Centre for Learning and Teaching

focus

on university teaching and learning

Note From the Director

The concept of 'gateways' allows us to reflect on where we have come and where we want to go next in higher education. In this issue of *Focus*, a number of award winning teachers share their own particular perspectives on the gateways they, their students, and their colleagues have, will, or must traverse as they make their way into and find their place within the academy. This June, at the STLHE conference in Halifax, delegates will have the opportunity to explore the theme of gateways across many topics.   We look forward to seeing you there! To register for the conference go to: http://www.stlhe2017sapes.ca

Suzanne Le-May Sheffield, Ph.D
Director,
Centre for Learning and Teaching

DALHOUSIE UNIVERSITY

Gateways in Higher Education: The STLHE Comes to Halifax

Prof. Robert K. Lapp
Head, Department of English Literatures,
Mount Allison University
3M National Teaching Fellow
President, Society for Teaching and Learning in Higher Education

On the very doorstep of this edition of *Focus,* I've been given the chance to reflect on the metaphor of gateways, the theme that will shape our discussions this year at the Annual Conference of the Society for Teaching and Learning in Higher Education (STLHE), coming this June to Halifax and Dalhousie. Playing with metaphors is a way of life for ENG-LIT types like myself, but this one is particularly resonant for me because Dalhousie was a personal gateway into a career that now includes (among other good things) the Presidency of STLHE. Earning a doctorate at any time is like that crazy series of doorways at the beginning of the 1960s tv show "*Get SMART,*" (https://www.youtube.com/watch?v=sWEvp217Tzw). In the 1990s at Dal, it involved making my way through that quaint cluster of houses on Henry Street that was the Department of English and passing through *both* sets of glass doors at the Killam Library: not just those to the Circulation Desk and the Periodicals, but also the ones to the Centre for Learning and Teaching on the east side of the (formerly) unroofed atrium. I'm glad to record that the CLT's early adoption of the Teaching Portfolio was quite literally my ticket into tenure-track employment. The (then) Dean of Arts at Mount Allison remarked that my Portfolio had made all the difference in a shortlist of candidates for that narrowest of passageways into academic freedom, one that now seems almost in danger of being permanently closed off.

Such changes mark our moments in Higher Education. Last spring I was back at Dal attending the Threshold-Concepts Conference, where I was forcefully reminded of one of the ways that our identity as teachers and educational developers is being shifted by seismic socio-political, technological, and demographic change. While it has always been known by humanist educators that teaching is not

so much about conveying information as it is about guiding students through a painful process of self-transformation, this (re-)definition of our role is itself a threshold concept, one that will have to fully displace teaching-as-content-transmission if institutions of higher education—especially "immersive" ones like Dal and Mount A—are to retain their authority in a world where the content is readily available in myriad other forms. The problem is that few of us have been trained to be such shamanic "spirit-guides," and so this radical transformation of our identity will be, like all such liminal states, troublesome, recursive, non-linear, and marked by failures, but ultimately transformative and irreversible.

> I earnestly encourage all readers of *Focus* to come out this June when such an opportunity to hear, share, learn, and befriend is knocking at your very door!

Midwifing this process of transformation in teaching and learning has been the work of the STLHE over the last thirty-odd years, a task conceptualized by educational developers, pioneered by visionary faculty, and embodied by the passion and courage of front-line, rank-and-file instructors in colleges, polytechnics, and universities of all shapes and sizes in every provincial jurisdiction across Canada. Each year in June, hundreds of such colleagues, along with students and administrators from every conceivable discipline, get together to inspire each other with both research and practice, with "the Scholarship of Teaching and Learning" (SoTL) and with live examples of how the "tire hits the road" in countless contexts and at various levels of "granularity." I earnestly encourage all readers of *Focus* to come out this June when such an opportunity to hear, share, learn, and befriend is knocking at your very door!

