Lifelong Learning as a Significant Mark of the 21st century

ASEM Forum on Lifelong Learning 2015: Reviewing the Agenda for Lifelong Learning
9-12 March 2015
Bali, Indonesia

Wing On Lee
Open University of Hong Kong

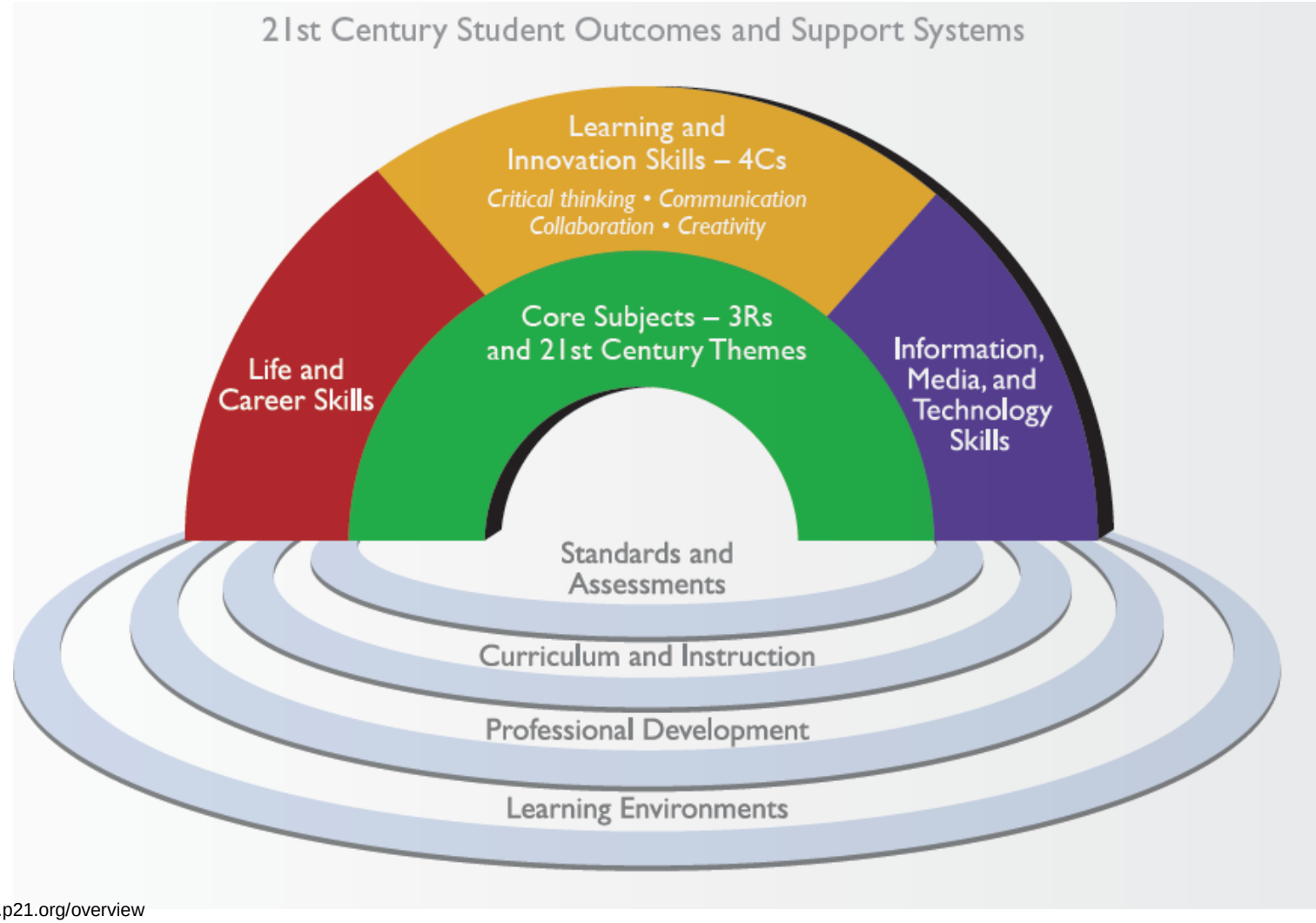
The 21cc Agenda ⟹ Lifelong Learning

- From an ad hoc to a convergent agenda

The P21 Framework

Partnership for 21st century skills (P21) is a public-private organization formed in 2001 with the sponsorship of the U.S. government and several organizations from the private sector (Apple Computer, Cisco Systems, Dell Computer Corporation, Microsoft Corporation, National Education Association).

