Mind the Gap

by C. Liam brown

On my first day of classes at the Faculty of Education at Queen's University, my Physics Education professor wore a t-shirt from the London Underground that read, “Mind the Gap”. The shirt was meant as something of a warning about the difference between learning how to teach at university and the actual act of teaching during each month-long “practicum,” or student-teaching session. The gap to which he was referring is one between theory and reality, between thought and action, between a new teacher's understanding and the wealth of experience of an Education Professor, and between a campus full of adults thinking seriously about education and the complete chaos of a school filled with children.

I studied physics for four years during my undergraduate degree, and a gap existed there as well – in this case between the logical algebraic answers of classroom theoretical physics and the messy world of experimentation, where unexpected errors constantly muddy the results. But there is a significant difference between these two gaps. Science, and physics in particular, is composed of theories – the very word “physics” usually refers to a theoretical body of knowledge. The people who study and practice education, on the other hand, certainly carry with them the weight of years of research and experimentation; but education is not a body of knowledge: it is a process, an action.

In that context, then, learning how to teach when you're not actually teaching is like learning how to play baseball before you've ever held a bat. I certainly felt this gap myself when, after a month at Queen's, I found myself standing in front of a group of tough young students – only five or six years younger than me, at the time – who sneered at me before I even opened my mouth. Suddenly, everything I'd learned about education seemed embarrassingly simplified, or unrelated to my current situation, or impossible to achieve. My meagre successes in the classroom were constantly overshadowed by frustrations and failures, both real and imagined. After finishing my

Bachelor of Education, I spent two years teaching at an American high school in Mexico, yet I still found that I hadn't come any closer to crossing this gap. And I heard the same refrain from all of the teachers I worked with, both during my practicum and in Mexico: each year for a teacher is a story of struggle and stress with at best uncertain results. Sometimes a group of students will leave a teacher with the feeling that they really learned something, and sometimes a teacher will see another group just scrape by and be on their way. The most difficult part is that these outcomes are influenced by such a wide range of factors – some obvious and some unknown – that what the teacher actually did in class, not to mention their experience and theoretical knowledge, can seem moot.

What I was learning during these years was that there was another, deeper, hidden gap in the world of education. It did not stem merely from the fact that teaching and learning are extremely complex processes, making it difficult for teacher educators to train teachers or for teachers to make good use of their training (although this is all certainly true). There is an abundance of thought and research that can tell us exactly how kids learn best, and how to effectively facilitate that learning, yet it is rare to find a school in which these practices are followed. The real gap, the one that every participant in the system – teachers, students, parents, administrators – senses at one point or another, is between what almost everyone perceives as the primary purpose of school – ensuring that young people learn the academic information and skills they will need later on in life – and its practical purpose, which has almost nothing whatsoever to do with academic learning.

How People Learn

When politicians talk about improving the education system, they usually advocate a few key changes. Smaller class sizes mean more interactions between the teacher and each student. More money for education results in new materials for students to use. Standardized testing allows us to hold teachers accountable for

improving student performance. Better pay for teachers means schools can attract and hold on to better teachers. Almost everything voters ask for seems intended purely to increase the amount of *learning* that happens in the classroom. Inside of an average school, however, things are very different: very little time is spent thinking about learning itself.

Principals and other administrators are generally far removed from the classroom. They are required to keep schools safe and clean, deal with parents, schedule classes and events, report to their superiors on the school board, manage personnel, and perform or delegate the million other small tasks that keep a large institution running smoothly.

Students are completely disenfranchised in most school systems and have spent so many years being trained by grading systems that they tend to think of grades as the most important thing in school – and grades are seen (with varying degrees of truth) as reflections not of learning but of effort, good behaviour, and a person's natural intelligence.

Teachers, meanwhile, spend a lot of time thinking about learning (or at least, the good ones do), but deal with so many distractions that putting good learning at the forefront of everything they do in the classroom may not be possible. Before good learning can happen, teachers need to plan lessons, grade papers, keep classrooms under control… And the isolated, permanent, and repetitive nature of the job can easily lead to practices becoming routine and unquestioned. Most education systems do not have serious continuing training built into them because teachers are too busy teaching.

Various tactics for improving the school system pass in and out of vogue, and each one is hotly debated. But in the current discussion on education – a discussion between teachers, professors, education experts, researchers, parents – there are a number of common ideas for improving learning, and these same ideas are reinforced by education research time and again. The consensus in current literature is that good learning is, among other things:

- self-directed;

- differentiated – built on the strengths and interests of different students in different ways;
- directly relevant to students' own lives and to the present-day world around them;
- collaborative;
- focused more on true problem-solving than on memorization; and
- hands-on and active.[1]

Although it would seem far from easy to achieve all of these at once, one could begin to imagine that in the right school, with the right teacher, they could be possible.

