Technology and learning: building capacity - managing change

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9th International Conference on Information

TECHNOLOGY AND LEARNING:
BUILDING CAPACITY – MANAGING CHANGE

Abstract

Global economic and development changes and challenges are fast and furious. The pace of change is requiring nations to produce a faster, smarter and better caliber of human being, not just a few in numbers but entire communities of such individuals. Our current systems of human development are impeding the rate at which this should be happening. Future education systems, some of them already in the making, have to be designed from policy to practice, exploiting the full potential of technologies for nation building, social inclusiveness and economic benefit. At the same time those in charge of managing these technology driven systems will require new skills, knowledge, and insight. They also need to develop new partnerships and be prepared for greater accountabilities and transparencies. This paper deals with the changes and challenges required in the practice and provision of education with the constant arrival of new learning technologies into the learning environment

12-13 August 2009

TECHNOLOGY AND LEARNING:
BUILDING CAPACITY – MANAGING CHANGE

Introduction

1. We are just beginning to understand how much more we need to know and understand– about the effects of globalization on the economies of the world and the well being of the world's peoples; about the complexities and influences of cultures and religions, and the differing if not conflicting perspectives of our enemies and even our friends. In the aftermath of the Asian financial crisis of 1997-98 and the more recent financial calamities of 2008, the September 11, 2001 terrorist attacks, the continuing concern of corporate greed, the uncertainties of the good and the bad of genetically altered food, the challenge of continued abject poverty, the unscrupulous use of child/slave labor, the danger of communication limitations, unhappiness over international monetary and debt policies, the fear of major and unknown health crises, the callous abuses of the ecosystem, worries about an unsustainable development, concerns about social inequities, racial, gender and ethnic discriminations and the continuing conflicts in many parts of our neighborhoods requires citizens to be engaged with the rest of the world more than ever before. In this our schools, colleges, universities and all other institutions of our educational systems must play an important role in a variety of ways because global changes and challenges and educational policies and systems are inextricably joined. Yet our current education system is a throwback to the methods of schooling developed during the Industrial Revolution. In many cases, the techniques our teachers use to interact with and impart knowledge to our students are embarrassingly outdated as are the substance and design of our curriculum.

2. I am humbled by your invitation to deliver this key note and as is my habit when using platforms such as these to be reflective and sometimes to ask inconvenient questions. For this morning I take my cue from the educator and author Neil Postman who in his book in 1996 The End of Education, [Vintage Books, New York.] in 1996[1] said in thinking about new technologies that like the other technologies before, the new technologies do change things; sometimes these changes are simple and at other times, profound. As we consider the impact of these technologies on how our education should take shape to serve the current generation of learners, it is worth remembering some things that Postman said such as that *the new technologies bring both advantages and disadvantages. These advantages or disadvantages are not evenly distributed among the population. This means every new technology benefits some and may sometime harm others.* We need to find ways to reduce the latter and increase the former. As Postman points out further, *a new technology do not merely add something, it changes everything.*[2]

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[1] Neil Postman [1996] The End of Education. Vintage Books, New York.
[2] Ibid

3. In order to benefit from the new opportunities technologies bring to our environment without compromising on our mission as educators and to be socially inclusive, at the same time, we have to reassess our methods, means, structures and the use of our resources. This would mean looking at policies, practices and perceptions. Herein is the dilemma for Malaysians as they consider how best to benefit from these fascinating new technologies that are becoming increasingly ubiquitous. Consider what the new technologies permit us to do:

- *Freeing classrooms from time-bound regimes*: The technologies and the knowledge we have today permits us to deliver learning at any time, 24 hours a day. However our policies, prejudices and the comfort of current practise *holds learning a prisoner to time constraints applied by an arbitrary force [i.e. government regulations] or by the preferred work schedule of an institution, faculty or individual academic. A new learning paradigm where **learning** becomes the primary driving force and, since learning can occur at any time and at any place 24 hours every day, the constraints of time can be removed.* Our institutions and learners need not be ruled by time with prescriptions as to when, in his/her life, a student can or is ready to learn and the length of time required for learning. Technologies that allow us to learn 24/7 will require us to seriously reconsider the "time-driven" element from today's schools, colleges and universities. The question for us: does present policies impede our institutions from offering and recognising the maximum possible flexibility that can be incorporated?

- *Re-examining the campus-based delivery system*: The traditions of teaching and the views on learning have resulted in organisational structures that are almost or completely centred on faculty: from the design of the curriculum to its transformation into learning experience; from decisions relating to assessment of prior learning to elements of exit standards; from administrative arrangements to academic governance; and from delivery systems to learning schedules. This is not compatible with what can be experienced by the learner with access to and knowledge of working with technologies - learning can take place at the convenience of the learner -- does policy allow this?