We will very much need such opportunities for support and self-development as we pass through the looming portals of the near future. In Canada, the TRC has delivered the long-overdue ultimatum to which we are all now responding: the indigenization of our institutions of higher education. Here again is a threshold concept, one whose meaning we have yet to fully grasp and whose capacity to transform our practices is both certain and full of uncertainty. For examples of what is at stake, we can look abroad, where in South Africa, for instance, the entire post-secondary system was shut down last fall by students demanding (among other things) the radical de-colonization of the curriculum. In the midst of this crisis, the biennial conference of the International Consortium for Educational Development (ICED) was held in Cape Town, where keynote speaker Joan Tronto, Professor of Political Science at the University of Minnesota and author of *Caring Democracy* (2013), challenged tertiary institutions to "re-train" themselves to avoid epistemic injustice. Instead of considering entire demographics to be "under-prepared" for higher learning, we need only to turn the tables to glimpse how higher learning itself is "under-prepared" to understand and welcome alternative epistemologies such as indigenous ways of knowing. Achille Mbembe, Cameroonian philosopher, political scientist, and author of *On the Postcolony* (2000), similarly called for the de-colonization of knowledge itself, going even further to say that a sustainable future depends on our willingness to share agency and the capacity for knowledge with non-human "actants," both biological and technological. While such visionary terms shadow-forth the shapes of our rough passage into a post-colonial, post-humanist, and ecologically-challenged future, the near term holds similarly liminal zones and difficult transitions: consider the "post-disciplinary," for example, or the "post-*book*-as-we-know-it," or how about that painful tunnel we are already jostling down and through, the era of "post-growth"?

These are just some of the variations on the resonant theme of "gateways in higher education" that occur to me from my particular vantage-point, one that I have arrived at only by virtue of being transformed by Dalhousie into a tenurable Professor, and from thence into the President of a nation-wide organization of passionate advocates for student-centered learning. I look forward to hearing your views on this theme, both in the remaining pages of this edition of *Focus*, and at the STLHE conference in June!

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Unlocking the Gateways to Learning

*Dr. Anne Marie Ryan,
Department of Earth Sciences,
Faculty of Science
Recipient of the 2016 Dalhousie
Alumni Association Faculty Award
of Excellence for Teaching; and
2015 Dalhousie Educational
Leadership Award*

A gateway allows for movement from one place to another, as long as the gate can be opened. Gateways have variable levels of access difficulty: for some, we need keys, codes, or permission to pass through. Others always remain open, or have a simple opening mechanism. In what follows, I focus on just five of the many keys to some of these gateways to learning, to share what I wish I had known when I first entered the classroom as a teacher.

In every field of study there are those concepts, referred to as threshold concepts (Meyer & Land, 2005) that serve as gateways to deep understanding within the discipline. Such concepts transform a student's disciplinary worldview and are commonly troublesome. They involve the development of a disciplinary language of communication and are essentially non-reversible: once learned they are not unlearned. Recognising patterns in our disciplines is one such threshold concept among the many that students can encounter in their learning. As experts, we think in chunks of knowledge and almost spontaneously make connections between these chunks: we see patterns. On the other hand, our students as novices think in terms of individual bites and isolated pieces of information (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010). As a result, we cannot take for granted that our students will make the connections that are so automatic to us and so necessary to learning. Travelling through a learning gateway requires work on the part of our students, but we can help along the journey by guiding them as they unlock and open the gates. Students' responses on exams and on assignments give us insights into the difficulties they experience with such concepts as they move in and out of displaying deep understanding, or show commonly-held misconceptions. Key #1 opens the gate for students to recognize patterns, so they can start to make connections more readily. Anything we can do to help students with pattern recognition or development is worth our investment. Possibilities include being explicit about connections that are not immediately obvious, talking about the patterns that exist, referring to links with previous content, and requiring students themselves to identify or even draw patterns and connections—just some of the ways to help students though this gateway.