But consider an environment which was designed to achieve the opposite of good learning, and you may find that such a place sounds eerily similar to our modern-day schools.

The Opposite of Good Learning

This is what such a school might look like:

Self-Directed Learning

Students are told what they have to learn and when they have to learn it. They have only a limited number of subjects to choose from, and they have no part in developing any of the curriculum for the classes they are in. The teacher sets the pace of the class, and even if that teacher is sensitive to her students' needs and abilities, she is limited by the structure of the school year and by the fact that she is supposed to bring each student in the class to the same level by the time the course ends.

Once a student has chosen his courses, he is then told when to arrive for each class and what to do once he is there. During the day, he follows a schedule that has

been prepared for him, spending equal amounts of time in each classroom no matter where the lesson has gotten to when the bell rings.

This hypothetical student did not choose to enroll in school at all; it was done for him because he is legally required to come to school up to a certain age. This means that he wakes up when he is told to, arrives at a building which bears some resemblance to a cage, and learns subjects which someone he never met has decided are important for him. He may learn things in a math class, for example, that he will never think of again throughout his life. The only time this student learns in a truly self-directed way is when he takes some of his free time, outside of school, to pursue a subject of interest. During school, if his attention is on something other than the class he is in – even if he might be learning something – he is said to be misbehaving.

This student also has no way to measure his own success: his performance is evaluated by his teachers based on their own personal grading scales, which he may or may not understand or even have access to. Having had no part in defining what successful learning might look like in school, he is that much less able to recognize or strive for it in his work.

Differentiated Instruction

Each student is expected to succeed at a significant variety of tasks every day of every school year until they graduate. Despite the enormous differences between each student's abilities, interests, prior experience, learning styles, and so on, they are placed at random (the only criteria being age and, in many cases, whether the student chose to take an “advanced”- or a “basic”-level version of the class) into large groups.

The students are all held to the same expectations: each does the same homework and hands in the same assignments, and all are graded on the same scale. During most lessons, students are taught in a lecturing format while copying notes from the board. At the end of most upper-level classes, students are required to complete some form of standardized exam, with little or no chance to demonstrate their learning in other ways.

High school diplomas are understood to be proof that a student has learned a very specific set of skills and information – in other words, one person with a diploma is more or less interchangeable with another.

Relevance

Teachers are constantly barraged with the question, “Why do I need to learn this?” and often find that they don't have a good answer. Science problems involve purely hypothetical situations, and lab activities recreate experiments done many years earlier instead of addressing present-day scientific investigations. Inside the school, the only times students connect with events in the outside world are when teachers ask them to do simple research projects; the students read news articles or websites and summarize their findings according to the proscribed format. Current events are discussed in classes like English and social studies, but the results of student work have no impact on the issues themselves – they only serve to earn the students grades.

The students are required to complete a series of classes before they are allowed to graduate, even if the classes have little or no relevance to the rest of their lives. After school, on weekends, or after graduation, the students rarely apply any skills or knowledge learned in class to anything they do, with the exception of basic reading and writing skills and a handful of skills and knowledge specific to the career path or post-secondary subject they pursue after high school.

Collaboration

At this hypothetical school, almost all student work is completely individual, and assistance provided by other students is generally considered cheating. Students are assigned individual grades at the end of each course and year, and although many teachers are careful to assess each student separately and not in relation to the other students' performance, such a system inevitably leads to competition.

These students either love “group work” because it is not designed to be truly collaborative and so they can get away with doing less work than others, or they hate group work because they always work harder than their fellow group members but end up with the same numerical grade.

This group work is generally limited to members of a certain classroom and rarely (if ever) involves true collaboration between classes, grade levels, other schools, or anyone out in the real world.

Problem Solving

Students are often asked to solve “problems” in math and science classes, but much of the rest of their classes involve being presented with information or, especially in social science and English classes, they are asked to digest and comment on material they are presented with. The math and science “problems”, meanwhile, are not actual problems but relatively simple questions with a pre-defined answer.

Teachers rarely ask students to use knowledge and skills learned in the course to solve real problems, or have students solve problems as ways to learn new things, or even explicitly teach problem-solving strategies.