- *Re-examining the role of academics*: Ways must be found to overcome the perceptions and the fear of faculty to the changing nature of their roles and values as well as the rewards of the new learning environment. There is a real, though unfounded, fear on the part of faculty in losing total control of the teaching and learning environment. This fear manifests itself in many forms. Some teachers express anger at the perceived loss of academic freedom and others express disdain at the 'commoditisation' of knowledge; some express dismay at the possible loss of employment and others worry about the potential loss of quality. Learner centrality in the educational environment does pose enormous challenges to the teacher,

It requires pedagogical skills, especially in a technology-mediated environment which many of today's teachers are either inadequate in or totally lacking. Are we inducting a new breed of academics who are less fearful of the shift in our paradigms?

- **_Re-examining the basis of quality, curriculum, and assessment and credentialing_**: Curriculum, assessment, accreditation and measurement of quality are still based on the history of our understanding on what is good practise and what is not. Many would argue that this is misplaced in today's educational environment and many others would further claim that QA assessments and accreditation have kept up with what is good practise in technology mediated learning and what is not. Quality is critical in higher education but as pointed out at an OECD forum recently, *"there isn't a universally accepted measurement of quality which recognizes outcomes of learning at the level of the University.* Universal measures of quality are difficult to come by and by its very nature, perceptions of quality, do defy clear unambiguous definitions. There is a clear need to broaden our oversight of quality. The present indicators which are frequently used as proxies, viz. staff/student ratio, physical environments, assessment and examination methods, financial expenditure while useful in measuring quantitative targets, have to be complemented with evaluations of learning achievements, improved proficiency in cognitive skills, higher scores in assessments, improved completion rates etc. Some recent studies are saying that quality is not necessarily achieved by merely providing additional resources such as books, better classrooms or other facilities and inputs. Quality educational environment is also dependent on system accountabilities and incentives to motivate learners, teachers and schools that perform well. Further, accountabilities themselves hinge on reliable assessment systems against which performance can be measured.[3]

The Inevitability of Change:

4. Our traditions of learning and teaching have always been about two fundamental elements with an overemphasis on teaching. The transfer of information from the teacher to the learner has been done on a person-to-person basis. The "sage on stage" stands in front of a room and imparts the information for a student to learn. The teacher is expected to be an expert on every topic that is taught. By and large, except for few hundred distance teaching institutions the lecture-style teaching has been used for centuries to build today's literate and competent society. We know these systems are expensive and some would even call them "highly inefficient". For any new topic to be taught, a new expert needs to be created, and this universal need for more and more experts has become a serious chokepoint for learning. There is also the other problem with the way we have

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[3] 17th CCEM dialogue paper, 2009

handled educational provisions; I am speaking about the constraining character of the classroom which simply means that if a person cannot get into a classroom there is no way such a person can get an education. Knowledge economies and societies require mass access to learning and limitations of governed by traditions require rethinking. Correspondence and later distance education using elements of technology and postal systems was an early twentieth century response to remove those constraints. Since then this innovation has gone through changes some significant and others somewhat modest. The significant changes have mostly been about the bringing in of newer and newer technologies; the modest ones have been about system changes particularly in policy, administration and management..

The Changes in the Educational Environment

5. It is becoming clear that twenty-first century education systems will require further changes seeing an even greater transition from a heavy emphasis on teaching to a heavy emphasis on learning. This will be brought about by a much more demanding and knowledgeable population of learners who would be more familiar and adept at using a whole range of technological tools available to them. In parallel to the advancement of the new technologies there has also been a global desire of many individuals and institutions to share especially learning materials free of legal as well as logistical restrictions. There are many reasons for this interest but most importantly six elements seem to have had a significant influence. In an interesting discourse on the future of education futurist Thomas Frey[4] highlighted some eight trends in his personal blog that he foresaw for this interest. I list five of these that have a relevance to your conference and this subtheme. These are:

    *   **Technology explosion:** There is promise out there that we can, within our life time have a [wireless] connected world which has the potential to make every single human being a partner in almost any human endeavour -- learning is one of them. There are already technologies currently available such as virtual reality, holography, compression technologies which can bring a distant classroom into one's neighborhood. This is only the beginning. These technologies can bring home the dreams of many internationalists who have aspired for the borderless movement knowledge.

    *   **Information Explosion:** The amount of information that is moving about today through some 60 million blogs, about 4 million entries in the Wiki, over 4 million books in Amazon, over 100 million accounts in MY SPACE and some 6 million videos in U Tube will continue to overwhelm. Information is exploding around us in every possible form. Yet, we do not have an easy way to translate these blocks of

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[4] Frey, Thomas | | www.futuristspeaker.com/2007/03/the-future-of-education/

information into courseware or solving the problem of managing and transforming the information into knowledge. New and enhanced skills are required by our teachers for a new pedagogy that would see them as collaborators and navigators in learning rather than experts teaching a subject. Coupled with a new generation of students brought up in a world digital entertainment the 'lecture or lesson' as we know it will have to change form, substance and style of delivery.

