

## Technologies for Active Learning: Socratic Dialogue, Chalk, and the Internet

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If you were to believe everything you read in the press (popular and academic) about learning technologies (hereafter LT), you could be forgiven for thinking that we are faced either by the dawning of the Age of Aquarius or the end of civilization as we have known it. In this paper, based entirely on my own experience with LT over three years in two different courses, I suggest that there is some good news and some bad news. The bad news is that LT does not miraculously restore sight to the blind or hearing to those who will not hear. The good news is that neither does it blind those who would see or deafen those who would hear. Certainly there is nothing magical about the language of LT. Socratic dialogue, pencil and paper, blackboard and chalk, and computers and the Internet are all different forms of LT, and all are capable of profound effects on our students' learning when employed appropriately. Indeed, the best news from my perspective is that far from requiring me to give up anything I cherished about effective teaching and learning, the newest forms of LT have allowed me to extend my favourite, time-tested measures for motivating students' active involvement in learning.

In what follows, I claim that our first priority must be teaching practice that promotes active student learning and, therefore, LT is useful in so far as, and only in so far as, it facilitates that sound practice. Active learning is the end; LT is only the means. I further claim that one's choices among the broad variety of available LTs must be guided by attention to the actual situations and learning needs of one's students. And finally, I will argue that we should all engage in refined classroom research to determine what is working, and what is not, in the different forms of LT we employ. We need to be as scrupulous and scholarly about our teaching as we are about our other academic work. I preface these claims with a summary of a distinguished colleague's critique of LT, and much of my argument will be developed in response to that critique.

### **A Critique of LT**

On the eve of the opening of the past academic year, Clifford Orwin, a University of Toronto political scientist, published in the *National Post* a thoughtful dissent from a paean to LT by David Johnston, president of the University of Waterloo. Neither Johnston's endorsement nor Orwin's dissent would be unusual on many Canadian campuses, where debate over the efficacy of LT has become a regular part of faculty discourse. The aspect of the debate which introduces Orwin's piece is the expectation in some quarters that universities will "do more for more people, more quickly and more cheaply, and learning technologies will enable them to do so." This expectation raises two kinds of question: whether it is possible for LT to produce such results, and, if it can, whether such results are desirable. Orwin is clearly skeptical with respect to both. And certainly my own experience with the task of simply maintaining Internet sites after they are up and running – an activity that involves conservatively one hour per course per day on average during term – leads me to agree that the efficiencies and economies, of both time and resources, which are sometimes cited as advantages of LT, are wildly exaggerated, if they exist at all.

What particularly sets Orwin's teeth on edge is Johnson's characterization of LT as "those information and communications tools that provide increased opportunities for interaction with learning materials and among learners, as designed and guided by university faculty." Granting that this technology can make a difference in some fields, Orwin objects to distance and virtual learning in the field we share, political philosophy. His model is the Socratic confrontation of teacher and student, and there are many reasons why one must agree that Internet technology is no substitute for the intense and intimate oral and non-verbal communications of people in the same space at the same time: the importance of non-verbal signals, the shades of oral inflection, the need to struggle in real time to reach personal and shared understanding. Also to consider is the fact that our subject matter is books, especially old books, and

what these require is close and patient reading and serious thinking, not the browsing that the Internet encourages. It is worth quoting *in extenso* Orwin's response to Johnston's claim that LT "allows us to focus more closely on the needs of the learner."

...books require patience of us. They demand that we proceed only at the pace of reading, which is that of serious thinking. They expect us to submit to lengthy perplexity before we achieve clarity. Already in 1874 Nietzsche complained that rumination, though natural to every cow, was alien to modern readers. Even then to be modern meant to be in a big hurry. Whatever lessons the culture of wiredness teaches, it doesn't appear to teach patience. If LT is for busy people and "allows us to focus more closely on the needs of the learner" (Johnson), education is for people willing to make it their business to discover their actual needs. Education is all about vulnerability; technology is all about control. They make clumsy bedfellows.

