

Education at the Crossroads

The Restructuring of Education, the Future of Employment and the Challenge to Education

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Synopsis

Fundamental structural changes are occurring in our society - changes that are affecting virtually every aspect of our children's lives. As a result, public education is at a great crossroads. This presentation asks a simple question - what is the purpose of schools? To answer this, the presentation examines the current expectations for education from the perspective of students, teachers, parents and the community. It then examines emergent trends that have transformed the workplace overnight, and identifies the new basic skills that are required for even entry level employment. It then outlines the gap between where the Dotcom/Millennium generation is and where they must be in terms of technical, personal and workplace skills, attributes, knowledge, attitudes and behaviors; and identifies how we can modify our existing paradigms of schools to get from where we are to where they need to be. This presentation flows directly into the separate New Horizons presentation.

Our job today

Is to show that as we move into the 21st Century, mental issues are foundational to our future. What we plan to do is to challenge your assumptions about learning, to describe the new skills needed for the modern workplace and to suggest some significant changes to what we teach students and how we teach them.

Let's start by asking some simple questions. What is the primary purpose of schools? Is it to prepare kids for college? Is it to prepare them for life? Or is it to prepare them for employment? Or are these one and the same? Let's start to answer these questions by examining the current expectations for education

What do kids expect?

In a recent survey directed by Dr. John Walsh, from the University of Guelph, grade 11 and 12 students were asked what their future plans were after they graduated from high school.

45% indicated that they would be going to university; 25% indicated they would be heading to college; 9% planned to get a job; 4% intended to enter an apprenticeship; 14% were undecided and 3% gave another answer. A full 74% of students surveyed indicated that they planned to move on to some form of post-secondary education.

Where did they get this?

These are very interesting results. One question we could ask is why there is such a skewing towards university? The answer is to ask exactly who counsels these kids?

Where do kids get advice on schooling/careers?

In the same survey, Walsh reported that 34% of students received their school/career advice from school; 24% from family members; 16% from calendars; 5% from friends; 3% from media and 18% other.

What do teachers expect?

Teachers typically and naturally hold up the goal of post-secondary study as the ultimate success. Why? Because they were altered by their own educational experiences.

What do parents expect?

In the same survey, Walsh interviewed parents on their expectations as to what their children would do when they graduated from high school. In the survey, 54% indicated that they would move on to university, 26% to college, 6% that they would get a job, 3% that they would move into an apprenticeship program, and 11% were undecided or uncertain. In total, 83% of parents surveyed indicated that their children would go on to some form of post-secondary education.

The Polaroid snapshot test

Our ideas about school tend to be fixed like a photograph. Stop and consider - what were the expectations when parents and teachers went to school? What were they pushed to aspire to? What was the primary role of school for them?

It wasn't work, but university. Often parents and teachers don't want to hear about other options. Why? Because it worked for them, so the assumption is that it'll work for their kids. Thus, the most powerful motivation of the educational system is fixed and fixated on snapshots of the past.

What's wrong with this picture?

What really happens? Statistically, where are we really? According to Walsh, by the time they're 30, 12% of student will have a graduate degree, 16% an undergraduate degree, 8% will have completed a 2 year program (as an aside, that's equivalent to high school graduation in many other parts of the world) and a staggering 64% do nothing beyond high school. There appears to be a huge contradiction here.

What is the primary purpose of education?

It's to prepare kids for both higher education and the world of work. As it stands, we do a pretty good job in preparing students for higher education. But what about the 64% who go directly or indirectly into the workplace? Do we adequately prepare them for the entry-level

What skills do farmers need today?

A farmer in America, the hero of the agricultural economy, rides in a portable office on his tractor. It's air-conditioned, has a phone, a satellite-driven GPS location device, and sophisticated sensors near the ground. At home, his computer is connected to the never-ending stream of weather data, the worldwide grain markets, his bank, moisture detectors in the soil, digitized maps, and his own spreadsheets of cash flow. Yes he gets dirt under his fingernails but his manual labor takes place in the context of a networked economy. And the skills he needs are very different than those needed by farmers even a few years ago.

What skills do truck drivers need today?