Hands-On Learning

Students spend most of their days in their seats, either copying notes from the board, listening to someone speak, completing handwritten assignments, or reading something. They are usually only passively engaged in the experience of school, except when they are given an opportunity to participate in class discussions or asked to submit work. The work they do generally does not require much creativity, or if it does it is creativity that is limited to the scope and boundaries of a particular assignment. In science classes they are usually taught more theory than practice, and the experience of doing any actual science comes well after the subject has been explored in a lesson.[2]

Of course, no matter how familiar this hypothetical school may seem, many excellent teachers and schools have achieved effective learning in classroom settings – learning that has some or all of the characteristics listed above, or other characteristics that have produced results. However, the point is that the fundamental structure of schools seems to be biased towards the complete opposite of good learning. Why treat all students the same when they are so different? Why make them sit in rows of desks in front of teachers if large-group lectures are known to be one of the least effective teaching strategies available? Why keep young people sitting still when they have boundless energy and curiosity? Why keep them contained within insulated institutions when we expect them to learn about the real world? Why force them to fit into a system over which they have not the slightest amount of control? And why do good learning activities seem like the exceptions to the routine? In other words, if we know how to achieve good learning, why do schools still work the way they do?

The best way to answer this question might be by answering another: If school isn't designed to produce good learning, then what *is* it designed to do?

What Schools Look Like

There are two simple ideas I had heard before starting my education career which resonated constantly when I started teaching teenagers. The first was that our society has artificially prolonged childhood beyond any reasonable length of time. As a teacher of students in twelfth grade, I had complete authority over students who were between sixteen and eighteen years old – people who at other times in human history (and in many areas of the world today) could have started a family or a career years earlier.

This perspective affected the way I dealt with “misbehaviour” in my classroom. Sometimes, when one of my students refused to work, or talked during a lesson, or spent too much time in the hallway after asking to go to the bathroom, I found it much easier to empathize than to get angry. I would imagine how I would feel and act if

someone forced me to sit in a high school class for an hour every day. Suddenly, students passing notes around while I talked about Newton's Laws didn't seem so bad.

The second idea was this: the only institution in our societies that is even remotely similar to the education system is the prison system. Students and prisoners are both legally required to be in a certain place. Neither has any real control over their own environment nor any say in how long they will be held in their institution or what they will do while they are there. School is commonly thought of as a job for kids, where instead of getting paid, you get to learn; the job of a student is one which you neither choose nor apply for. You do not get to decide what work you do in your job. You do not get to quit. You do not, in fact, decide much of anything about any minute of your day except for brief lunch breaks. You have no self-determination at all. This isn't a job, it's imprisonment.[3]

There is a risk here, of course, of sounding like a naïve young teacher who just feels bad for the kids. In no way do I intend to unduly dramatize the plight of students, nor to minimize the experiences of prisoners. And this particular jail happens to be staffed by professionals who are almost uniformly kind, generous, intelligent, and sincerely dedicated to the well-being and betterment of their students. I had my share of horrible teachers while making my own way through the school system, but once I became a teacher, I was surprised by how strongly my colleagues cared for the young people under their supervision – even those who had reputations among the students as being cruel or bad-tempered.

However, just as the Stanford Prison Experiment[4] showed that people put into certain positions may begin to assume the psychology of that role, teachers are asked to act as prison guards every day for the hundreds of students in their schools and therefore must become prison guards. Fights need to be broken up, classrooms need to be kept quiet, weapons need to be confiscated... One of my least favourite duties was to patrol the aisles at assemblies: the students were herded into their rows of seats and not permitted to talk or eat or leave, and we teachers had to watch them like hawks to make sure they didn't.

And just as teachers are forced to act as guards, students inevitably fill the role of the unwilling prisoner. Teachers shouldn't be surprised that “behaviour problems” are a constant feature of almost every classroom, even at the higher levels – they are a natural result of the situation we are putting our children into. Most of this behaviour is merely a byproduct of completely understandable frustration.

Prison has a number of possible purposes, whether morally justifiable or not: confining people who would otherwise be dangerous to themselves or others; reforming criminals into good citizens; and providing a kind of revenge by punishing those who have hurt us. While some believe that the prison system achieves these goals, others argue that it does not, that prisons are inhumane, perpetuate social injustice and do more harm to our society than good.[5] No matter what the answer, both the purpose and fundamental nature of prison are more openly and honestly discussed than those of education.

Preparing For The Real World

One perspective on education not yet addressed is that it is a long training session for the real world. In this view, students don't just learn a basic set of information and skills; they also learn a moral code – from kindergarten, when they learn to share, to high school, when they get suspended for plagiarism. They learn how to interact with strangers, make friends, fit in, behave according to a set of rules, defend themselves against psychological and physical bullying, manage stress... In short, we expect school to socialize our children so that by the time they graduate, they are ready to get jobs and husbands and wives, to shop and vote and generally act like members of society.