- **Learning drivers**: Maslow's Hierarchy of Human Needs is a theory in psychology that Abraham Maslow proposed in his 1943 paper *A Theory of Human Motivation*.[5] That theory contends that as humans meet 'basic [survival] needs', they seek to satisfy successively 'higher [growth] needs' that occupy a set hierarchy such as the need to learn, the reasons for wanting to learn and the motivations for learning. Maslow saw these issues fifty years ago: the fact that employees have a basic human need and a right to strive for self-actualisation, just as much as the corporate directors and owners do. Increasingly, the successful organisations and employers will be those who genuinely care about, understand, encourage and enable their people's personal growth towards self-actualisation - way beyond traditional work-related training and development, and of course way beyond old-style X-Theory management autocracy, which still forms the basis of much organised employment today. The best modern employers and organisations are beginning to learn at last: that sustainable success is built on a serious and compassionate commitment to helping people identify, pursue and reach their own personal unique potential. When people grow as people, they automatically become more effective and valuable as employees. In fact virtually all personal growth, whether in a hobby, a special talent or interest, or a new experience, produces new skills, attributes, behaviours and wisdom that is directly transferable to any sort of job role. The best modern employers recognise this and as such offer development support to their staff in any direction whatsoever that the person seeks to grow and become more fulfilled.

- **Transition from consumers to producers**: As we transition from a predominantly passive society to a more active one, people no longer want to just sit on the sidelines and watch. They want to participate. And a whole new generation of tools and equipment are allowing people to shift their role from consumer to producer. This transition began with the introduction of comment sections at the end of online news posts. People began to voice their thoughts on whether or not a piece of news was accurate, timely, or in any way news-worthy. an emerging generation of learners could legitimately wish to contribute to their learning as well as knowledge in a much more active way.

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[5] Maslow, Abraham [1943]; A Theory of Human Motivation. Psychological Review, 50, pp. 370

When Evan Williams and Meg Hourihan's company, Pyra Labs, launched Blogger (later purchased by Google) in 1999, a major shift began in the world of user-generated content for the Web. Suddenly it became easy for anyone to create a blog site, and millions of people began to experiment. In July of 2003, MySpace was founded by Tom Anderson, Chris DeWolfe, and a small team of programmers. As a site that allowed users to generate their own website and connection to friends, MySpace quickly became the dominant player in the emerging category of social networking with the 100 millionth user account created in August 2006.

Similarly, when Chad Hurley, Steve Chen, and Jawed Karim launched YouTube in February of 2005, it became very easy for people to produce and post videos online. As an enormously popular and free video sharing website, YouTube lets users upload, view, share, and rate video clips. As a result, millions of people have transitioned from video consumers to video producers with an average of 65,000 new video clips uploaded onto YouTube every day.

While these are examples of runaway success stories, the world of user-generated content is not without its own set of problems. Each has managed to handle the challenges in their own unique way. But what these examples best illustrate is the public's driving need to participate and lend their own thoughts and ideas to the world around them.

> **Courseware vacuum:** Information is exploding around us in every possible form. Yet, we do not as yet have an easy way to translate these blocks of information into courseware. However, with the emergence of fast, intelligent, inexpensive and high capacity learning technologies we are seeing the beginnings of a new approach to practicing ODL. These new technologies present us with opportunities where collaborating in and sharing of curriculum, learning materials and associated tools/technologies become easily feasible. Such collaboration brings with a whole host of advantages and opportunities from cost to academic credit sharing. In parallel to the advancement of the technologies has also been a desire of many to share especially learning materials free of legal as well as logistical restrictions. The OER movement is a product of these developments and over the last five years has excited and motivated many, for whatever reason, to be part of it.[6] The promise of OER, in many ways not only resides in the resources themselves, but also in developing the conceptual framework and methodological approaches that organize, manage

[6] UNESCO[2008] *oerwiki.iiep.unesco.org/index.php.*

and ascribe meaning to them. Contemporary dialogue and debate on success factors around OER seems mostly around four elements. These are:

- the tools especially software programmes [standards etc].
- the Open Courseware [OCW] development,
- the Reusable Learning Objects and their repositories policy related issues where clarity is required
- availability of human capacities to manage the entire venture and,
- knowledge on costs and benefits of using OERs in a variety of situations.

Until there is clarity around these issues the OER will remain of limited interest in the developing world. It is this that is going to challenge leadership and management as they take their institutions into the 5th generation availability and use of learning technologies.

Building Capacity to Meet the Challenge

6. The skills required to establish, manage, finance and operate a well functioning open and distance education system are well documented in the literature over the last four decades i.e. ever since the British Open University demonstrated the enormous benefits of using an industry like environment to conceptualize, design, develop, deliver and assess learners for formal qualification on a massive scale. The twelve or so open and distance teaching universities of Asia often referred to as the Mega Universities have also created system capabilities to handle hundreds of thousands of students annually. Besides these mega universities there are about a hundred or smaller open and distance teaching universities around the world. Most of them are located in the developing economies of the world where the pressure to increase higher education provisions has been on the increase and the resources to support this demand on the decrease.

