

Shifting Gears: Content to Process

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Summarizing the sermon

- we are living in different world
- where education is based on the wrong premise
- we need to re-define basics of education
- we need anew conceptual model for instructional delivery
- focus of this presentation is on how we bring about fundamental & meaningful shift

Education is under siege:

- by the enemies of system, back to basics zealots, those with personal agendas, short-sighted politicians, drive by critics and the media - all appear to be feeding off our seeming paralysis

What's really happening?

- we have been asked for many years to be more than academic institution - we have a much broader curriculum, we are also expected athletic, social, surrogate parents - at the same time, how many things taken out of the curriculum
- yet despite this, IQ scores are up, graduation rates up, SAT and NAEP scores are up, and participation in AP courses up
- yet there is still increasing pressure to change - we have to stop and ask ourselves why this is happening?

So what's the problem?

- schools operating from wrong premise - they mirror the industrial mindset of scientific management where only 15% are managers who think - these individuals have the broad conceptual skills - the rest are the blue collar followers who work on the assembly line
- here the job is to break tasks into to sub-tasks - the workers are specialists who don't need to know the bigger picture, only their details - over time, they become machine-like

The assembly line

- this mindset does not just apply to the assembly line - the same principles have been used to manage banks, department stores, insurance companies and schools - ever heard anyone say, that's not my department!

- the skills that were valued were punctuality, obedience, following orders, and memorizing procedures
- inherently, the message was - don't think - just do

Industrial Age schools

- mirrored the businesses of time - the school modeled assembly line
- as teachers we all have a huge personal investment - the mindset is woven into the very fabric of our being
- we were taught punctuality and rote memorization as the measurement of intelligence
- it was truly a form of informational bulimia - we were asked to suck up and then spew out the content based curriculum
- we lived in a world of informational & organizational compartmentalization - our teachers passed this mindset on to the next generation as many of our colleagues our to our next generation
- using this model, teachers are specialists and students are products
- students are sorted by intelligence not to actualize their full personal potential of each student - this is because in the Industrial mode, only 15% moved on- they were the only ones who needed to think - this was a perfect fit for the scientific model - it prepared students for workplace in the right proportion needed to drive economy
- this is the native language of most teachers who have invested their lives in acquiring the skills & resources needed to support this premise - now being asked to change - why?
- the problem is that this generation of students is the best educated in history yet it still isn't good enough - even though they are the best educated, they are the least prepared - we have to ask why?

Because the world has changed!!

- in the 70's, there was an unanticipated explosion of microelectronics into our lives - if you don't believe this, how many of you took a course in microelectronics or computers while you were in school - this explosion has had to a fundamentally new workplace
- the bottom line is that the world is not changing, the world is changed - just look at business to see this - businesses just aren't like us any more but this has happened in fast forward - because the changes of the past 20 years are greater than those of the last 10,000 years - we have had exponential growth in power & productivity of a scope & scale that is hard to comprehend

Putting it into perspective

- up until the time we made the agriculture to industrial shift, we had beast of burden agriculture - from buggy whips to plows a great deal of time, effort and money had been expended to support this mindset
- then along comes the Industrial Age and with it, mechanization - the tractor gave productivity gains that were so substantial that they simply couldn't be ignored - thus the number of farmers needed to feed the population went from 85% to the workforce to less than 2% in 100 years

New skills for new age #1

- this led to a new set of skills, knowledges and industries needed to support mechanized agriculture - what happened to those who had invested heavily in beast of burden agriculture?
- for them it was the end of an age! They had to change or become irrelevant because the new methods rendered the old ones ineffective
- this was devastating for many - change was hard to accept because what was valued, wasn't anymore - it wasn't that the workers had bad skills, they just had the wrong skills for the mainstream of economic activity

What happened to schools?

- the profound changes in society led to new demands being placed on schools - they had to shift gears as well because the schools needed to mirror the age - this meant a new curricula - shops & trades courses and sciences focused on principles behind Industrial Age equipment

It's déjà vu all over again!