### **The Socratic Ideal**

One of the reasons that I begin with consideration of Orwin's manifesto is that I would like to think that he and I agree both on what we are trying to achieve and about exaggerated expectations of LT. But, that having been said, I will argue that it is precisely in aid of active student learning, discriminating student reading and meaningful classroom encounters that LT is valuable.

Much of Orwin's Socratic ideal rings a deeply sympathetic chord for me: teaching and learning as deeply individual and mutual, the inculcation of critical habits of mind and personal responsibility for one's own learning. Like Orwin, I remain to be convinced about any advantages of teaching and learning in political philosophy that is solely computer-mediated. I would go further, even in the face of the increasing availability of wholly Web-based courses and programs, to agree with Orwin that something precious and irreplaceable would be lost in political philosophy if the only discourse were among interlocutors separated in space and time. Though I grant that this is a view subject to empirical testing, I would like to think that my attachment to face-to-face contact in political studies is not simply prejudice and habit, but relates to the focus of both Socratic correction and dialectic on the consciousness of the interlocutor.

My practice, like Orwin's, is inspired by Socrates' example; but Professor Orwin's commitment is to dialogue alone, precisely on the grounds that if it was good enough for Socrates, it's good enough for him. I wish to deal critically with that commitment and with the strong distinction he draws between education as liberating and technology as controlling. As to the first, while I unhesitatingly subscribe to Socratic exchange as an ideal to be aspired to, it does strike me as a less applicable model of the means to achieve the deep, patient, critical, and individual learning that is the aim Orwin and I share. Even granting that nothing is more important in political philosophy education than the kind of knowledge that Orwin privileges, his formulation ignores other fundamental expectations we impose on our students' political formation, and even more importantly it ignores the considerable difference between the situation of our students and that of Socrates' interlocutors. It is no trivial difference between Socrates' activity and ours that he was not at all concerned with book learning, let alone "rather old books" dealing with conditions totally remote from students' experience, and that his correction and dialectic were oral and not written. Moreover, with some notable exceptions (e.g., Meno the slave), Socrates' interlocutors were comfortable and already well educated at the inception of their Socratic experience. Our students may be as ignorant, complacent, and self-satisfied as Socrates' contemporaries and fellow citizens, and hence as greatly in need of his kind of correction, but in many ways they are much less well prepared than was his audience to receive the kind of instruction he provided. As to the second, I will contend that Socratic dialogue, though particularly valuable, is simply another form of learning technology, and thus just as subject to being a source of control as any computer- or Internet-based LT. What determines whether a learning tool is controlling or liberating is not the technology, but how it is employed.

### **Our Students and Their Needs**

My claim is that our students whether or not they realize it need Socratic learning, and evidently are capable of it, but are not well prepared to undertake it. Consider the following based on the environment with which I am most familiar, York University, but arguably descriptive of most Canadian universities:

- A large proportion of entering students are members of the first generation of their families to attend university. I cannot imagine why anyone thinks that the old days were good when university enrolments were restricted, depending on how far back you go, to students who came from privileged backgrounds, and were white, male, and Christian. While the opening of the university to all those who are able to take advantage of what it has to offer is an unqualified good, it does not make delivering on the promise any easier. Apart from all other complications created by this welcome population explosion is newcomers' lesser familiarity with the metacognitive expectations that children of university graduates have osmotically imbibed from their parents.
- Most of our students work a considerable number of hours out of class time to support their studies. For students to be able to spend the time on task needed to master the skills and knowledge involved in our courses in these circumstances, we have to be prepared to allow some flexibility as regards the means of satisfying course requirements.
- In my experience, our students are as bright, articulate, and capable of learning as always, but they are quite ignorant of the world beyond our country, and of any time before their own life span. In courses that focus as Orwin's and mine do on books, especially very old ones, that the past is *terra incognita* for most of our students presents particular challenges.
- Many students suffer from poorly developed core skills of reading and expressing themselves, especially in writing. The deficiencies, in my experience, are serious, but corrigible. As to reading, for example, incoming students often find it difficult to give a succinct and precise account of the import of assigned readings. They are perfectly capable of understanding, and conveying, even arcane details of subsidiary points or illustrative detail, but the main design of sections, chapters, or whole books often eludes them. Similarly, for the most part they are not discriminating readers, finding it difficult to distinguish among political attitudes and approaches, or to assess the validity of arguments or weigh evidence. Though most students in my experience are orally fluent and expressive, their writing usually leaves much to be desired, both substantively and stylistically, a reflection, at least in part no doubt, of their scant reading.
- Class size has grown out of recognition since I arrived at York in 1971, as a result of both increases in enrolment and the decline of funding relative to that enrolment.