7. Notwithstanding the size, whether big or small, distance of conventional -teaching universities all require a few basic essentials to function effectively when they move to a an educational environment that can benefit from the potential of the technologies. These essentials include among other things the following:

   - A clear and purposeful vision for the venture, recognizing especially its weaknesses
   - Knowledge of systems planning and administration
   - Pedagogical skills and know how in curricula transformation
   - Material design and Production
   - Establishing and managing Learning Management Systems

8

- o Processing of and Complying to IPR requirements
- o Learner support systems
- o Programme, curriculum and Instructional design assets.
- o An effective student information system
- o A well designed mentoring provision
- o A good communication infrastructure
- o A well tested Quality Assurance System
- o A well functioning IT infrastructure

8. All of the above simply says that institutions which wish to apply the technologes in their core activity as institutions are dealing with complexities that require experienced and expert hands in many fields working as a team. Very rarely, in the latter part of the 20th century have distance education efforts been successful without most, if not all of the above, listed provisions. This is especially the case in the context of developing economies where because technology is perceived as a cheap alternative to brick and mortar environments, cash strapped ministries of education and or training are embracing DE as a panacea to all their educational challenges without making adequate resource provisions to support the venture. Even those institutions managing mega open universities though accomplished as they are in the application of technologies will require additional skills to handle the many new options that are becoming available today.

Managing Change – Challenge to Leadership

9. Like the other technologies before, the new technologies do change things; sometimes these changes are simple and at other times, profound. As we consider the impact of these technologies on the planning of e learning ventures, it is worth remembering what Neil Postman[7], said about it all in his book: The End of Education, [Vintage Books, New York,] in 1996, a new technology does not merely add something, it changes everything. In order to benefit from the new opportunities technologies bring to our environment without compromising on our mission to be socially inclusive we have to reassess our methods, means, structures and the use of our resources. For me seven elements, besides technology, require the reassessment. These are:

- **Student catchment**: Taking the cue from Maslow as Asian societies move beyond their basic needs will they begin to clamour for higher needs responding to their self actualization hungers. This opens are whole new dimension to the size of the catchment that education will be expected to serve. It is almost becoming an axiom that education and more education is where Asian populations make their biggest investment. In managing the change leadership will have to give serious consideration to the size and character of the new catchment,

[7] Neil Postman [1996]: *Ibid*

the context of the educational provisions to be made available for this expanded population as well as strategies to breach new barriers.
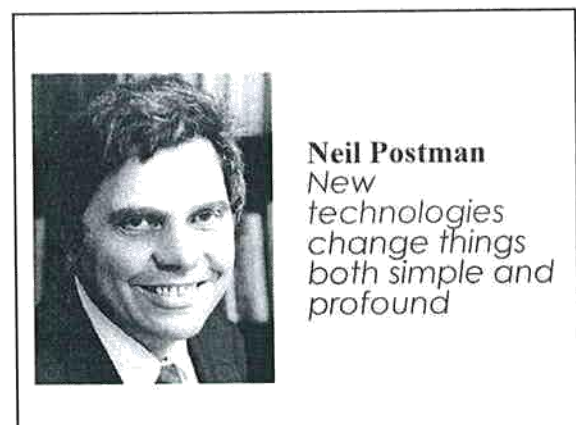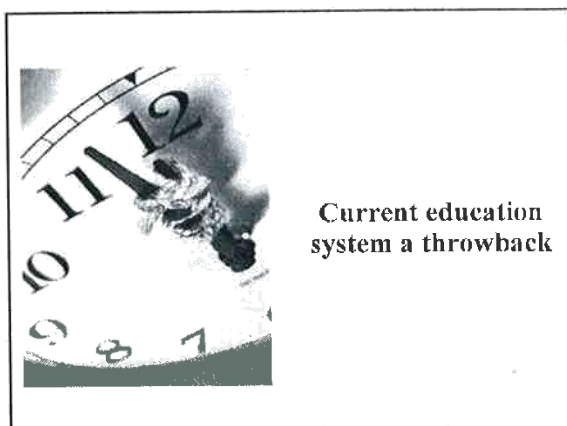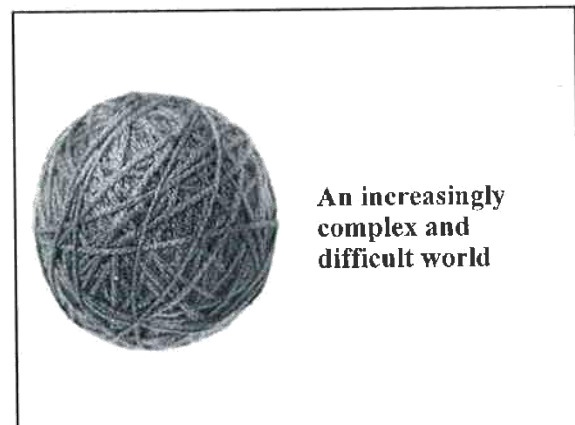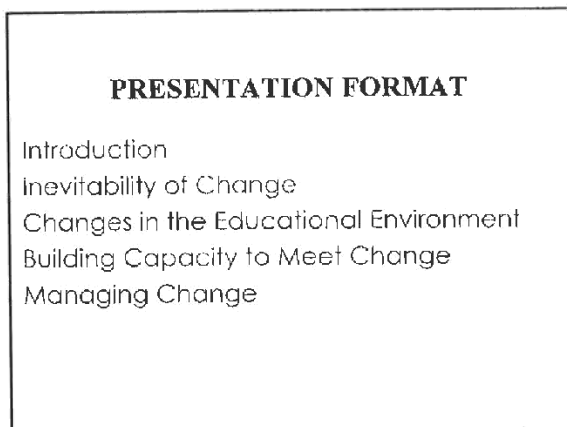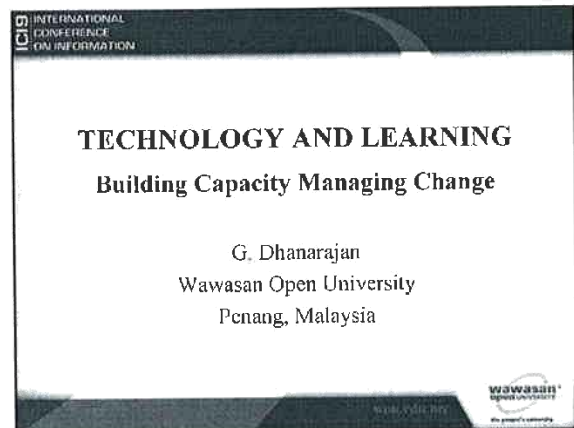
- **Learning materials, copyright and intellectual property:** At the heart of all learning in distance education are materials, specially designed to exploit the full potential of the technological assets. The aforementioned new technologies like OERs, Wiki education, WWW are all changing the ways courses are developed and delivered. They pose enormous legal issues which require addressing.