Connected to this first key is Key #2, the idea that we learn by building on what we already know (Ambrose et al., 2010). New ideas fit into existing understandings, so we would be wise to build on what students already know. Indeed, if we consider that each student typically has 18-25 years of prior life knowledge, if not more, we would be well-advised to find ways to help them connect new learning with what they know from their prior learning, both formal and informal. In other words, the more relevant we can make a concept, and the more students can integrate a new concept with what they already know, the more likely the learning will be effective. Of course, there are times when that which is known is a misconception, in which instance, we as instructors need to create a situation that forces the student to confront their misconception, if they are to move forward in their learning.

I recall a particular professor in a graduate course referring to the idea of "taking off the top of our head and showing students our thinking" (cognitive scientists refer to this as metacognition—the thinking about our thinking (Bransford, Brown & Cocking, 1999; Ambrose et al., 2010). When I was a novice in my discipline, I had no idea why one particular concept might be more broadly relevant than

any other; everything was new, and I had no frame of reference for distinguishing overarching concepts from topic-specific concepts. Students might more quickly start to make more or better connections if we share our thinking with them. So, Key #3 is to unpack our thinking for our students, evoking a reflection on learning, developing the language of communication in the discipline, and paving the way forward.

We variably express concern that our students don't demonstrate critical thinking. The good news is that we can do something to support students in developing critical thinking. Key #4 lies in recognizing that students themselves actually like the idea of becoming critical thinkers. We can invite them into a conversation to explore a concept critically through making it explicit, and, most beneficially, we can also give them opportunities to practice. Willingham (2009) emphasises the importance of purposeful practice, in which students do meaningful and focussed practice using a concept, idea, or solving a problem. We can invite questions such as: What other perspective is possible? What assumptions are being made? What might this mean in a different context? What happens if we change this one thing? What is missing? We can invite drawing instead of writing, to encourage new ways of thinking and explaining. Engaging students in these questions and ideas pushes their comfort zone, helps them make new connections, see the world differently, and essentially, become critical thinkers. I believe that students can think critically from day one of their undergraduate experience—they may not have all the content answers, but they can certainly develop their questioning and build their curiosity at the same time as they build their content knowledge. When students rise to this challenge, they are better equipped to journey through those gateways, as they themselves become the questioners and seekers and not just the receivers of knowledge.

Key #5 is somewhat different, in that it does not directly revolve around content. This key opens the gate to develop autonomy, judgement, self-evaluation, and confidence. When we engage students in self-evaluation and reflection, and they take ownership of their own learning, they become more effective learners (Ambrose et al., 2010). How do we most effectively assist in building such autonomy and

critical judgement? This may seem like a task for someone other than the disciplinary instructor; however, I never cease to be impressed with how students will take this ownership, and develop autonomy, if we provide the opportunities to do so. As we work to develop these attributes in students, most of all we need to offer encouragement and support. What types of opportunities can we create in our discipline-specific contexts? Giving students some choice in assignment questions or topics, in exam questions, and even in how they are evaluated, builds such autonomy and self-assessment. We can invite students to assess, in writing, how they think they have done on a mid-term, what they did to study, what they might do differently next time. In these ways, students begin to chart their own course. Reflection of this nature helps them not only see how they can improve, but also asks them to think about what they really know, what they could have done better, and how they themselves play a key role in their learning.

Learning is a journey, at times exciting and other times frustrating. The challenge for us as teachers, and for our students as learners, lies in persisting when times are tough. We cannot walk their journey for them. We can guide them as they work to unlock the gates along their paths and encourage them to stick with it for the rewards beyond. As guardians of such crossings, we have a chance to make a real difference in our students' learning.

** Photography credits: Anne Marie Ryan.

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Gateways to Including Disabled Academics

Bea Waterfield,
BA (Sociology)

Kim Brooks, Schulich School of Law,
Dalhousie University,
3M National Teaching Fellow

In early 2012, the American Association of University Professors released a report aimed at generating a discussion of institutional policies to support faculty members with disabilities, to propose guidelines for recruitment, and to enable richer discussions about faculty engagement. While scholars have certainly explored the experiences of disabled students within higher education environments (Easterbrook et al., 2015; Goode, 2007; Mullins & Preyde, 2013), relatively few researchers have examined the experiences of disabled Canadian academics (Crooks, Owen, & Stone, 2014; Crooks, Stone, Owen, & Casey, 2011).