Much the same can be said about the changing role of truck drivers. While the experience of sitting behind a wheel still requires good eyesight, a knowledge of the laws of the road, manual dexterity to make repairs to the truck they drive and general knowledge remains relatively unchanged, there are also the new tools of trucking - bar codes, radios, dispatch algorithms, route hubs, data management systems, time management systems, global positioning satellite systems and even the roads themselves all follow the logic of networks. Why- because companies increasingly use zero based inventory, just in time delivery and computer integrated manufacturing where products must be delivered within 30 minute delivery windows

What skills do mechanics need?

The historic approach was that mechanics used a 12-pound persuasionometer along with wrenches, screwdrivers and grease guns. Increasingly, mechanics are highly skilled people familiar with computer controlled electronic circuitry, Wide Area Network for diagnostics, electronic manuals, and specialist skills to deal with the daily configuration of electronic manuals. Increasingly, mechanics are problem solvers capable of stating technical problems, and using high levels of information literacy and numeracy, along with excellent skills in technical reading, interpretation and application to access and search for the answer to problems

What about the information industry?

Today in the information industry, 44% of all workers and 20% of all paid hours are paid for keyboarding. Consider the impact that PC's have had to date on the information industry. And now, it's about to happen again. Consider for a moment the impact of pen-based and voice input technologies. There is a real danger that a whole sector will be left behind with outdated skills

This is just a glimpse of pervasive trends. This story repeats itself again and again in almost all areas of the economy - for banking, restaurants, medicine, the fast food industry - the future will certainly not be a natural extension of the past.

In a devastating book written by management guru Tom Peters entitled *The Brand You*, he noted that in 1970 it took 108 workers 5 days to unload timber ship. Containerization and mass automation mean that today it takes 8 workers 1 day to do the same thing

Peters asserts that the same trends will deconstruct the white collar world - that 90% of white-collar jobs in the US will be either destroyed or altered beyond recognition in the next 10 to 15 years. That's a catastrophic prediction, given that 90% of us are engaged in white-collar work of one sort or another. Even most manufacturing jobs these days are connected to such white-collar services as finance, human resources and engineering.

If we can acknowledge that the world is changed, and continuing to change, what are schools doing about these dramatic changes?

Many educators recognize the need for change, but educational change tends to happen incrementally, while the world seems to change exponentially. So where do we begin?

Defining the gap

Where are we? We can't just talk about the incremental progress made to date. We must also talk about the increasing gap between where kids are when they leave schools and what's needed in an increasingly interconnected, technological world. Because the gap between what students leave school with and what they need is getting bigger every year, despite our very best efforts.

Why is this happening?

It's because we suffer from cultural schizophrenia. There are substantially contradictory expectations. Parents want kids who are ready for job market but don't want schools to change. The multiple expectations for education have exceeded our ability to deliver the goods. But there is little awareness or understanding of this by parents.

What must we do?

We must let the public know about the existing gap or run the risk of continued erosion in confidence in the school system because increasingly the end product just isn't very marketable. This is something that is very hard for most educators to understand.

It's a changing world

We are dealing with change as a constant today. It's not just that our world is changing but that our world has changed. This is hard to understand or accept because change doesn't happen all at once, it's subtle. We know things have changes, but it's hard to put a finger on exactly HOW it's changed. The US has been at the top for so long that we tend to take it for granted we'll always be there.

Defining the problems

First we must deal with the lack of relevancy. There is a huge gap between what's learned in our classrooms and how it's learned with how things work in the modern workplace. The school curriculum continues to be highly theoretical. Our tests must measure not only theory but also

must become synonymous with higher level thinking. To do this, we must move to a far more application-based curriculum

Next, we have to deal with a tale of two visions. We must modify the primarily academic purpose and go beyond just preparing students for college to the development of the series of relevant skills that are needed in today's workplace and society.

Schools have two major purposes - academic excellence and preparation for the world of work. We must acknowledge that the Dotcom generation lives in a different world. That today's students live in a culture that is fundamentally different than ours. Beyond this, they will function in a workplace and general society that is fundamentally different from that of 20, 40 or 60 years ago, yet the curriculum is basically the same as that of the 30's.