- **Curriculum:** You may recollect the landmark Delors Commission report to UNESCO[8] that clearly and eloquently described the need to reform curriculum at all levels of education to prepare citizens of and for the new millennium. These recommendations clearly recognize that today's learners, both young and old, will spend their lives in a century that is information rich, knowledge dependent and global in character. They need the skills to cope with this dynamic period. The growth of online library systems, the easy access to expert knowledge through the Web, the variety of sources of learning and the frequent change of careers and location of residence during a person's productive lifetime will mean having new skills and refreshing old skills. In all these areas the new technologies are an extremely invaluable asset. The Web more than any other tool that we know of has the power to make available at the click of a button enormous amount of information from its original source. This information in its multimedia form provides the teacher and learner with information to support and enrich a curriculum in a modern classroom.

- **Finance:** The application and level of cost of new technologies is likely to lead a search for more funding. Where new technologies increase costs there is likely to be a tension between attempts to take advantage of their capacity to widen access and the search for ways of funding them — access may be possible at a price only for those who may be privileged to pay for them. A consequence that has to be avoided to shift the responsibility from the provider to the user. Leadership will be expected to be creative in the way they unravel these tensions and at the same time keep the inclusive nature of their missions.

- **Partnerships:** The technologies allow for lot more creative partnership than hitherto possible especially in matters relating to curriculum, learner support, staff development and innovations. The challenge is to design partnerships that bring benefit while at the same time maintain that competitive edge. Such partnerships will be guided by shared values, institutional compatibilities and a purpose.

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[8] UNESCO [1996] Learning The Treasure Within. Report to UNESCO of the International Commission on Education for the Twenty first century. Paris.

The last two decades has seen some amazing changes in the way education has been seen by the global community. The Education For All [EFA] has sensitized global leaders and their governments on a need to invest more and at the same time demand different from their educational providers. The amazing transformation of social and economic lives of individuals with the arrival of new technologies has clearly demonstrated the interdependence between knowledge and economic activity. The global nature of economic competitiveness has made businesses and governments ask themselves what they must do to achieve and maintain competitive advantage over their rivals. It is a fight for survival that increasingly demands more from educational and training providers. The call is for more, different and to reach far. Technology may provide a solution.

END

Slide 1:

9th International Conference on Information

Open University Malaysia
Kuala Lumpur
13-15 August 2009

Slide 2:

INTERNATIONAL CONFERENCE ON INFORMATION

TECHNOLOGY AND LEARNING

Building Capacity Managing Change

G. Dhanarajan
Wawasan Open University
Penang, Malaysia

Slide 3:

PRESENTATION FORMAT

Introduction
Inevitability of Change
Changes in the Educational Environment
Building Capacity to Meet Change
Managing Change

Slide 4:

An increasingly complex and difficult world

Slide 5:

Current education system a throwback

Slide 6:

Neil Postman
New technologies change things both simple and profound

Dilemma for Malaysians

Policies

Practices

Perceptions

Freeing classrooms

Present policies impede flexibility

Changing Role of academia

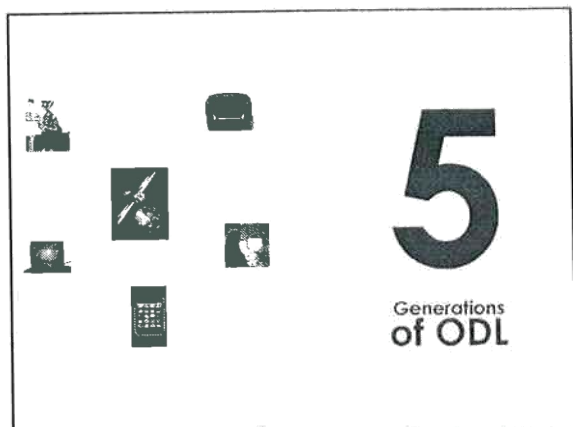*Inducting new breed of academics?*

Re examining delivery systems

Are we ready for change?