### **What is to be Done?**

The point of the foregoing litany is not to hearken back to the old days which I don't think were any better (except possibly as regards resources per student), certainly not to blame our students for any deficiencies in their background preparation, and above all not to despair that they are incapable of making up for those shortcomings. I have encountered literally thousands of students during my career, of whom I can count on the fingers of one hand the number who in my judgment were wasting their time and ours. The challenge that we face as teachers is how to prepare our students with the particular backgrounds they bring and with the resources at our disposal to realize their potential, which is certainly substantial.

I happily grant without hesitation or qualification that Socratic encounter in a small group setting with an instructor like Professor Orwin would benefit all our students. But I do not grant that this approach is the only means of promoting our shared goal of active student learning. Nor can I grant that it is the best method for doing so while simultaneously addressing the challenge of deficient student preparation and straitened resources. My own belief is that some sensitively designed and delivered LT solutions may actually enhance our students' active learning, that is, enhance our effectiveness. What I am trying to do with LT is not so much to increase the economies of scale, but precisely the contrary: to shrink the deleterious consequences of size, to get back to a simulacrum of practices of more personalized teaching and learning that were possible when classes were smaller and resources more plentiful.

## Strategies for active student learning

Long before using any computer-based LT, I had adopted a number of strategies for the express purpose of promoting active student learning. In what follows, I will simply characterize those strategies, and indicate how and why I have adapted them to LT, indicating where the adaptations seem to me and to my students to improve on the originals.

### Lecture Outlines

The most impressive lecturer I encountered as an undergraduate was a former chair of the University of Alberta Department of Classics who began every lecture with an outline of what he would cover in the lecture to follow. My first discovery was that there was an Ariadne's thread through the labyrinth of his remarks; it only looked like he was making it up as he went along. What most impressed me was the discovery that a lecture could be a marvelous voyage, and that getting there was indeed half the fun.

From my first teaching as a graduate student, there never was a moment's doubt that I would emulate his example by providing students with a lecture outline. As a fledgling, however, I came to admire more than I ever had as a student the artfulness of the whole. A good lecture tells a story, asks and answers a question, or poses and solves a problem; it has a beginning, middle and end; in short, it has a kind of integrity. And so the very first point in my lecture outline attempts to provide an overview, to convey in brief what that lecture is about.

In the days when the Dead Sea was still alive, I would arrive in lecture early to scrawl an outline in chalk on the blackboard, just another kind of LT. But in my case, chalk and a blackboard were not the optimal form of LT; students often found it impossible to decipher my Linear A script, or to see it through my body in the course of the peripatetic delivery. PowerPoint, thus, was an exhilarating discovery. There is no denying that, as a tool in the academy, it has come in for valid criticism of its original design for commercial presentations. I have found, however, that not only does it resolve my blackboard problems; its limitations actually impose a welcome discipline on my lecturing. If I am unable to adapt a first-year lecture into a PowerPoint outline, then almost certainly I have not sufficiently clarified what I am trying to communicate. PowerPoint outlines allow me both to capture succinctly everything I am trying to achieve in a fifty-minute lecture, and to signal my location in the argument by introducing the outline headings only as they become relevant in my delivery.