The P21 Framework



Source: http://www.p21.org/overview

P21 – Core Subjects, 21st Century Themes and Skills

The P21 framework which ***was developed to help practitioners integrate 21CCs into the teaching of core academic subjects***: English, Reading or language arts, World languages, Arts, Mathematics, Economics, Science, Geography, History, Government and Civics.

- Schools must promote understanding of academic content at much higher levels by **weaving 21st century interdisciplinary themes** into core subjects:
  - Global Awareness
  - Financial, Economic, Business and Entrepreneurial Literacy
  - Civic Literacy
  - Health Literacy
  - Environmental Literacy

Learning and Innovations Skills

- Creativity & Innovation
- Critical Thinking & Problem Solving
- Communication & Collaboration

Information, Media and Technology Skills

- Information Literacy
- Media Literacy
- ICT Literacy

Life and Career Skills

- Flexibility & Adaptability
- Initiative and Self-Direction
- Social and Cross Cultural Skills
- Productivity & Accountability
- Leadership & Responsibility

Source: http://www.p21.org/overview

P21 – 21st Century Support Systems

- Focus on 21st century skills, content knowledge and expertise
- Build understanding across and among core subjects as well as 21st century interdisciplinary themes
- Emphasize deep understanding
- Engage students in solving real-world problems
- Allow for multiple measures of mastery

21st Century Standards

Assessment of 21st Century Skills

- Balance assessments
- Useful feedback
- Technology-enhanced, formative and summative assessments that measure student mastery of 21CCs
- Portfolio of student work that demonstrate mastery of 21CCs
- Portfolio of measures to assess the educational system's effectiveness in reaching high levels of student competency in 21CCs

Source: http://www.p21.org/overview

P21 – 21st Century Support Systems

Curriculum & Instruction

- Teach 21st century skills discretely
- Provide opportunities for applying 21st century skills across content areas and for a competency-based approach to learning
- Enable innovative learning methods
- Encourage the integration of community resources beyond school walls

Professional Development

- Help teachers integrate 21st century skills, tools, teaching strategies into classrooms
- Balance direct instruction with project-oriented teaching methods
- Illustrate benefits of deep understanding
- Enable 21st century PLCs
- Support continuous evaluation of students' 21CCs

Learning Environments

- Create appropriate learning practices, human support and physical environments
- Support PLCs
- Enable learning in real world 21st century contexts
- Allow equitable access
- Provide for 21st century group, team and individual learning
- Support expanded community and international involvement in learning, both face-to-face and online

Source: http://www.p21.org/overview

The ATC21S Framework

ATC21S Framework

- The aim of AT21CS is to provide clear operational definitions of 21st century skills for the design of innovative assessment tasks to be used in the classroom. The ATC21S member countries include Australia, Finland, Singapore, U.K etc.
- The goal of the Assessment and Teaching of 21st Century Skills (ATC21S) project is to *create a new assessment framework* with teaching and learning resources to help students develop 21st-century skills, and *develop methods to assess skills* that will form the basis for 21st-century curricula. ATC21S identified 10 major 21st century skills and grouped them into 4 categories:

Ways of Thinking

- Creativity and innovation
- Critical thinking, problem solving, decision making
- Learning to learn, Metacognition

Ways of Working

- Communication
- Collaboration (teamwork)

Tools for Working

- Information literacy
- ICT Literacy

Living in the World

- Citizenship (local and global)
- Life and career
- Personal and social responsibility (incl. cultural awareness and competence)

Source: Binkley et al. (2010)

ATC21S – The KSAVE Model

(Conceptualized under the KSAVE Model)

