Planning for Effective Teaching with Technology

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Understanding the Building Blocks of Online Learning: Part 2

Through the writings and research of pre-eminent online learning expert, Dr. Tony Bates

For almost 50 years, Tony Bates has been a consistent, persistent and influential voice for the reform of teaching and learning in post-secondary education, notably through the effective use of emerging technologies. Author of 11 books and 350 research papers in the field of online learning and distance education, Tony Bates is also an advisor to over 40 organizations in 25 countries, and publisher of what is arguably the most influential blog on online learning (link is external) with over 20,000 visits a month. A Contact North | Contact Nord Research Associate, Dr. Bates has helped educators, academic administrators and policy makers grasp key concepts, trends and challenges in online learning This posting is one of a series that looks at Tony's perspectives and advice on key issues in online learning.

This series was researched and developed by Contact North | Contact Nord Research Associates, Dr. Jane Brindley and Dr. Ross Paul.

This consideration of Tony's work focuses on planning for teaching with technology in post-secondary education and the opportunities and challenges it poses for faculty members. His work offers practical guidance for the selection, implementation and understanding of the impact of various educational technologies.

According to Bates, online learning offers great potential to increase both quality and accessibility in post-secondary education. Teachers and learners can interact in shared virtual spaces no longer constrained by time and place; learners actively contribute to the knowledge base that becomes part of the online course content; electronic access to a wide range of quality learning resources allows for creative just-in-time structuring of knowledge presentation and opportunities for discovery within courses; and perse learner needs can be readily accommodated whether students are learning together or in their own time.

Bates is enthusiastic about this potential but realizes that harnessing technology for pedagogical purposes is complex. It requires careful planning to ensure that course objectives are effectively matched to learning activities and that technology tools are applied according to their specific capacities to support certain kinds of learning. From his research and online teaching experience, he provides sound guidance for faculty interested in teaching with technology through the following seven points.

1. **Ensure that the benefits of integrating technology justify the investment**

   The benefits of integrating technology with your teaching must justify the significant investment of your time and the costs. Bates recommends that you start with thinking strategically about the goal of technology use and how it fits with your program, departmental and institutional mission and mandate. Will it facilitate more active learning and development of your students' research and analytical skills? Will it address such challenges as large classes or workload management? Will it open up new markets or improve accessibility to underserved groups such as part-time learners? Will it enhance quality, address unmet needs or reduce costs? Whatever the rationale, the case should be well researched and documented to attract institutional support to render it sustainable.

   One approach is to include a discussion of technology use in any curriculum or course review. Departmental workshops might include teaching-focused strategic planning exercises (environmental scanning; analysis of goals, values and priorities), technology demonstrations and small group discussions to develop a vision for teaching in the future.

   Bates and Poole introduce a helpful framework to oversee technology integration and instructional design. The SECTIONS framework considers the following criteria for choosing and applying technologies for teaching:

   An example from the University of British Columbia of how to use this framework can be seen here (link is external).

   - **S**tudent needs
   - **E**ase of use and reliability,
   - **C**ost considerations,
   - Your approach to **T**eaching and learning,
   - The desired level of **I**nteraction for students,
   - The **O**rganizational support needed,
   - The **N**ovelty factor, and
   - The **S**peed with which the technology can be adopted or materials adapted.

2. **Develop a teaching plan**

   Bates recommends having a comprehensive teaching plan encompassing both curriculum (what) and delivery (how). Inclusion of a delivery plan ensures the integration of any technology use into regular college or university curriculum planning exercises.

   In addition to curriculum, a teaching plan addresses issues such as your preferred approach to teaching (e.g. problem-based or inquiry methods); time allocations for lectures, seminars, labs, clinics, practicums, field work and other activities; whether courses will be offered face-to-face, online, or in hybrid form (reduced class time with online interaction); scheduling for any face-to-face teaching; and who will teach.

3. **Plan for course design and development time**

   Good teaching always requires preparation but developing a fully online, hybrid or technology-enhanced classroom course takes extra time to develop before the course begins. Depending upon the subject, learning activities, choice of technologies, resources available and current teaching workloads, it may take up to a year to develop a new course.

   You may take a systems approach whereby the whole course is laid out and then each element designed and developed before teaching begins, or a more open-ended approach relying less on pre-prepared content and more on collaborative learning, class discussion, and building on the existing knowledge of learners. Bates' key message is that deciding on a teaching approach, laying out a plan, choosing appropriate technologies, developing and/or choosing learning resources, and ensuring the necessary support and infrastructure requires significant time and must be considered part of your teaching workload.

4. **Seek specialist assistance and support**

   Course quality starts with your knowledge of the learners and your subject matter expertise but benefits immensely from other specialist support. Cross-functional communication among faculty, instructional designers, media specialists, Web programmers, copyright officers, and learner support professionals to facilitate course development provides a dynamic environment for innovation in teaching but requires some consideration of the form of collaboration required.