The development that has garnered the greatest praise from my students, however, is my current practice of posting the text versions of my PowerPoint outlines in advance on my Web page. Outlines are always available the day before lectures, and students are encouraged to download and print the outlines, and to use them as a basis for their note-taking, another critical skill that I seek to inculcate in my classes. Not only do students not have to transcribe the outlines; the best students have discovered how to make the very best use of them in other ways. At the final examination, a first-year student explained that he had converted all the outlines to Word documents, and had done a key word search to ensure that his preparations covered all relevant course materials. Colleagues wonder whether posting outlines might actually encourage absenteeism among those who confuse the outlines with the lectures, but I find that students quickly learn that they can no more get everything out of the outlines than they can get the book out of the table of contents.

For the first time this past year I taught my small third-year course on seventeenth-century political thought employing WebCT software. I was particularly excited about the conferencing aspects of WebCT, which made it easy for students to continue discussions initiated in class on their own time. This hope and expectation was more or less realized in the end, but candidly it did take the better part of the course for students to get into the rhythm of opening up the texts for one another out of class. However, the web environment provided an excellent solution to the problem of uneven and insufficient familiarity among students with prerequisite background knowledge (see [Caron](#) in this issue for a similar approach to this problem). What we study in this course is the evolution of the theory and practice of responsible

parliamentary government. To appreciate that, however, students must begin with a sense of what conditions obtained at the time James VI of Scotland acceded to the throne of England in 1603. I provide contextual materials drawn from multiple sources to address this topic, but there are insufficient lecture hours to consider this material in any detail. By posting on the website detailed notes on the contextual material I was able to provide more assistance in gaining the necessary background familiarity than was ever possible before. In addition to encouraging students to explore the first-rate scholarship, providing them this easily accessible compendium of some of the most significant findings allowed us to overcome more smartly the difficulty of getting started in the course.

### **Promoting student questions**

I have always encouraged student questions, and often do so by relating a story that made the rounds when I was first a graduate student in history of ideas at Brandeis University. The story concerned a locally famous poet and teacher leading a course on symbolist poetry, who had early introduced into his analysis the term of art “fantasy echo,” which was then eagerly thrown around by the more articulate undergraduates, until one confused soul was emboldened to ask the professor for a more precise definition. It turned out that “fantasy echo” was his oracular Boston pronunciation of the end of the nineteenth century in France (*fin de siècle*). Students easily remember my plea for no fantasy echoes in our course; but still, staunching the flow of my lectures, especially in front of 250 other students, takes more courage than can be mustered by most undergraduates. Students are therefore also encouraged to raise their questions in the associated tutorial groups, with me in my office, or by e-mail with the promise of 24-hour turnaround. For the skeptics who fear that life is too short to be constantly bombarded by student e-mail, let me just observe that even with very large classes at busy times of year I find it easy to adhere to the 24-hour rule.

For a variety of reasons, I have found that students contact me by e-mail more than 10 times more often than they come to office hours. Though I am on campus from early morning to late afternoon Monday through Thursday, our students have complex class schedules, and work long hours out of class to support their studies. Second, though I regard myself as approachable and unforbidding, even students who are completely at their ease in the corridor have been known to tremble when discussing the course tête-à-tête in my office. Third, it does not matter how many times you explain that you are very well paid to meet with students in your office, it is a rare first-year student indeed who does not apologize and evidence conspicuous embarrassment for interrupting whatever you are doing that is obviously more important.

Most important, however, Orwin’s concession about students too shy to speak up in class is no minor matter, because my own experience confirms the much replicated results of York colleagues about participation in mixed gender classes. Males often dominate questioning and discussion in such classes, whether or not they have the most to contribute. I have found that computers are great equalizers, that female students dominate e-mail questions out of proportion to their numbers in my classes and they find online discussions liberating compared to in-class ones, at least initially. To be sure, some require no such encouragement; and for others, either the computer is no better, or is not a station on the way to enhanced class participation. But in enough cases to make it noteworthy, e-mail questions and online discussion is an entrée to enhanced participation by my female students.