We are working collaboratively with a team of researchers at Dalhousie to explore the experience of faculty at Canadian universities who self-identify as members of marginalized groups – those traditionally under-represented due to race, ethnicity, indigeneity, gender or sexual identity, working class background, and disability. We recruited participants through our networks using snowball sampling. Each participant was interviewed using a semi-structured interview for 60-120 minutes.

Among our sample were five participants who identified as disabled. It's a small sample, and it includes participants who identify as having: mental illness, physically disability, chronic illness, and chronic pain. The sample includes women from universities in several provinces and across disciplinary fields. For this article, we draw on the social model of disability that understands disability as a phenomenon perpetuated and fostered by social institutions and structures (Gabel & Miskovic, 2014). Referring to "disabled academics," rather than "academics with disabilities," points to the social structures of academia that create disabling experiences for faculty instead of conceptualizing disability as an individual property or "impairment."

We are in the early stages of analyzing the results of our study of academics and will be presenting some of that preliminary assessment related to the larger project at the Society for Teaching and Learning in Higher Education conference (STLHE) in Halifax, June 20-23. We will be offering a poster presentation on our analysis of the experience of disabled academics. As a teaser for work-to-come, in this article we want to offer a few preliminary observations about the experience of disabled academics in academia, focusing on two issues: disclosure and the significance of having disabled faculty in the classroom.

All universities are subject to the federal contractors' program and, as such, are expected to collect data about academics who identify as having a disability. Dalhousie University's 2016 "Be Counted" census revealed that, of 1068 university professors, 58 self-identified as persons with a disability, representing 5.4% of the population.

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The issue of disclosure is a thorny one. In our interviews, all participants discussed their process of "coming out" as disabled—within their departments and faculties, at the university more generally, and in their classrooms. Some had disclosed broadly, others to only one or two people. A faculty member may know they have a disability at the time of appointment, or the disability may only become manifest during their tenure as a faculty member, or it may worsen during the time of their appointment. Even if there were no barriers to disclosure, finding the "moment" to disclose is a complex decision dependent on the environment and to whom one is disclosing.

Added to that complexity are concerns about judgement from colleagues and improper or poor responses from administrators. As one participant recounted, she worried about the disclosure process because, "… you're afraid you're not going to get the

job. And how it was put to me was, 'You know, your predecessor, who was in the disability field, needed to have their own … secretary or admin staff support. … do you need anything like that?' And … the underlying message is 'You better not need anything like that.'"

Being in the classroom can be incredibly draining for faculty members whose performance abilities may vary over time. One participant described the challenge of teaching when she was unwell: "I love teaching and I'm really good at it. … But, when I'm … having the effects of my illness, teaching becomes really difficult … there are times when I can't muster the energy to talk, just have a conversation with anyone. And so then to have to go and stand up in front of a classroom, and teach and be engaging and, [it] is so hard."

> *"I think that in my speaking to student groups or other people about disabilities and… to people in the disabled community…I …have the message which is, … 'if I can do it, you can too.'"*
>
> (Participant quote)

Many participants had suggestions for how structures might be changed. For example, one woman noted that experiences of teaching and learning could be improved by having flexibility and choice around teaching times and length of time for any class, as well as flexibility around course formats (including electronic and video formats). Another participant added that we need more "thinking outside the box," not just around mobility, but also around "energy and strength and balance" for disabled faculty.

Disabled faculty have incredible capacity to make a difference for their students. A participant stated that when she can use her experience to help a student who is struggling or has their own challenges, she can see the value of the work she does as a teacher. Similarly, one woman acknowledged her capacity to inspire and motivate others, "I think that in my speaking to student groups or other people about disabilities and… to people in the disabled community…I …have the message which is, … 'if I can do it, you can too.'"

Faculty members serve as role models. They can change the way students think, which is one of the highest aspirations of education environments, and more specifically, they can reduce anxiety and barriers for students with disabilities. For example, one participant explained that she discloses her disability at the beginning of a class, telling students, "I too am a disabled person. I used accessibility services in my educational process. Please feel free to come and talk to me, or to them, about it."