Rethinking curriculum, assessment, credentialing and quality.
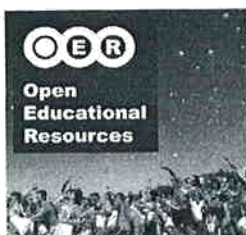

The inevitability of change.
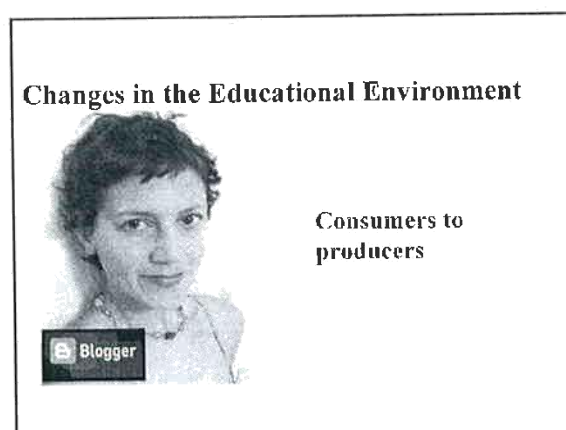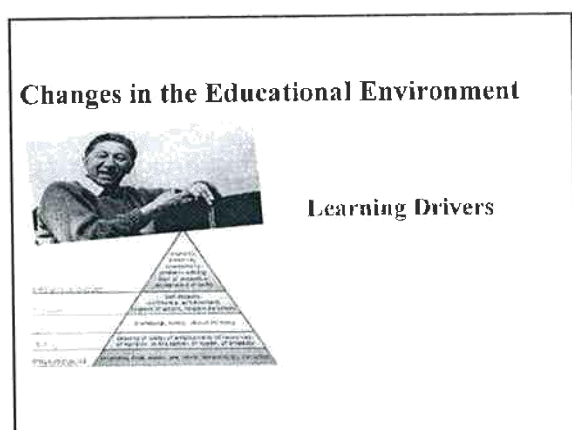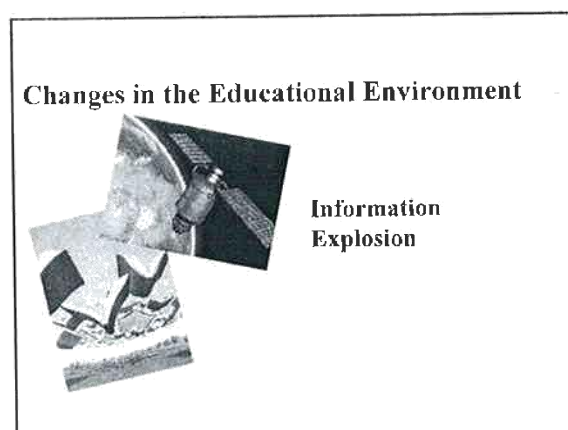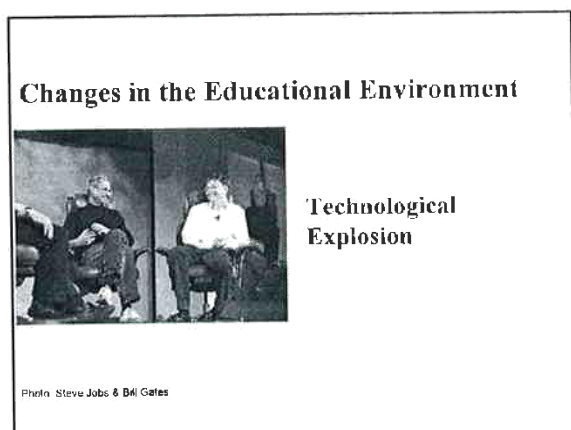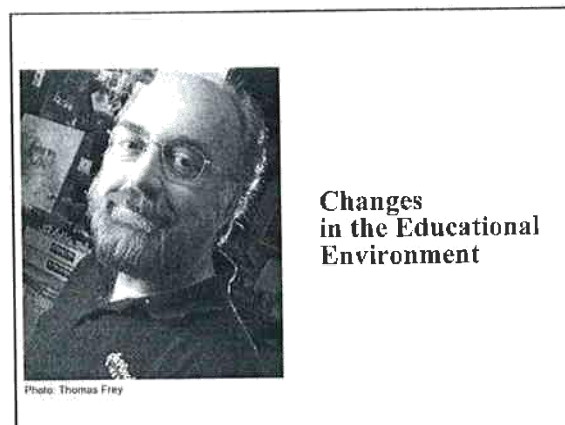
5

Generations
of ODL

Changes
in the Educational
Environment

Photo: Thomas Frey

Changes in the Educational Environment

Technological
Explosion

Photo: Steve Jobs & Bill Gates

Changes in the Educational Environment

Information
Explosion

Changes in the Educational Environment

Learning Drivers

Changes in the Educational Environment

Consumers to
producers

Changes in the Educational Environment

Consumers to producers

Changes in the Educational Environment

Consumers to producers

Changes in the Educational Environment

Courseware vacuum

Building Capacity to Manage Change

A clear and purposeful vision for the venture, recognising weaknesses.