- the productivity gains of the new microelectronics-based technologies are quickly rendering Industrial Age skills irrelevant & ineffective - but the change has been systemic in scope & scale - and it has been compressed into a decade not a century
- what's happened to world of work is that we have had an inversion of old values - overnight we've gone from a world of relative status quo to constant change, we've moved from a local to a global economy, we've moved from investing in things to investing in people, from workers who follow orders to workers who think for themselves - from those who punch a clock to those who work any time and those who commute to work to those who telecommute to work

Moving from a labor force to mind force

- banking then and banking now - ATM's, home cash machines, one stop shopping
- truck drivers then and truck driving now - what skills were needed what skills

today? - just in time delivery skills, data processing, time management, problem solving - independent entrepreneurial skills

- clerical work now and in the future - what are the implications of voice print, computer based voice interpretation and automated interpreting telephony

It's the end of an age #2!

- just like the farmers of the agricultural age were forced to change or die, we are moving to an Information Age - and once again, the message is change or become irrelevant! Because once again new methods rendered old ineffective - but change is hard to accept because what was valued, isn't anymore

We are being confronted by profound change in society

- consequently there are new demands being placed on schools - schools must mirror the new age and shift gears once again - this is the reason why even though we do a good job - it's just not relevant to the futures of our kids
- the inversion of Industrial Age values must be reflected in schools...

New schools for new age #2

- we must move from rote memorization to understanding processes, from following orders to solving problems, from theory to application of theory, from teacher dependent to learner empowered students and from learning in youth to lifelong learning - our students can anticipate that they will have 5 to 7 distinct careers in the life time, so preparing them with a job for life mentality simply won't do

Why?

- if change is constant, everything is unknown - we have moved to the age of fundamental uncertainty - we moved from an age of educational interpolation to educational extrapolation - from preparing students for jobs we know..... to preparing students to solve problems they have never seen using technologies that have not been invented in jobs that have not been created
- this is happening - but most of our colleagues simply haven't realized or acknowledged this yet
- there are three kinds of people - those who make things happen - those who watch things happen and those who say - what just happened?
- this stuff is coming at us hard and fast - this is why you need to be evangelists and change agents - we need shift gears in schools - this just hasn't happened yet.....

21st Century learning

- this is why education is under attack - this is the reason for paralysis - because instead of shifting gears education has simply painted the car, put more air in the tires and continued on merry way

Thinking in future tense

- if world is changing rapidly, can't just focus on world of today - we have to live life like a quarterback - we must see the present as the past of future
- just look at the World Wide Web - it's doubling every 54 days - 6.89 times per year - at that rate, 99.13% sites that will exist in a year don't exist today

We need a new curriculum for new age

- a forward looking curriculum to the skill base for future graduating classes - a curriculum that adapts to an environment of accelerating change - a curriculum that makes the shift from a strictly content based content driven curriculum to a process-based curriculum - it just doesn't work in an age of disposable information - rapid & rampaging change - think about auto mechanics who can no longer use the Industrial Age approach of memorizing procedures in an age where cars are re-configured semi-daily
- we live in an era of just in time learning where only thought processes remain so how can we go back to the basics?
- some skills we currently teach will remain - the process of Reading, the process of Writing, the process of Mathematics
- but we also need to give them the process skills needed to empower students to solve problems we didn't teach them - we call this PREP

P - problem solving

- foundation of all curriculum - in past, we used osmotic, proximal learning model based on content - students pick up what we focus on but without a context there is no meaning - it just becomes an irrelevant exercise quickly forgotten
- problems provide context for learning - we need to use a 4 stage problem solving process OF defining the problem, designing a solution, developing the solution, and determining how effective it has been
- students must be owners of their own learning - we must move them from a culture of dependency to a culture of self-reliance by invoking a fundamental policy of progressive withdrawal