We hope that our work sheds light on the experiences of disabled and other marginalized academics, and that ultimately it helps us collectively move toward more robust inclusion in university settings. It is not enough to ensure disabled faculty are present on campuses— we must challenge "business-as-usual" and do things differently to draw on the full capacities of all faculty. We look forward to hearing some of your insights at STLHE.

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The Gateway to a Profession

Joan Davison Conrod, Professor, Rowe School of Business, Dalhousie University, 3M National Teaching Fellow

This article is a reflection on my teaching experience in the Dalhousie University Bachelor of Commerce program, where I primarily teach fourth year courses to students who have chosen to major in Accounting. Accounting is quite technical at this level, but also highly judgemental, with many nuances and policy decisions inherent in crafting the story that financial information provides to decision makers. Ethical decision-making is critical. This is an intricate dance—and a challenge as an instructor.

My students are primarily graduating students who will later accept employment positions in a professional field, and enrol in a post-graduate professional education program that leads to a professional designation, the Chartered Professional Accountant (CPA). This national program requires successful completion of six learning modules, and then a set of (national) integrated case-based exams. Creating a successful gateway to the accounting profession is central to our mission in the Rowe School of Business.

I teach in courses that are accredited by CPA Canada as prerequisites for this professional program. Courses are mapped to the CPA Canada Competency Map, and thus I have very few degrees of freedom from a content perspective. The success rates of our students through the professional programs are monitored, and this is an important external validation of our program and its outcomes.

I am proud to be a part of my academic unit, where we have developed a robust culture to achieve positive student outcomes. We offer an integrated group of courses through third year and specifically concentrated courses in fourth year. Our desired outcomes are not limited to success in professional education programs, but extend to nurturing students in a way that promotes ethical decision-making, positive self-worth, and the judgement and enabling skills that define a professional.

Since we have a clear idea of the professional education target that the students are moving towards, it is fairly straightforward to establish an academic gateway. Based on my experience, it is not easy, but it is clear. Our challenge comes in developing a gateway for the enabling skills that dictate student success. We have a responsibility to create appropriate opportunities for students that will promote growth. We nurture, encourage, support, inspire, motivate, and challenge.

Strong coverage of technical material is a given. Beyond that, though, we try to align our expectations with the case-based approach to exams adopted by the professional program. We use case-based material in our courses as well and are careful to have the same "flavour" and marking approach as is used in the professional program. Case material provides important opportunities to sketch out a real-life context upon which to base quantitative decision-making. Case-based material requires that the student assess the user needs and constraints in a given situation and formulate a response that addresses these needs. A well-crafted case response requires good communication skills; it is not enough to "do" the numbers, but the analysis must also be explained at the level of the user. In cases, students must integrate, for example, financial reporting, income tax and audit issues, or strategy, finance, and cost accounting. After graduation, our students often tell us that they have felt ready for the "next step."

Professional judgement is integral to the profession but must be developed over time. Undergraduate students have not matured enough to be able to demonstrate entry-level professional judgement; literally, the brain functions are not yet there. If we asked too much, students would become discouraged and overwhelmed (as would we!). Accordingly, at this stage, we can encourage nascent steps and establish patterns. And we must do this consistently, through a series of courses and exercises; we must incorporate an integrated set of behavioural outcomes into our courses through third and fourth years.

As a simple example, our students might be asked to do an analysis of the "impact on net income" of three acceptable accounting measurement issues. (Learning Outcome: technical skill, plus an understanding that this decision impacts the bottom line.) The students might be asked, in a fairly direct way, which alternative a manager with a bonus based on net income might prefer and how shareholders would react. (Learning Outcome: the choice will be affected by the motives of the decision makers; there may be conflicts in various user groups.) At a later stage, this might become a case situation where a company has a choice of measurement methods for a given situation, and management has a bonus. At that stage, students might be expected to apply the knowledge that it is important to calculate impact of each on net income and explain that the bonus will impact the preferences of management—which may be in conflict with other stakeholders. (Learning outcome: technical skill, decision about what quantitative analysis to perform, user needs and motivations.) While different courses have different technical "targets," our program is meant to gradually, but consistently, push the qualitative elements of judgement. It can be challenging for instructors to find that modest, but do-able, stretch target with respect to judgement.