Knowledge	Skills	Attitudes/Values/Ethics
Think and work creatively and with others • *Know a wide range of idea creation techniques (such as brainstorming)* • *Be aware of invention, creativity and innovation from the past within and across national boundaries and cultures* • *Know the real world limits to adopting new ideas and how to present them in more acceptable forms* • *Know how to recognize failures and differentiate between terminal failure and difficulties to overcome* Implement innovations • *Be aware of and understand where and how innovation will impact and the field in which the innovation will occur* • *Be aware of the historical and cultural barriers to innovation and creativity*	Think creatively • *Create new and worthwhile ideas (both incremental and radical concepts)* • *Be able to elaborate, refine, analyze and evaluate one's own ideas in order to improve and maximize creative efforts* Work creatively with others • *Develop, implement and communicate new ideas to others effectively* • *Be sensitive to the historical and cultural barriers to innovation and creativity* Implement *Innovations* • *Develop innovative and creative ideas into forms that have impact and be adopted*	Think creatively • *Be open to new and worthwhile ideas (both incremental and radical concepts)* Work creatively with others • *Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work* • *View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes* Implement *Innovations* • *Show persistence in presenting and promoting new ideas*

Source: Binkley et al. (2010, p.16, Table 2)

The OECD - DeSeCo Framework

21st century skills and competences for new millennium learners is an initiative undertaken by the Organization for Economic Co-operation and Development (OECD) with the goal of providing policy-makers, researchers, and educators with orientations for the design of educational policies and practices that address the requirements of learners in the knowledge society.

The OECD-DeSeCo Framework

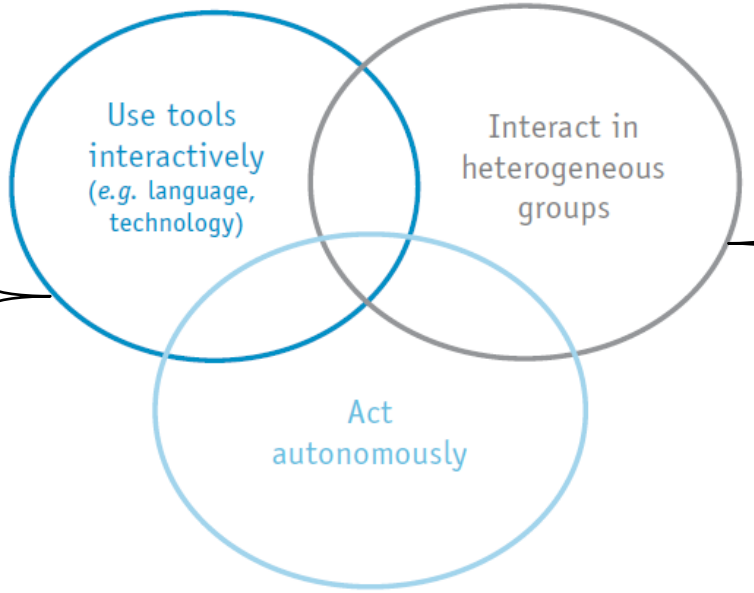
The DeSeCo (Definition and Selection of Competencies) Project's conceptual framework for key competencies classifies such competencies in three broad categories.

Why

- The need to keep up to date with technologies
- The need to adapt tools to own purposes
- The need to conduct active dialogue with the world

What competencies

- Use language, symbols and texts interactively
- Use knowledge and information interactively
- Use technology interactively



Why

- The need to deal with diversity in pluralistic societies
- The importance of empathy
- The importance of social capital

What competencies

- Relate well to others
- Co-operate, work in teams
- Manage and resolve conflicts

Why

- The need to realize one's identity and set goals, in complex world
- The need to exercise rights and take responsibility
- The need to understand one's environment and its functioning

What competencies

- Act within the big picture
- Form and conduct life plans and personal projects
- Defend and assert rights, interests, limits and needs

Source: OECD (2005)

Comparison of 21CC Frameworks

Voogt and Roblin (2012) :

- All frameworks seem to converge on a common set of 21st century competences: collaboration, communication, ICT literacy, and social and/or cultural competencies (including citizenship).
- Most frameworks also mention creativity, critical thinking, productivity, and problem-solving.
- Each framework has a different focus and areas of emphasis within the overarching competences.
  - (a) The P21, European Union, and OECD-DeSeCo frameworks can be regarded as more generic frameworks that provide a conceptualization of 21st century competences from which the other frameworks build on.
  - (b) The ATC21S and NAEP are primarily concerned with the assessment of 21st century competencies.
  - (c) The NETS, En Gauge, and UNESCO frameworks focus mainly on issues related to digital literacy and the integration of technology in the curriculum.

