside from technical design support, the LTC is also capable of making recommendations (based on literature) as to what pedagogical strategy might be applied to make clicker implementation more meaningful and to affect positive teaching and learning outcomes.

Other initiatives have involved recommendations on the design, application, and assessment of classroom lecture capture infrastructure, informed by best practices and sound pedagogical evidence. After this particular intervention, the outcomes of the research supported institutional

investment in the integration of university-wide lecture capture infrastructure service. The system (in the case of our design) captures the lecture video signal (computer display) and the lecture hall system audio automatically based on a server-side pre-set schedule for each academic term. Once the lecture takes place, the service then pushes the recorded package containing the audio/video supplement to our learning management system (i.e., Avenue to Learn) for each class subscribed to the lecture capture service. The design of this particular lecture capture system was critical in minimizing the disruption to the instructor, allowing the instructor to focus solely on the student classroom interaction. Before the system was selected and relevant financial support for broad implementation was secured, extensive local pedagogical research on the impact of lecture capture on student outcomes was performed to ensure positive student and instructor outcomes. The LTC was involved at all stages, working one-to-one with instructors to make the technical design choices that ultimately led to positive change and institutional commitment to a sustainable service supporting classroom innovation.

As part of the initial design, selection, and support of such projects, the LTC position is deeply committed to a culture of evidence based practice, fostered through consultation, support, design, application and intervention connected to teaching technologies. From the day-to-day support needs of faculty with Avenue to Learn, podcasting, 'clickers', and several other technology enhanced learning interventions, the LTC is here to support the teaching and learning community in the Faculty of Social Sciences."

Profile: Bridget O'Shaughnessy, Associate Teaching Professor, Economics on McMaster's first fully online Economics course

"Crime and criminals, alcohol, and insider trading. These are just some of the topics covered in the new 3-credit Economics course ECON 2Q03: Economics of Bad Behaviour. The course, taught by Associate Professor

Bridget O'Shaughnessy, is the first fully online course to be offered in the Department of Economics.

O'Shaughnessy developed the course in collaboration with a team at the Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching as part of the Economics Online Learning Initiative Pilot Project. The course is delivered via five modules designed to introduce students to economic concepts and models.

Issues such as individual criminal behaviour, corporate bad behaviour, and individual risky behaviour are examined. More specifically, students learn how economists study markets for illegal drugs and the sex trade; sweat shops and pollution; as well as smoking and gambling. Each module features a variety of narrated

presentations, instructor videos, expert interviews, and interactive activities. In addition, the team has gathered informal student perspectives on some of these issues,

captured in their own version of 'man-on-the-street' interviews. Course assessments include small group online discussions; papers; a group project; end of module quizzes and reflections; and an on-campus final exam."

EFFECTIVE USE OF TECHNOLOGY IN LARGE CLASSES REFERENCES

PodCasts and Vodcasts

Copley, J. (2007). Audio and video podcasts of lectures for campus-based students: Production and evaluation of student use. Innovations in Education and Teaching International, 44(4), 387-399.

Evans, C. (2008). The effectiveness of m-learning in the form of podcast revision lectures in higher education. Computers & Education, 50, 491-498.

Ferndandez, V., Simo, P., & Sallan, J. M. (2009). Podcasting: A new technological tool to facilitate good practice in higher education. Computers & Education, 53(2), 385-392.

Heilesen, S. B. (2010). What is the academic efficacy of podcasting? Computers & Education 55(3), 1063-1068.

Marquis, N., Vajoczki, S., & Watt, S. (2008). The role of one educational technology consultant (ETC) in an experimental technological innovation using pod/vod casting to enhance classroom-based instruction. In J. Luca & E. Weippl (Eds.), Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2008 (pp. 2977-2981). Chesapeake, VA: AACE.

Vajoczki, S., Watt, S., Marquis, N., & Holshausen, K. (2010). Podcasts: Are they an effective tool to enhance student learning? A Case Study. Journal of Educational Multimedia and Hypermedia, 19(3), 349-362.

Vajoczki, S., Watt, S., Marquis, N., Liao, R., & Vine, M. (2011). Students approach to learning and their use of lecture capture. Journal of Educational Multimedia and Hypermedia, 20(2), 195-214.

Watt, S., Vajoczki, S., Voros, G., Vine, M., Fenton, N., & Tarkowski, J. (2014). Lecture capture: An effective tool for universal instructional design? Canadian Journal of Higher Education, 44(2), 1-29.

Learning Portfolios

Light, T. P., Chen, H. L., & Ittelson, J. C. (2011). Documenting learning with ePortfolios: A guide for college instructors. Jossey-Bass.

Lorenzo, G., & Ittleson, J. (2005). An overview of e-portfolios. Educause Learning Initiative Paper. Retrieved from http://www.case.edu/artsci/cosi/cspl/documents/eportfolio-Educausedocument.pdf

McWhorter, R. R., Delello, J. A., Roberts, P. B., Raisor, C. M., & Fowler, D. A. (2013). A cross-case analysis of the use of web-based eportfolios in higher education. Journal of Information Technology Education: Innovations in Practice, 12, 253-286.

i>clickers

Bruff, D. (2009). Teaching with classroom response systems: Creating active learning environments. San Francisco: Jossey-Bass.

Nicol, D. J., & Boyle, J. T. (2003). Peer instruction versus class-wide discussion in large classes: A comparison of two interaction methods in the wired classroom. Studies in Higher Education, 28(4), 457-473.

Robertson, L. J. (2000). Twelve tips for using a computerized interactive audience response system. Medical Teacher, 22(3), 237-239.

Salemi, M. K. (2009). Clickenomics: Using a classroom response system to increase student engagement in a large-enrollment principles of economics course. The Journal of Economic Education, 40(4), 385-404.

Smith, M. K., Wood, W. B., Adams, W. K., Wieman, C., Knight, J. K., Guild, N., … Su, T. T. (2009). Why peer discussion improves student performance on in-class concept questions. Science, 323, 122-124.

peerScholar

Joordens, S., Paré, D., Collimore, L., & Cheng, T. (2012). Zen and the art of metacognition: Quality-based discrimination, peer assessment, and technology. Retrieved from http://www.academicmatters.ca/2012/05/zen-and-the-art-of-metacognition-quality-based- discrimination-peer-assessment-technology/

Joordens, S., Desa, S., & Paré, D. (2009). The pedagogical anatomy of peer assessment: Dissecting a peerScholar Assignment. The Journal of Systemics, Cybernetics and Informatics, 5(7), 1-6.

Luxton-Reilly, A. (2009). A systematic review of tools that support peer assessment. Computer Science Education, 19(4), 209-232.

Paré, D., & Joordens, S. (2008). Peering into large lectures: examining peer and expert mark agreement using peerScholar, an online peer-assessment tool. Journal of Computer Assisted Learning, 24(6), 526-540.