Then we must redefine the who, what, when, where, why and how of schools. Why? Because the skill levels needed today are higher and very different from those traditionally taught. They are also very different from those required to succeed at the post-secondary level. Yet despite this, we continue to focus on higher education above all else

So what can we do about this?

How do we narrow the gap? This is where the yabbits begin! Readiness for college has been the benchmark for most educational decisions as well as the definition of success for more than 50 years. The problem here is that schools, business, parents - in fact, pretty much everyone - wants something different or more. In today's world, we need to teach a different set of skills. These are the skills needed to function in a workplace that has been transformed by technology and globalization. These are not just different skills but skills with greater levels of proficiency than those needed for higher education. These are very different skills from those now taught.

How do we prepare children for their tomorrows?

How do we go beyond just what's needed now to what will be needed in the future?

To begin, we must recognize the magnitude of the task. This is not just about meeting or even exceeding state standards. It's about a commitment to teaching all of the attributes students will need to function in a technological, info-based society. A far broader set of actions is required here .

Defining what's needed

We must begin by identifying the attributes and levels of competencies needed that are needed. This is not just at the comprehension level but at the application level. To do this, we must start by examining our curriculum and considering what students need to learn.

So what should they learn?

Thinking Skills

The new curriculum involves critical thinking, problem solving, applied reasoning, information processing, new communications skills such as speaking and listening.

Technical Skills

It includes new technical skills such as technical reading and writing, the ability to apply technology creatively, applied sciences, applied maths, applied language.

Personal Skills

It requires new personal skills such as goal setting, self assessment, organization and time management, change readiness, stress management, digital entrepreneurship, marketing and self marketing.

Workplace skills

It demands being future focused, being trend aware, an understanding of the global marketplace, being able to working and learn in teams.

To do this requires very different focus than we currently have. Intellectual development is critical to personal development, but by itself, intellectual development doesn't prepare kids for the world they'll live in. To succeed, students must be more than just intellectually capable. The curriculum must also bring relevancy to the world of work. This is not an either/or situation

Where are our schools today?

The present school system is increasingly irrelevant to today's technological and information-based society. This is the primary reason students have difficulty moving from school to the world of work. It's also the reason our economy and workplace is in a state of constant upheaval. Will things ever stabilize?

Where are things heading?

Thinking back to what Tom Peters predicted about tomorrow's workplace, the question that needs to be asked is how will our students survive as adults in the culture of the 21st Century? To address the issues, we must rethink our schools. To this, we must begin by stressing that we must never give up the dream of being good citizens, life-long learners, family and members. But if that's the only focus that our schools have, students will still be functionally unemployable in the existing global economy because basic skill levels will still be too low.

So where do we begin?

The starting point is to help others understand that it's a new world out there and that change

Your job is to recognize and internalize this. Otherwise you won't begin to undertake the necessary change process that's required. Start by communicating to others the fact that despite standards, technology, and a variety of others changes, our schools are not as relevant or effective as we've spent many years trying to convince community they are. This will be a bitter pill to swallow.

Beyond this, there's no quick fix! Short-term solutions inevitably lead to long-term problems. Unfortunately, we've grown up with a fast food mentality, which compels us to seek instant recognition, instant profit and instant remediation to life long problems.

Rethinking the curriculum

We must view learning as a continuum of instruction rather than a series of discrete events. We must end the assembly line, departmentalized model of teaching and learning and place far more emphasis on a unified, integrated continuum of instruction rather than a series of independent, unrelated courses. We must go beyond theory and focus on practical applications that are relevant to workplace rather than mutually exclusive and theoretical subjects that prepare students for yesterday and today, not tomorrow.

Where do we begin?

Start by standing back. It's time to step back from our traditional thinking about learning and rethink schools, classrooms, curriculum, evaluation, the roles of teachers & learners and particularly, what it means and what it will be mean to be learned in the light of the modern changing world.

In the 21st century, everything from the neck down will be minimum wage

Bob Hughes

Our challenge is not just to do things differently....it's also to do different things

David Thornburg

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