Source: Voogt and Roblin (2012)

21CC Emerging Frameworks

	P21	ATC21S	OECD	European Union
Thinking Skills	**Learning and Innovations Skills** 1) Creativity & Innovation 2) Critical Thinking & Problem Solving	**Ways of thinking** 1) Creativity and innovation 2) Critical thinking, problem solving, decision making 3) Learning to learn, Metacognition		1) Learning to learn
Interpersonal Skills	3) Communication & Collaboration	**Ways of Working** 4) Communication 5) Collaboration (teamwork)	**Interacting in Heterogeneous Groups** 1) Relate well to others 2) Co-operate, work in teams 3) Manage and resolve conflicts	2) Communication in the mother tongue 3) Communication in foreign languages
ICT Skills	**Information, Media and Technology Skills** 4) Information Literacy 5) Media Literacy 6) ICT Literacy	**Tools for Working** 6) Information literacy 7) ICT Literacy	**Using Tools Interactively** 4) Use language, symbols and texts interactively 5) Use knowledge and information interactively 6) Use technology interactively	4) Mathematical competence and basic competences in science and technology 5) Digital competence
Life Skills	**Life and Career Skills** 7) Flexibility & Adaptability 8) Initiative and Self-Direction 9) Social and Cross Cultural Skills 10) Productivity & Accountability 11) Leadership & Responsibility	**Living in the World** 8) Citizenship (local and global) 9) Life and Career 10) Personal and Social Responsibility (including cultural awareness and competence)	**Acting Autonomously** 7) Act within the big picture 8) Form and conduct life plans and personal projects 9) Defend and assert rights, interests, limits and needs	6) Social and civic competences 7) Sense of initiative and entrepreneurship 8) Cultural awareness and expression

Source: Binkley et al. (2010); OECD (2005); Gordon et al. (2009); http://www.p21.org/overview

Paradigm shift in 21st century epistemology

Boyer (1990) in a Carnegie Foundation report expanded the concepts of scholarship to cover:

- Discovery
- Integration
- Application
- Teaching

Changing Concepts towards Scholarship

Discovery	→	Basic research with emphasis on investigation
Integration	→	Multidisciplinary and interdisciplinary features of scholarship
Application	→	Application of knowledge to human problems
Teaching	→	Educating and enticing future scholars

Changing Concepts of Knowledge

Traditionally

- Knowledge: a privilege, only accessible by privileged people (e.g. philosophers, religious priests, professors)
- Education: a process of diffusion - from the knowledge owner (teachers) to the knowledge recipients (students)

Changing Concepts

- Concept of scholarship: Research
- Understanding of scholarship varies across nations and time (Boyer, 1990):

- Britain: A means and measure of self-development
- Germany: An end in itself
- America: Equipment for service

Changing Concepts of Knowledge

Expanded concepts of scholarship: discovery, integration, application and teaching (Boyer, 1990)

- ***Discovery***: basic research with emphasis on investigation
- ***Integration***: multidisciplinary and interdisciplinary features of scholarship, need for deliberate intellectual efforts to reshape the boundaries of knowledge
- ***Application:*** knowledge application to human problems, the servicing role of scholarship, possibility of new intellectual understandings
- ***Teaching***: educating and enticing future scholars; intellectual commitment; active learning and students as critical thinkers; faculty, scholars as learners; transmitting, transforming and extending knowledge

Conclusion: A more inclusive perspective of scholarship - recognition that knowledge is acquired through research (discovery), synthesis (integration), practice (application), and teaching

Knowledge Transfer, Translation, Exchange and Mobilisation

The growth of new knowledge concepts:

- **In schools**: knowledge building and creation
- **In universities**: Knowledge transfer, knowledge exchange, knowledge utilization, knowledge mobilization, knowledge mediation, and knowledge management and creation, etc.