If that is indeed the primary goal of the education system – and it certainly seems to better fit the evidence than the idea of schools as places of optimal academic learning – then it seems doubly reasonable to be concerned about the world of the school, its culture and practices, and, most of all, its shortcomings.

Just as a major issue in teacher education is the fact that the training is often too far removed from the act of teaching, there is another fundamentally baffling question here: Why would we prepare young people for the real world by incarcerating them in a system which looks nothing at all like the real world?

This question is easily answered using the narrative of societal power and oppression. Education may have evolved from complex roots, but today it is unquestionably controlled and administered by those who hold power in our society. Since education is a government-run entity, its power structures inevitably mirror the dynamics of societal power structures, in which oppressed and disenfranchised people have no voice or control and are merely passive participants. In the world of school, power structures are highly hierarchical. Each educational district is governed by a school board or similar entity; each school is controlled by a principal and her subordinates; and, worst of all, each classroom represents a miniature dictatorship in which the only person with real authority is the teacher.

To be sure, there are many teachers who attempt to share their authority with their students in order to foster better learning environments, but even this gesture is, in the end, an illusion: if things go wrong, the teacher always retains the ability to remove power from the students and bring the classroom back under individual control. The students, meanwhile, have been trained for years to follow procedures like raising their hand if they want to use the bathroom. Thus, teachers have to be careful not to seem too generous in sharing power because some students will see this as a sign of weakness and will use the chance to disrupt the learning environment. This is not necessarily mean-spirited behaviour – it is an analogous situation to a guard leaving a prison door open and expecting prisoners to stay inside for their own good.

Meanwhile, as I have already discussed, the people most affected by the education system – those who live within it – have little to no control over the curriculum, the rules that govern their own behaviour, or even the small details of their lives at school, such as when to go to the bathroom, when to eat, and when to pay attention.

The oppression and social injustice common to the outside world are also inevitably reinforced within schools, no matter how well-intentioned teachers and administrators may be. If unemployment among a certain cultural group is high, for example, this means that there is most likely a disproportionately low number of employees from that group at any level in the eduation system, which means less of a voice from that group's perspective in classrooms. Visit your nearest high school and you'll be guaranteed to find content in the textbooks that is racist, Euro-centric, or patriarchal. Honest discussions of gender and sexuality, if they happen at all, will most likely be limited to special gym classes where boys and girls are separated and allowed to ask embarrassing questions.

Again, an obvious defence here is that many schools and many teachers are making tremendous strides in bringing Social Justice issues into the classroom, far beyond actions like changing names in math problems to foreign-language ones or holding Multicultural Days. But, just as with cases of effective learning, these changes are occurring within the bounds of a system which has been designed to keep powerless people powerless, to reinforce social hierarchies, roles, and stereotypes, and to produce graduates who are good at following orders. Small actions, while powerful, are limited in such a context – just as good learning activities are limited within a poor learning environment.

This begins to sound as though a cadre of scheming government masterminds long ago designed an education system that would keep the proletariat in its place and generally maintain the status quo. Although it is true that there have been people who have used education for malicious or at least damaging purposes – such as when thousands of Aboriginal children in Canada were forcibly removed from their families and sent to Catholic schools in order to assimilate them into European society[6] – the actual features I am describing here can flourish in an institution even when the people working inside of it have good intentions. Education, like government or the justice system, has evolved over many years to become what civilization needs it to be: another means for human society to exert self-control.

What School Should Be

The real gap I was experiencing as a teacher, then, was the gap between my professional goals, which were to facilitate good learning and foster respectful relationships, and the actual goal of school, which is a misguided, over-extended, and poorly designed attempt at socialization. However, I don't think this gap needs to exist.

In order to solve the current problems in education, I think there needs to be an understanding that our school system is inherently broken: it is built to fail at both its commonly understood mission, which is to educate, and at its true mission, which is to socialize. One major reason education reform constantly fails to achieve real results, aside from the fact that the school system is, like many other institutions, thoroughly entrenched and therefore impervious to radical change, is that the problems people usually try to fix are in the realm of learning, not socialization. The system resists those changes because of its structure and because a student can be adequately socialized without remembering how to do long division or how to properly structure a five-paragraph essay.