Enabling skills such as: communication, teamwork, organization skills, and leadership, are critical to the overall success of our students as they create their professional identities. This emerging professional identity is critical to us and has many aspects. Students are encouraged to create communities of learners. We have required group work, but informal group work is an interesting phenomenon. That is, they help each other out. For this to happen, students must first get to know one another, and second, must trust and respect each other. We are careful to explore academic integrity issues up front, so we all know what "cheating" might look like—but also what cheating does not look like. Once we clear that fence, the opportunities for learning and teaching at the peer level are significant. We encourage the win/win environment of cooperation, not competition. Accordingly, we see the students become closer and more cooperative as the two terms in fourth year progress. We believe that these experiences help students conceive of themselves as team members and team leaders. These are important aspects of professional identity in this field.

A colleague at another university, who has seen a cross-section of our students alongside their peers nationwide, commented to me that Dalhousie students are a joy to work with—hardworking and respectful. Perhaps this starts with the attitude we try to convey in our academic unit. We act as role models and demonstrate hard work, integrity, and respect. Students begin to understand that their instructors are not on the "other side" of any fence, but rather facilitators who are keen to promote learning. Of course, we also require hard work—there is a heavy workload, and at this stage, students are well aware that other career paths are less time-consuming. We enforce academic integrity requirements, a fact that is well known; integrity is the hallmark of our profession.

It is a significant responsibility to be the "keeper of the gate." On one hand, I have an obligation to my profession to attract and nurture students who have the right characteristics to become successful professionals. I also have a significant responsibility to students to ensure that they have the right building blocks in place to confidently proceed through a demanding program and achieve the professional lives to which they aspire. My responsibility is discharged through thoughtful consideration of the competencies that are required and working to develop and deliver, with my colleagues, an integrated educational experience.

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Who Says Traditional Teaching Has No Value?

A computer science professor's perspectives on how to engage and inspire students in the classroom in a digital learning era

Srini Sampalli, Professor, Faculty of Computer Science, Dalhousie University, 3M National Teaching Fellow, Vice-President (Canada), International Federation of National Teaching Fellows

(This article contains excerpts from the keynote speech of the same title given by the author at the World Teaching Summit 2017 at Birmingham, UK, on February 17-18, 2017. The Teaching Summit was organized by the International Federation of National Teaching Fellows (IFNTF)).

With the advent of online courses, virtual universities, and flipped classrooms, is the traditional style of teaching on its way out? With our students becoming increasingly reliant on technology for learning, do face-to-face interactions still have value? In this article, I would like to challenge some of these notions and argue that effective teaching still has strong roots in traditional methods and make a case for building links between tradition and technology, so that it can be used to leverage what face-to-face teaching can offer.

At the outset, I must point out, in the interest of full disclosure, that I use a lot of technology in my teaching: from animations, simulations, and web tools to holding virtual office hours and using gadgets such as iPad, AppleTV, and Apple Pencil. Furthermore, little can be done to stop my students' infatuation with the latest apps and digital learning resources. As a Computer Science professor, I constantly face the challenge of how to blend digital learning with traditional methods and keep my students engaged.

It would be an understatement to say that the last two decades have witnessed a tremendous growth in technologies that have either directly or indirectly impacted the pedagogy of teaching and learning. Educators can now easily create content with text, image, video, and audio and integrate them with web technologies and social media. They can easily share, upload, and distribute the information. At the same time, recipients have excellent tools to access content easily and quickly. Facebook discussion groups, Google share drives, webinars, gamification of educational content, TED talks, YouTube videos, mobile learning, sync learning, StackOverflow, and Quora discussion groups—these are just a sampling of tools that students use to self-direct their learning. These technological advances have led to two major shifts in teaching pedagogy: (a) the onset of online courses and a reduction in face-to-face meetings between the learner and the teacher, and (b) the creation of a generation of multi-taskers among learners.