The PISA story:

- Economic success does not only depend on how high achieving students are, but how open the society is to allow students to utitlize their knowledge for production and new production in the society
- In other words – the social environment for one's knowledge to be "maximally utitlized" that can feed into economic production

Features of the new ideology of knowledge

- Knowledge created by researchers and used by practitioners
- Emphasis on knowledge engagement signifies knowledge partnership
- The role of practitioners (policy makers and teachers) and students in knowledge mobilisation (i. e. knowledge creation, knowledge mediation and knowledge application) is given increased focus
- An interactive, collaborative and iterative process, combining knowledge discovery-application and knowledge engagement and creation, with knowledge transfer as a meditative process

Institutionalisation of Lifelong Learning

Common emphases in education reform initiatives in Asia:

Management reforms that emphasise accountability (e.g. school achievements be known to the public), redefinition of educational goals, quality and the assessment of quality, a focus on learning outcome, assessment for learning and development, and lifelong learning

- Not a single incidence, but intertwined with and built upon one another
- Reflect ideological shifts towards demands for efficiency, performativity, and measurability
- Increased demands for public participation in educational provisions (e.g. private sector's increased involvement in school activities and policymaking, public participation in curriculum development)

Institutionalisation of Lifelong Learning

Lifelong learning

- An educational provision that contains most of these elements in current educational reforms
- Addresses educational needs for the volatile economies that would lead to quick turnovers in the types of jobs available
- Calls for strong individuals with a sense of self-responsibility

Terminology Change – Conceptual Change

Lifelong Education		Lifelong Learning
Organised educational provision	⟷	Individualised pursuit of learning, motivating individuals to learn what would suit them for their own adaptation to the changing world,
Programmes, organisations and central strategies of provision	⟷	Facilitating the emergence of spontaneous community provision of learning opportunities to suit the learners' needs.
Structures	⟷	Culture
State-led provision	⟷	Private initiatives: also criticising that the state tries to abdicate its responsibility to provide economic opportunities

Institutionalisation of Lifelong Learning

Academic institutions and private qualification providers

- The Credit Bank System in South Korea (UNESCO APPEAL, 2001)
- The Credit Transfer and Accumulation System in European Union (European Commission, 2004)
- The National Qualifications Framework in Australia

Institutionalisation of Lifelong Learning (Coombs & Ahmed, 1974)

- Informal mode of learning (every person acquires and accumulates knowledge, skills, attitudes and insights from daily experiences and exposure to the environment)
- Non-formal (as any organised, systematic, educational activity carried on outside the framework of the formal system)
- Formal education (highly institutionalised and hierarchically structured)

Informal Growth of University Knowledge

- The growing presence of lifelong learning units within universities challenges the definition of what constitutes legitimate knowledge within the context of higher education.
- Once these units become institutionalised they have a formal claim towards knowledge building.
- Cervero challenges the tradition of ascribing legitimacy to knowledge that is "formal, abstract and general" while devaluing that which is "local, specific and based in practice".
- This has had the effect of transferring learning from the place of practice to the University.

The Re-bordering of Formal, Non-formal and Informal Education

Table 1. The relationship between formal and non-formal education

Learning mode	formal schooling	flexible schooling	participatory education
Context	decontextualised	context-adjusted	contextualized
Education type	formal education	non-formal education	informal education

Source: Constructed based on Rogers, 2004, pp. 255-260.

Knowledge Production of LLL

- **Nowotny et al. (2001)** :define as **"social robust" knowledge** - highly contextualised and their relevance to real-world educational needs make them appealing to communities outside the University.
- **Bagnell (1992):** Lifelong learning institutions generally emphasize the connection between **knowledge and application** a connection that is not always tied to the workplace. Marketing material: **"can do"** spirit.
- **Kogan (2005):** Soft science is based in application, it emphasises **inclusiveness and accessibility**. He speculates that the appeal of soft science may well increase as **"consumers demand more power"** in knowledge production processes.

Comparative Cases
USA, HK, Australia

Statement	United States	Hong Kong	Australia
References to the University's connection to the wider community (in order)	To act as a catalyst for creativity in the arts, the sciences and the professions by encouraging interaction among its students, faculty, staff, alumni and the communities it serves; **To promote the process of lifelong learning from both global and integrative perspectives;** To contribute talent and knowledge to improve the quality of life in metropolitan.	**Developing and extending lifelong learning opportunities for the community;** To act in partnership with the community over the generation, dissemination and application of knowledge.	**Purpose** **We combine humane aspirations with a practical business sense to serve the needs of the community while preserving academic freedom;** **Values** Responsibility and service through leadership in the community.