It is not enough, however, in my experience to encourage questions; one must actually prime the pump. I have, therefore, introduced the simple technique of [one-minute papers](#) to monitor student progress in my courses, to allow mid-course correction and to nip student problems in the bud before they get out of hand. This simple, low tech device in my version involves giving students 5-6 minutes at the end of the first five units to indicate anonymously in 2-3 sentences on 3”x5” index cards the single point in the unit that they found most difficult or least clear. This is no small challenge. I’m asking them to let me know what they don’t know, whereas most students begin with the commonsense view that they don’t know what they don’t know. The result is that I get answers like “classical model of democracy” on which I lectured for 2 hours. Even with coaching, it takes some practice for students to assume responsibility for their own learning, and to analyze and articulate precisely the source of their own difficulty.

When I initially introduced one-minute papers, I would quickly analyze the results, and begin the very next lecture by going over the most common problems. The T.A.s and I quickly discovered that the best students were restive with this procedure, because I was taking class time to review what they felt they understood perfectly well. In the wake of that experience, I developed a new FAQs (Frequently Asked Questions) facility on my Web page, with the result that I can now provide detailed and precise responses to more questions, and students will have a permanent electronic copy for easy reference.

I have adopted a different strategy for encouraging student questions in the third-year course where the characteristic problem is lack of familiarity with the subject matter background. I developed a glossary on the WebCT site and offered students a participation bonus for proposing terms, concepts, names, and the like with which they were previously unfamiliar. The short-answer portion of the final examination was then drawn overwhelmingly from the course glossary, which comprised material with which virtually all the students would have been unfamiliar coming into the course. I also used the glossary, as I had the detailed lecture notes, to insinuate materials that I regarded of particular significance. I can report that the improvement on the short answer portion of the final examination was dramatic, reflecting the acquisition of subject knowledge that students, by their own admission, lacked coming into the course.

### **Writing as a Process, Not Just a Product**

For as long as I can remember, I have always required students to submit drafts of the major written assignment in my courses, on which they would receive feedback but no grade. On the revised final version, which takes into account the criticisms, questions, and suggestions, and is due after a reasonable interval accompanied by the annotated draft, students receive a grade but no comments. The idea here is that when students get a grade and comments about which they can do little or nothing, they direct the comments to the round file. On the other hand, the prospect of a grade about which they can actually do something concentrates the mind wonderfully on the suggestions for improvement.

What WebCT proved to me, however, is that e-submission of assignments is about much more than saving trees, as Orwin would have it. I have found that it is much easier for me to give more detailed annotations and constructive general advice on revisions by e-tutoring than by annotating hard copies. The result was that a couple of students requested, and I provided them, with feedback on not just one, but on a series of drafts. Whatever these students retain long term about Philip Hunton, Samuel Parker, the more obscure Levellers, or Sir Robert Filmer, it is my fond hope that having experienced a demanding external editor, they will learn how to internalize their own editor.

### **Technology and Control**

I have been using the word “technology” as an answer to the how question. From this usage, several consequences flow. First, all the tools we employ in helping students learn the subject matter of our curriculum are technologies in my understanding. By contrast with Orwin, who strongly distinguishes between books and LT, as far as I’m concerned books are a form of LT, one I particularly prize, but a form of technology nonetheless. From this a second implication would seem to follow, namely the implausibility of all blanket praise and condemnation of LTs. In this as in many other branches of life, circumstances are everything. Orwin and I defer to none in our respect for books, but consider the teacher of experimental or theoretical physics, for whom either lab equipment, high speed computers, or, if written, very current journal articles, but certainly not books, and above all not very old books, would be the technologies of choice.