To tackle these problems requires honest analysis of what we want education to achieve. It is an often-repeated idea that we send students to school to improve our world's future. If we want to prepare children for the world ahead, why not create an institution that is more like the world we hope they will help create? And if such a world involves thoughtful, independent, and well-educated people, then we need to consider what kinds of environments would be better suited towards good learning. This is what one such environment might look like:

Self-Directed Learning

From as early an age as possible, students are presented with a variety of schools to attend and/or subjects to study. Within those subjects, they are given reasonable flexibility in terms of timing and specific subject matter – they may return to topics that

interest them, choose from a selection of books to read in English class, and so on. The timing of each day is determined in discussions between the student and teachers.

Grades are abandoned in favour of any number of other assessment systems, such as a resume format which lists a student's successes throughout their academic career.

Students are given the option of leaving classroom-style education early to complete apprenticeship and internship placements at workplaces of all kinds. The education system is open to students of all ages in order to foster lifelong learning.

Differentiated Instruction

Students may approach learning through a variety of techniques – from one-on-one instruction to watching recorded lectures to reading. Learning can occur at each student's own pace, as teachers work with the students to help them keep them on track.

Relevance

As students have more input into what they study, the things they learn are more often relevant to their own lives and to the world around them. Students still learn historical information but are also immersed in current events and developments in a variety of subjects. They don't just watch politics, science, or literature happen but are engaged in them. Schools are no longer treated as extended daycare facilities but as active participants in the community. Curriculum content is determined locally with input from all community members, including students.

Problem Solving

Students at such a school are presented with real-world problems, either from within the school environment or from without. They present opinions on current events in magazines and newspapers, they tackle local and international civil

engineering projects, and they routinely work with various local community organizations.

Collaboration

As this school becomes more and more connected with the community around it, collaboration follows as a necessity rather than an afterthought. When students tackle serious and complex issues, they need help from students of other ages, interests, and abilities, and from people outside of the education system. Working together in this capacity is both more natural and more productive.

Hands-On Learning

As students become more active in their own learning and in the community around them, teachers are freed from the need to produce as many lessons to be delivered to large groups of people. Students can then work with teachers and use problem-solving skills to gain access to the materials they need to learn.

Already this school sounds like an environment where students are positively empowered to learn, to grow, and to help those around them. This description may sound impossibly idealistic, but there are already schools that have started to achieve some serious change in this direction, despite being still stuck within a system that makes this kind of reform difficult. Imagine what kind of a future – what kind of a world – we could produce if we began to build a new and fundamentally different education system. Unfortunately, it is not until the world of schools is discussed with any honesty that such change can ever be possible.

1. Below is a selection of online articles which reference some or all of the characteristics I have listed:
    - Edutopia has a wealth of information about good learning (of particular interest is their "Schools that Work" section): http://www.edutopia.org/
    - Educational Leadership Magazine on Assessment For Learning, which involves students in the assessment process: http://www.ascd.org/publications/educational-leadership/nov05/vol63/num03/Classroom-Assessment@-Minute-by-Minute,-Day-by-Day.aspx
    - Scott McLeod, an advocate of technology in classrooms and an Associate Professor in the Educational Administration program at Iowa State University, covers many of my selected characteristics on his blog: http://www.dangerouslyirrelevant.org/
    - Brown University's Annenberg Institute for School Reform lists studies of small schools and finds that they succeed, in part, because they achieve good learning that has many or all of the characteristics listed above: http://www.annenberginstitute.org/WeDo/Mott.php
    - A study from Stanford University arrives at similar conclusions: http://www.srnleads.org/data/pdfs/reinventing_hs.pdf

2. A related video is Ken Robinson's TED talk entitled "Schools Kill Creativity": http://www.ted.com/talks/ken_robinson_says_schools_kill_creativity.html

3. This idea is explored in the documentary "The War On Kids": http://www.thewaronkids.com

4. Many aspects of the Stanford Prison Experiment are controversial: it has certainly been called unethical, but the conclusions reached by the professor who ran it are also widely questioned. A similar experiment, undertaken perhaps more rigorously and whose outcomes were published in scholarly journals, was later performed by the BBC. This latter study produced very different results. However, both studies show that it is indeed possible for the psychology of an adopted role to be internalized.
    - Stanford Prison Experiment: http://www.prisonexp.org/
    - BBC Prison Study: http://www.bbcprisonstudy.org/

5. See for example:
    - The Centre for Social Justice: http://www.centreforsocialjustice.org.uk/default.asp?pageRef=208
    - Critical Resistance: http://www.criticalresistance.org/article.php?id=51
    - PrisonJustice.ca: http://www.prisonjustice.ca/politics/abolition_alternatives.html

6. The Assembly of First Nations provides more information about the Canadian Indian residential school system: http://www.afn.ca/residentialschools/resources.html