Connectedness with the Wider Community

- These mission statements show that the academic missions of the parent universities encompassed the work of The College and The School and thus gave their roles legitimacy.

For The College

There was consistency between its focus on providing professional Masters degrees and the University's emphasis on both application and theory.

For The School

There was a mandated role for the University to develop and extend lifelong learning for the community which was formalised as part of its academic mission.

For The Centre

There was no clear indication as to its role in the academic mission.

The Emergence of More Open Systems of Knowledge Production

- The three case studies evolved out of previous non-award extension units within their universities.
- Extension education was built upon a one-sided perception of community needs resulting in a one-way flow of ideas from the University to the community, "established on the unquestioned assumption that the University's accumulated academic tradition and knowledge rightfully gave it sole decision-making powers in academic matters".

The Lifelong Learning Discourse

Discussions on lifelong learning

- Lifelong learning has become popular and "commercially viable" (Duke, 2002, p. 11)
- Lifelong learning has become an educational policy
- The growth of lifelong learning has led to the growth of institutionalisation, and blurred difference between more organised lifelong education and more individualised lifelong learning (Duke, 2002; Aspin et al., 2001)
- Lifelong learning in Asian countries: closer to the traditional concepts of lifelong education, continuing education and/or adult education (Lee, 2007)
- Unclear divide between formal and non-formal education, as "a matrix with formal and non-formal education" (Duke, 2001, p. 510)
- Lifelong learning "presupposes an integrated, holistic and seamless approach to the whole of education" (Aspin et al., 2001, p. xliii)

Knowledge Economy & Impacts on Education Institutions

- Ideological shifts towards demand for efficiency, performativity, measurability in education enterprises
- Increased demand for public participation in educational provisions
- Impact of knowledge economy on educational reform

THE SCOPE OF KNOWLEDGE TRANSFER

KNOWLEDGE TRANSFER PROCESSES

Knowledge access
(make knowledge accessible to users)

- Publications
- Best practice guides/standards
- Conferences/seminars
- Contributions to national and international information and knowledge exchanges and networks
- Staff exchange
- Continuing professional education
- Transfer of graduates

Knowledge production
(sell knowledge products)

- Patents
- Licensing
- Spin-out
- Publication of books
- Multimedia products

Knowledge relationships
(sell knowledge services)

- Consulting
- Contract Research
- Education and training contract

Knowledge Engagement
(engage to achieve mutually beneficaial outcomes)

- Longer term alliances aimed at achieving mutually beneficial goals (e.g. regeneration of legions or communities)
- Alignment of curriculum with needs of industry business and communities
- Student placements and projects in business and community organisations

Adapted from Howard Partners (2005a)

The Scope of Knowledge Transfer

Knowledge Transfer Process covers:

- **Knowledge access** (make knowledge accessible to users),
- **Knowledge production** (sell 'knowledge products'),
- **Knowledge relationships** (sell 'knowledge services') and knowledge engagement (engage to achieve mutually beneficial outcomes)
- **Knowledge engagement** (engage to achieve mutually beneficial outcomes)

Knowledge Engagement

- The traditional understanding of knowledge utilisation or knowledge transfer: the knowledge is objective, explicit and universal, created by researchers and used by practitioners.
- The active role of practitioners in the knowledge utilisation is under-emphasised.
- Knowledge engagement signifies knowledge partnership
- Knowledge transfer project of the University of Melbourne is taken charge by the Knowledge Engagement and Partnership Office

Conclusion: Paradigm Shifts

Traditional paradigm

- Discovery – knowledge – application

Emerging paradigm

- Discovery – knowledge engagement and sharing – knowledge management and creation

The 21cc Agenda

- Starting with school: knowledge building and knowledge creation
- Broadening learning beyond the classroom: seamless learning, service learning, and enhanced awareness of the changing conditions and demands of the working world
- Lifelong learning: the re-bordering of learning: graded learning may become meaningless, seeking for maximisation of knowledge utility, enhanced consultation with stakeholders

Thank you!