There is little doubt that there are advantages to self-directed online courses and the abundant use of technologies to deliver content: the convenience of learning anything, anywhere, and anytime; accessibility; self-paced revision of content; and getting answers to specific questions on the course material, to name a few. However, learning that is purely online can mean that students miss out on key aspects of good learning such as interaction, accountability, engagement, and the relationship building experience between the teacher and the learner (Bejarano, 2008; Macey, 2013). This would be even more likely to be the case in Massive Open Online Courses (MOOCs). In a 2011 MOOC offered by Udacity there was a staggering 150000:1 student-to-professor ratio (Daly, 2013). Another study on MOOCs (Hollands and Tirthali, 2014) suggests that, while they are attractive from an economic standpoint, they will mainly serve as teaching resources rather than as stand-alone courses, and that it was unclear whether educational outcomes have improved with online delivery. While MOOCs are an extreme example of online teaching, and do not fully reflect the majority of learning that takes place with online content, it does drive home the effects of a complete technology take-over of the classroom. As Buemi (2014) points out, technology is only a means

to an end, and we have developed a fascination—and perhaps a misplaced excitement—over the latest technological tools.

Can students be effective multi-taskers? Although it may seem impossible for the current generation not to use multiple gadgets and work on multiple tasks simultaneously, numerous studies have revealed the negative effects of multitasking on students' learning and retention. As summarized in Weimer (2012), multiple studies have shown that multi-tasking such as texting, checking email, instant messaging, and playing games, etc. while listening to lectures or engaging in classroom discussions leads to significant impact on students' overall performance in the course. One study indicated, "The more students used their laptops in class, the lower their class performance" (reported in Weimer, 2012). In the words of Mozart, "The shortest way to do many things is to do only one thing at a time." Furthermore, the glut of digital information and resources available online today, and the associated difficulty in mining and getting to the right information, have created a mentality of procrastination amongst our learners, "It's there somewhere, I'll get to it and learn it later."

Then, as digital learning technologies create transformations and new gateways in education, can we create an engaging learning atmosphere by offering them together with traditional teaching methods? Can we effectively blend technology into learning without sacrificing face-to-face interactions? As a computer science professor, I see new and emerging technologies on a day-to-day basis, both inside and outside the classrooms and in my research lab. As surprising as it may sound, I request all my students to turn off their gadgets (smartphones, laptops, iPads, Google glasses, etc.) for the duration of the lecture. Are the students surprised that I ask them to do this in a computer science course? Yes. But they very quickly see the benefits of focus and engagement. My role as a teacher is to orchestrate the lecture minute-by-minute, and keep my students engaged, inspired, and motivated to learn.

I believe passionate teaching is not just about being an expert in the subject matter; rather, it is a package that consists of good preparation, effective delivery, and most importantly, a caring attitude towards every student. I call this the Teaching Triangle. In terms of preparation, a lesson plan must be organized carefully and in detail. I maximize my effort into organizing the concepts into small, easily digestible chunks, that I call learning modules. My examples and illustrations are carefully chosen and well crafted. During preparation, I constantly ask myself: "How can I take this seemingly abstract and dry concept and make it understandable?" The answer, most of the time, is to place it in context. If the students can relate to it, they will not forget it. As an example, when I need to illustrate an abstract concept in object-oriented programming such as "Aggregation is the process of building larger software modules called objects from smaller entities," I show them the example of putting a cookie in a cookie jar and then the jar on a shelf, or building a Pokemon Go game with simple "Pokemon objects."