   Bates describes different models of course development. The *Lone Ranger* approach is where a faculty member works independently to integrate a new technology, sometimes with some institutional financial support. A *Boutique Model* provides professional assistance on a project-by-project basis from an instructional support unit such as a teaching and learning centre. A *Collegial Materials Development* model involves academic colleagues working collaboratively on course development. A full *Project Management Model* involves a team of inpiduals contributing specialist skills working with a defined product, budget, timelines, and team leader to manage the process.

   Model choice depends upon the size of the project (module, learning activity, whole course or program), design complexity, and level of technology integration. Adding one element of technology to a face-to-face course may be handled quite easily with one-on-one assistance from a specialist whereas a project management approach to a fully online course with significant integration of various technologies probably yields the best quality and cost effectiveness. Once you have worked through developing a course with specialist help once or twice, you will be well positioned to work more independently.

5. **Manage the teaching workload**

   Bates stresses that technology use should reduce class time, not add to your overall teaching load. Using online technology for a face-to-face class to share the syllabus and links to learning materials such as journal articles should not take extra preparation time and may even save time and resources. However, if you want to go beyond this basic use of technology in a course, it is important to carefully consider the cost and additional teaching time needed.

   The investment required to plan, prepare and facilitate a course that incorporates pre-prepared modules, multimedia elements and/or online interaction such as class discussions or group projects will outweigh any significant gains in quality if the technology is not used to reduce face-to-face class time.

6. **Collaborate**

   Use of online technologies opens up many opportunities for collaboration in teaching, within and across institutions, even across continents. Further, as Bates points out, combining efforts pays off in productivity and quality of teaching. Shared open educational resources can also reduce developmental costs significantly.

   Courses or content common to a variety of programs can be identified and learning materials and resources developed and stored in readily accessible shared virtual spaces. As with research and publications, faculty with subject expertise in a particular area from one or more institutions can work collaboratively online to develop core materials and/or source learning resources from increasingly available open educational resources.

   Working collaboratively with colleagues, you can share ideas, jointly develop and share resources, and provide critical feedback to one another, thereby improving teaching practice. Equally important to content is developing learning activities, assessment tools, and multimedia and interactive modules. Best created by a team, these will save resources as well as significant time for inpidual faculty members.

7. **Ensure that course evaluation and maintenance are planned**

   Evaluation and maintenance of technology-based courses go hand-in-hand. As Bates points out, because technology-based courses are new and different, it is good practice to evaluate them regularly for educational effectiveness. Evaluation can take a number of forms, both formative and summative. Information about enrolments, grades, completion rates, feedback from students and faculty, as well as observations of student behaviour in the course are essential to course maintenance.

   All technology-based courses require at least some minor maintenance. For Bates, once a course or a learning resource is developed, it should be kept live and dynamic to maintain quality. The content must be updated as new resources, such as journal articles, become available, assignments and learning activities revised, URL links checked and student feedback incorporated.

   Keeping whole programs or many courses updated is complex, requiring resource allocation and a planned maintenance schedule. Just as development requires faculty time, so does evaluation and maintenance. The teaching plan (described above) should include an evaluation and maintenance strategy and schedule for technology-based courses that does not add to teaching load.

   With these seven practical considerations, Tony Bates has established a clear path to success in adapting teaching and learning to new technologies. Bates also has an excellent series of blog posts on teaching with technology (link is external) that address a wide range of considerations from the capacities of various technologies to educational theories

FOR FURTHER INFORMATION

If you are fairly new to online teaching, you might want to read the series of 10 posts on Quality Online Learning on Tony's Blog which cover designing, teaching, and evaluating online courses in some detail. If you start with the last one (link is external), you will find links to all the previous ones. A condensed version covering all the main posts in the series can be found here (link is external). Experienced instructors might be interested in reading Designing online learning for the 21st century (link is external).

Bates, A.W. (Tony). (2001). "Beyond Button-Pushing: Using Technology to Improve Learning" in Epper, Rhonda M. and Bates, A.W. (Tony). *Teaching Faculty How to Use Technology: Best Practices from Leading Institutions*. American Council on Education. Westport, Connecticut: Oryx Press.

Bates, Tony. (2001). *National Strategies for E-Learning in Post-Secondary Education and Training.* (link is external) Paris: UNESCO: International Institute for Educational Planning.

Bates, A.W. and Poole, Gary. (2003). *Effective Teaching with Technology in Higher Education.* San Francisco: Jossey-Bass, John Wiley and Sons.

Bates, A. W. (Tony) and Sangrà, Albert. (2011). *Managing Technology in Higher Education: Strategies for Transforming Teaching and Learning.* San Francisco: Jossey-Bass, John Wiley and Sons. Information about the book, including summaries of chapters, scenarios from the book and opportunities to discuss some of the issues, can be found at http://batesandsangra.ca (link is external)

Tony Bates' blog (www.tonybates.ca (link is external))