R - real world link

- this is an extension of problem solving - we need to give students real world problems using real world tools - they need to have opportunities to make real

time decisions - they need to think holistically with a curriculum that moves beyond the assembly line mindset

- they need to use technology as tool and learn to let go of what - technology does better - for kids today, the focus has to be on the task not technology - where learning about technology becomes an essential by-product of the learning process
- students need technical reading & writing at a high level of integration in all subject areas & all grade levels - they need to have opportunities to experience decision making using incomplete information - like buying a house
- they need information literacy skills and the ability to ask critical questions, access information, apply the information to form knowledge, apply information to real time, real world situations, and to be able to critically assess the learning that has taken place.
- what world are we preparing them for - their's or our's - we just can't retreat to the imagined perfection of Beaver Cleaver in a time of Beavis and Butthead - unfortunately many in a position to make the difference have a fixation on past - so the question becomes, are we going to go back to basics or forward to the new, revamped basics needed to reinforce the school to work transition

E - entrepreneurial skills

- the age of big business & big union are gone forever - 80% of all new jobs today are in companies of 8 or fewer - our students can look to a working life of 5-7 careers - there are no more jobs for life so we must focus on the new personal skills that are needed for the environment of unrelenting change that our students will have as they spend their lives learning a living
- they need the following skills: goal setting, self assessment, time management, stress management, intuition, the ability to think creatively, they need to value stupid, crazy, off wall ideas - they need to understand the principal of useful failure and to understand that failing is good, they need the survival skills for a competitive environment, communications skills, marketing skills, presentation skills, financial management skills, customer service skills and negotiations skills that will be an essential part of their working lives

P - people skills

- they will need team learning & working skills, speaking & listening skills -but taught explicitly
- all these are the critical skills needed to be effective member of a family, community, business and these skills will be needed by many not just the few

Making the shift

- we must move beyond content driven curriculum - we must move to process driven empowerment - the new work force reality requires all workers to have higher level thinking skills
- everyone pays lip service to Bloom's 6 levels of thinking - Awareness - Understanding - Application - Analysis - Synthesis - and Evaluation
- where are we at with this in our curriculum? the bottom line is that very few ever get there - what students do learn is mostly low level content with little application because we have always had trouble getting curriculum to the higher levels of thinking
- so we need a second scale called the application scale that links learning to world of work and moves from knowledge of 1 discipline to application of knowledge within discipline to application of knowledge between disciplines to application of knowledge to real world predictable problems to application of knowledge to real world unpredictable problems
- we must appreciate that application is higher level than theory in that you can't apply something you don't know how could this work?

Making it happen

- elementary example - not presentation about animal behavior - put kids in charge of designing a pet store
- what animals? what's needed to house them? what's needed to take care of them? where will cages go? In the process did they learn the content and if they forget the content, will they have learned anything of substance?
- they learn process skills in problem solving by applying content in the context of the task
- a secondary example - the water system in town is failing - will take 3 years to replace the system - students must make a presentation to City Council for interim plan to maintain water supply while the new system is being built
- what are you teaching? - Math, English, Science, Technology?? All of the above - but did we teach them content? Yes! - in the context to real time, real world situations - if they forget the content, will they have learned anything of substance?

In Summary - we need to shift gears!

- the shift from content driven curriculum to process driven curriculum doesn't have to be scary - you don't have to throw away all material you have developed over years - the first step is that you must step back - must shift gears - you must put that material in a new problem solving context
- the bottom line is that the grace period is over -we just can't allow outdated

institutions to proceed at snail's pace into future zooming ahead at speed of light
- as a result, the gap between school and the world outside is already stretched
to limit - the thread connecting many of schools to society's needs about to
break

- as educators, our job is not to serve what is, but to shape what can & might be -
we can do this by reinventing curriculum, reinventing pedagogy, and reinventing
schools - otherwise we face extinction
- change such as this can be absolutely overwhelming - but never doubt that a
small group of committed people can change the world, indeed it is the only thing
that ever has

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