Learner support systems

Pedagogical skills and curricula transformation.

Material design and production

Building Capacity to Manage Change
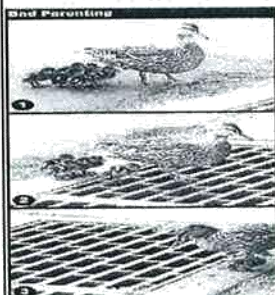
Programme, curriculum and instructional design assets

Creating and promoting LM Systems

Knowledge of systems, planning and admin.

Processing of and complying to IPR Requirements
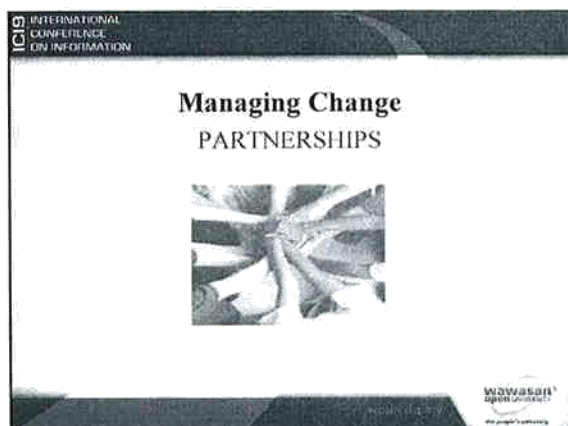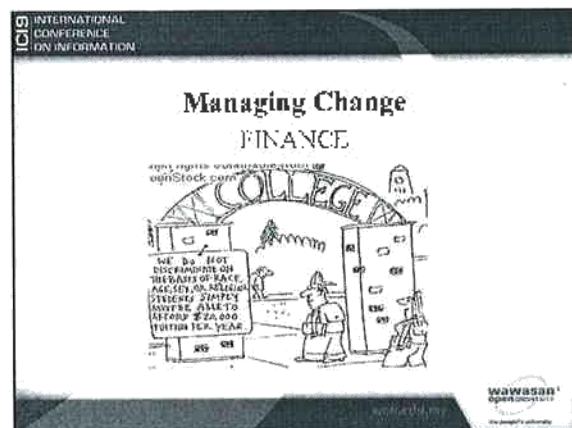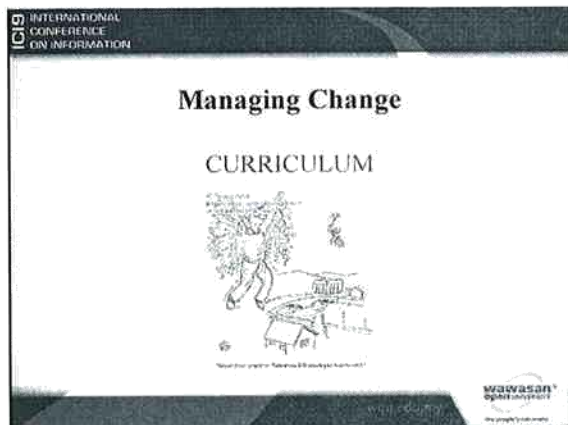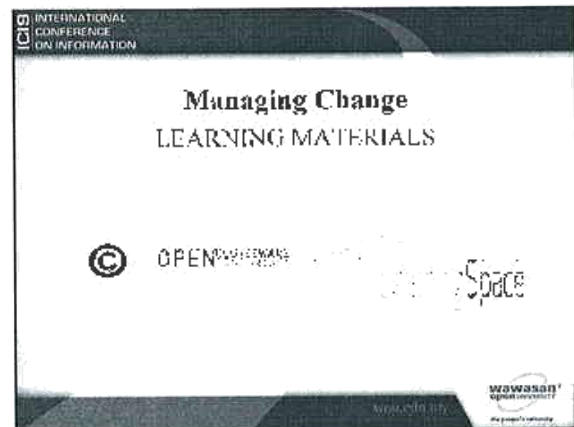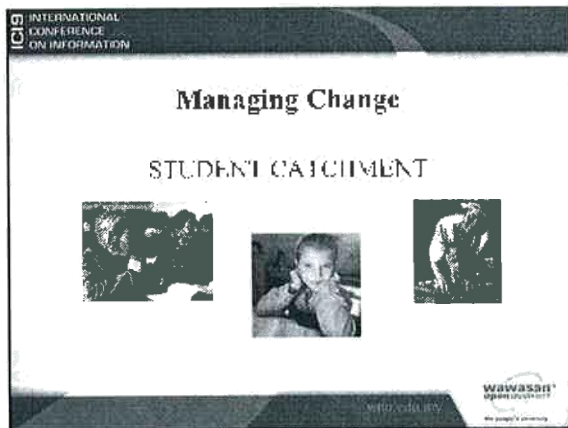

Building Capacity to Manage Change

An effective student information system.