My particular concern, however, is Orwin’s claim that “technology is all about control.” That technology allows control seems to me undeniable. As an answer to the “how” question, control is what technology is and does! A particularly striking example is the designer view on WebCT, which for those of you who are curious about whether or not there are any takers as you cast your bread upon the waters, permits you not only to track how often your pages are accessed, but also to reconstruct precisely how often students log onto your site, how long they linger, and what they do every time they are logged on – which, by the

way, I frankly communicate to students. The machine cannot yield a judgment of the quality of student participation, but there can be no dispute about the frequency of participation, and this certainly can smack of the panopticon.

In this respect, however, LT is different in degree, not in kind, from Socratic dialogue, books, and all other forms of learning technology. Socratic dialogue is as open to control in the hands of an expert teacher facing a class of neophytes as the most advanced forms of LT. And more than a few instructors have used lectures, readings and writing assignments to intimidate rather than to liberate students. Moreover, Orwin's argument seems as dubious as his conclusion is controversial. Why does Orwin think that *viva voce* exchanges, blurted out spontaneously by male students hogging the discussion, are worthwhile, whereas ones online over which students can and do deliberate, even ruminate, are lesser forms of communication because virtual, simply because we cannot see the whites of one another's eyes? My own contrary experience is first that online discussions are valuable because they require students to write more. Our students are perfectly capable of speaking; writing, however, is another matter. Second, online discussions at least as much as oral ones in real time have the potential of creating communities of learners engaged in addressing shared problems, by exposing the difficulties with superficially plausible readings. They also have the advantage of involving students who, for whatever reason, take more time to process the difficulties. Such students are neither less worthy, nor less insightful, because they are less quick.

I am convinced that Orwin is quite dramatically wrong in his supposition that education and technology are clumsy bedfellows. To the contrary, what my own experience suggests is that LT can be a thoroughly liberating experience for students. Properly employed by teachers who set high expectations, FAQs, class discussion lists, and other similar techniques that Orwin denigrates actually enhance students' ability to discover and respond to their actual needs, as he puts it so well. To turn his formulation on its head, appropriately employed LT is inimical only to those teachers who seek to maintain control by keeping their charges in a state of permanent intellectual nonage.

## **Conclusion**

Are my students faring better than they would be if I were to revert to the methods I used when I was first a graduate student, techniques that were classically Socratic question and answer? There are lots of signs of increased student satisfaction. When my lecture performance was more like that of a virtuoso juggler of ideas, students would drop my courses in droves. Those who remained might have been enthralled, and even done fabulously well, but as an astute colleague of mine wondered, where did I think that the students who dropped my courses ended up? This year there were 248 students enrolled in my first-year course on the eve of classes, and 239 nominally in the course at the time of the final examination. My student ratings have improved appreciably since the introduction of these measures, and though student approval is not everything, student satisfaction is not entirely negligible as it is known to correlate with persistence in courses and programs.

To all this, Orwin would object that what is at issue is not popularity, but deep student learning. He would be correct and I would agree. I would only point out, however, that neither he nor I knows whether serious reading and Socratic talk alone, or both of these supplemented by appropriate LT, produces deeper learning. I am persuaded that those of us trained as social scientists are in a position to design and conduct our own in-depth classroom research, taking as our point of departure our own individual and collective determinations of what it is that we are seeking to achieve in the classroom, rather than leaving this space wholly to the methodologically flawed and substantively vacuous performance indicators of our political lords and masters.

The reason I am committed to testing the effectiveness of LT in my own classes is, candidly, that LT takes a lot of time and effort. Why should anyone undertake and persist in such efforts unless it can be shown that the differences make a difference? I look forward to descriptions by others of what they are trying to achieve in their classrooms and of the outcome of their experience employing LT to do so. Even more I look forward to descriptions based on social science data and analysis. Continuing a discourse pitched in

the categorical all-or-nothing terms with which I began will not lead to progress. I am confident that studying the most recent LTs as new approaches for achieving our long-standing purposes will lead to identifying many reliable new methods for improving our students' learning experience.