The Teaching Triangle
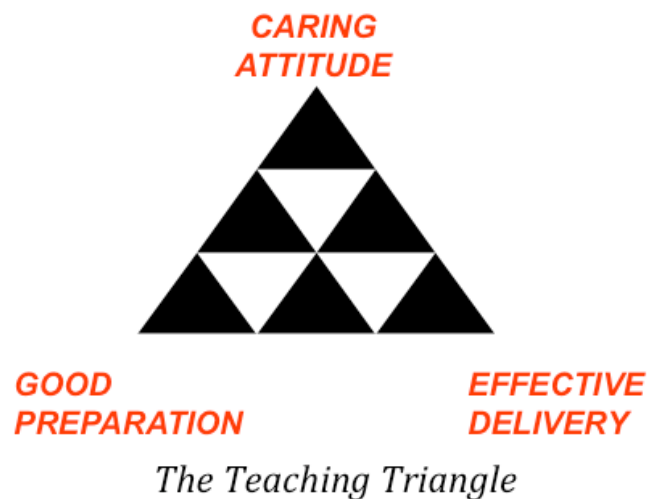
In terms of delivery, we need to show energy, enthusiasm, and passion in every lecture. I try to ensure that I inspire the students not only in terms of the concepts and subject matter but in other aspects as well. I treat each lecture like a production— carefully planned and orchestrated. The power of repetition helps to hone the concepts. As the saying goes, "Tell them what you are about to tell them, tell them, then tell them what you have told them."

I get volunteers in my class to enact concepts in computer science to enhance learning. Take, for example, the illustration of the concept of "linked lists," an important software structure that is built by linking modules together. It is a difficult concept that requires students to visualize the intricate operations. We build a "human linked list" in class and enact the operations in a way that makes it easily

understandable. In addition to the examples mentioned above, I often express motivational quotes in the form of computer programs—something they can relate to what they're learning.

Finally, in all my years in the profession, I have found that every aspect of teaching, whether it is in preparation or delivery or our attitudes towards it, centers around one aspect—the care that we show for our students. We need to show our students that we genuinely care about them, and that we are passionate about teaching them. This means we need to address their needs, tolerate diverse opinions, be flexible, and be willing to learn from our mistakes. If we can balance our professional attitudes with a humanistic quality to teaching, all the tenets of good teaching automatically fall into place. In the words of educator Serge Piccinin (1997), "Students learn what they care about, from who they care about, and from who they know cares about them."

Can we avoid technology completely and resort to traditional teaching only? Technology is here to stay: "Once a new technology rolls over you, if you are not part of the steamroller, you're part of the road" (Brand). However, technology cannot, at least in its current form, replace traditional face-to-face interaction. The web cannot inspire, motivate, and engage students like an effective teacher with traditional teaching methods. As Buemi (2014) points out, "[our excitement over technology] ought to be on the praxis of teaching, not on the use of the latest tools." We need to blend digital learning techniques into our teaching strategies by building links between tradition and technology and by using technology to enhance and leverage what face-to-face teaching can offer, not replace it.
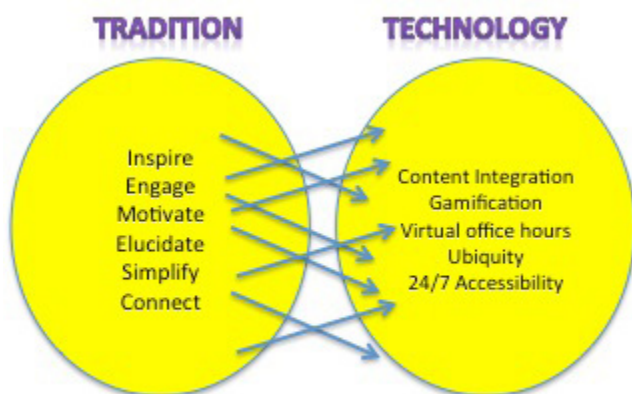
A Blended Care Model

A *Blended Care Model* such as this, must integrate not only the best in teaching strategies, and the best in digital learning techniques, but it must also be driven by our policies and best practices—keeping students as our top-most priority. Jane Tompkins, in her book *A Life in School: What the Teacher Learned* (1997), says "The longest journey a person can take is from the head to the heart." We can show our students that the journey to knowledge can be a lot of fun, and that we are there for them as their motivators, guides, and friends.

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