A good communication infrastructure

A well designed mentoring provision.

A well founded Quality Assurance System

A well functioning IT infrastructure

Managing Change
LEARNING MATERIALS

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ICI9 INTERNATIONAL CONFERENCE ON INFORMATION

Managing Change
CURRICULUM

Managing Change
FINANCE

Managing Change
PARTNERSHIPS

Managing Change
POLICIES
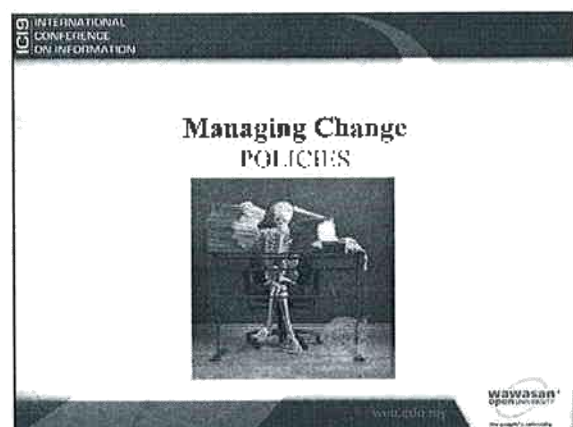
SLIDE NO:

1. Conference title: **9th International Conference on Information: Open University Malaysia; Kuala Lumpur; 13-15 august 2009** [abbreviation **ICI9** to be running head]

2. Title of paper with affiliation: **TECHNOLOGY AND LEARNING Building capacity - Managing Change.**

3. Presentation format:
   a. Introduction
   b. Inevitability of Change
   c. Changes in the educational environment
   d. Building Capacity to meet change
   e. Managing Change

4. An increasingly Complex and difficult world

5. Current education System a throwback

6. Neil Postman: New technologies change things both simple and profound

7. Dilemma for Malaysians: policies, practices, perceptions:

8.
   a. Freeing Classrooms
   b. Re examining delivery systems
   c. Changing Role of academics
   d. Rethinking curriculum, assessment, credentialing and Quality

9. Inevitability of change -- picture of teacher in a mass lecture hall.

10. Picture of 5 generations of ODL

11. Changes in the educational environment   Picture of Thomas Frey

12. Changes in the educational environment – Technology Explosion [graphic] [Picture Bill gates Steve Jobs, Andy Grove?]

13. Changes in the educational environment – information explosion [graphic] [Graphic of books, journals, satellite]

14. Changes in the educational environment -- learning drivers [picture of maslow]

15. Changes in the educational environment - consumers to producers [pictures of meg hourihan BLOGGER]

16. Changes in the educational environment - consumers to producers [picture of Tom Anderson, Chris wolfe MYSPACE]

17. Changes in the educational environment - consumers to producers [pictures of chad hurley, steve chan YouTube]

18. Changes in the educational environment - Courseware vaccum [OER]

National Knowledge Commission
Government of India

OPEN COURSEWARE
CONSORTIUM

LearningSpace

OER
OPEN EDUCATIONAL RESOURCES

MITOPENCOURSEWARE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

19. 20. 21 .Building Capacity to Manage Change:

a. A clear and purposeful vision for the venture, recognizing especially its weaknesses
b. Knowledge of systems planning and administration
c. Pedagogical skills and know how in curricula transformation
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f. Processing of and Complying to IPR requirements
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h. Programme, curriculum and Instructional design assets.
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k. A good communication infrastructure
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m. A well functioning IT infrastructure

Bad Parenting
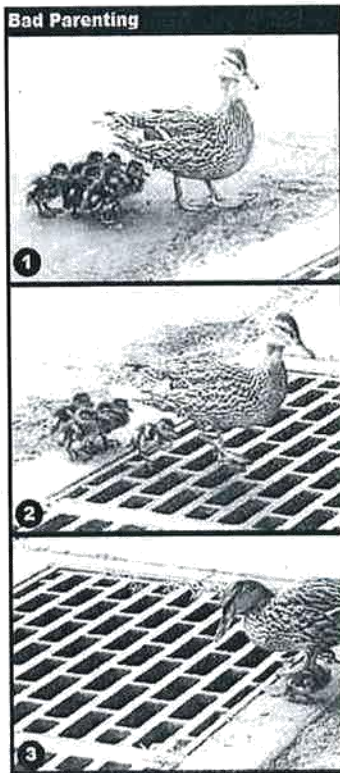
20. Managing Change – Student catchment

21. Managing Change – Learning materials

22. Managing Change – Curriculum

23. Managing Change – Finance

Priority #5: Sustainability

24. Managing Change – Partnerships

25. Managing Change – Policies

26. Thank you,