Venturing Non-cognitive Learning

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at
UNESCO ERI-Network
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The Trend
Based on the Reports

- Most systems have launched major reforms very recently.
- Non-cognitive learning is a new dimension on most nations’ agenda.
- Most systems are serious about this dimension.
The Proceeding

Important in Concept among academics

Included in Mission documents

Included as Target Goals in Policies

Action Plans for implementation

Initial outcomes/achievements
The Context

Old Traditions
New Demands
New Concepts
New Names
New way of classifying Learning
2

Rationale
Economic Discourse
Social Discourse
Humanity Discourse
- Individual
  National
  Global
## Attempting a Framework

<table>
<thead>
<tr>
<th>Level</th>
<th>Economic Discourse</th>
<th>Social Discourse</th>
<th>Humanity Discourse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>Competitiveness</td>
<td>Understanding/Peace</td>
<td>Global Citizenship</td>
</tr>
<tr>
<td>National</td>
<td>GDP</td>
<td>HDI</td>
<td>Citizenship/Patriotism</td>
</tr>
<tr>
<td>Individual</td>
<td>Employability</td>
<td>Community Harmony</td>
<td>Moral/Character</td>
</tr>
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</table>
Belief vis-à-vis Policy

**Rational Behind Integrating Non-cognitive Skills (%) Respondents**

- Response to employer demands: 19%
- Excessive pressure on students: 48%
- Declining student learning achievement: 32%
- Boosting economic development: 16%
- Meeting social demand: 48%
- Increased international competition: 54%
The Reality in the Context
Source of Knowledge and Skills – MIT Alumni

Source: Kristen Wolfe, B.S. Thesis, Department of Mechanical Engineering, June 2004
Knowledge and Skills – MIT Alumni
Mean Frequency of Use

Frequency of Use: 0 Never, 1 Hardly ever - a few times a year, 2 Occasionally - at least once a month, 3 Regularly - at least weekly, 4 Frequently - on most days, 5 Pervasively - for most everything I do

Source: Kristen Wolfe, B.S. Thesis, Department of Mechanical Engineering, June 2004
Same credentials, differential salaries
(Top salary/Bottom salary)

- Investment banking 13+
- Retail banking 5.5
- Computer related 4.5
- Marketing 4
- Social Work 2

(Kan 2009, Data from two universities in Hong Kong)
Accountants: Senior Partner, Deloitte

“We do auditing. Don’t mistake: Auditing is not so much about accounting, which I can train anyone in months’ time for a charter. What I cannot train on the job are: Integrity and Sensitivity!”
Why?

Society has changed!
The workplace has changed!
Expectations on individuals have changed!
Workplace in Industrial Society: the Pyramid
Industrial Institutions

- Operatives
- Craftsmen
- Technicians
- Engineers

Degrees
- Diplomas

Vocational Training
- Basic Education
Industrial Society

- De-personalization
- Scientific Management
- Impartiality
- Strict Division of Labor
- Management Layers
- Tight Structure
- Rules & Regulations
- Procedures
The Skills Argument

- Jobs require knowledge and skills
- Education provides knowledge and skills

That simple!
Post-industrial: Workplace

Project Groups/Task Forces
Small Enterprises
Free-lancers

Higher Education
Hong Kong (as example) . . .

Around 304,000 registered companies (2008)

- 99.3% under 100 (SME)  
  - 69% of employees

- 94.3% under 20  
  - 40% of employees

- 87.0% under 10  
  - 33% of employees

- Over 1,000 employees: 110

- Free-lancers 220,000 estimated  
  vis-à-vis 2,200,000 in registered companies

The United States

<table>
<thead>
<tr>
<th>Business Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>98% under 100</td>
</tr>
<tr>
<td>86% under 20</td>
</tr>
</tbody>
</table>

National Bureau of Economic Research, 2002

Shanghai (2005/6)

- SME: 99.7%
- Employees: 86.8%
- Total asset: 69.2%
Task Forces, Deal Teams, Project Groups, ...

One-stop Team

Promote or perish

Blurred layers

Integrated teamwork

Frontline design, personal responsibility

Appointment by personality

Loose rules & flexible procedures

Output rather than process
Organisations

**Industrial**
- Large pyramids
- Producer-centred
- Departments
- Hierarchy
- Tight structure
- Design at the top
- Assigned procedures
- Rules & regulations

**Post-industrial**
- Small companies
- Client-centred
- Project teams
- Flat
- Loose & fluid
- Design at front-lines
- Improvised actions
- Fit-for-purpose acts
Working Modes

**Industrial**
- Division of labour
- Individual tasks
- Specialist duties
- Administrative links
- Credential-based appointments
- Appraisal by seniors

**Post-industrial**
- Total solutions
- Team work
- Integrated expertise
- Human interactions
- On-demand, just-in-time learning
- $360^0$ appraisal
Work Activities

Industrial
- Paper work
- Circulars
- Minutes
- Documents
- Instructions
- Written reports
- .......

Post-industrial
- Communications
- Brainstorming
- E-mailing
- Seminars
- Debates
- Conferencing
- Negotiation
- Presentation
- Confrontation
- Lobbying
- Retreats
- SMS
- Blogs
- Facebook
- Twitter
- You-tubes
Front-line workers

**Industrial**
- Bottom of the hierarchy
- Hiring due to credentials
- Member of a specialised department
- Implementation of design
- Using specific skills
- Routine and repetitive activities
- Working according to job descriptions
- Following set procedures
- Maintaining the convention
- Abiding by rules and regulations
- Appraised by degree of compliance
- Stable and secure
- Blue collars

**Post-industrial**
- Member of a small group
- Hiring due to personality
- Working in teams
- Directly facing clients
- Handling human relations
- Directly facing problems
- Anticipating total solutions
- Designing solutions with creativity
- Using multiple skills
- Taking risks
- Improvising fit-for-purpose activities
- Managing oneself
- Learning on-the-job, on-demand, just-in-time
- Appraised 360°
- Unstable, uncertain and insecure
- Knowledge workers
Individual Lives

Industrial
- Lifelong career
- Long-term loyalty
- Occupational identity
- Work-study consistency
- Org membership
- Stable employment
- Escalating salaries
- Upward mobility
- Foreseeable retirement
- Constant networks
- Stable relations
- Security, certainty

Post-industrial
- Multiple careers
- Multiple jobs
- Blurred identity
- Work-study mismatch
- Possible free-lancing
- Frequent off-jobs
- Precarious incomes
- Fluctuating status
- Unpredictable future
- Varying networks
- Changing partners
- Insecurity, uncertainty
Expectations ...

Industrial
- Credentials
- Compliance

Post-industrial
- Communications
- Team-working
- Human relations
- Problem-solving
- Risk-taking
- Design & innovations
- Personal responsibility
- Continuous learning
- Self-management
- Ethics, values, principles
Jobs and beyond …

- Jobs are declining in number!
- Jobs are changing in nature!
- People change jobs and occupations!
- Traditional jobs are disappearing!
- Free-lancing & self-employment are on the rise!
- More people do not work in organizations
- More people are between jobs
- More people retire early
Beyond knowledge and skills …

- Moral Standards
- Attitudes
- Emotions
- Values
- Ethics
- Personality

All in the non-cognitive domain!
Beyond economic lives …

There are lives beyond jobs or economic life.

- Family life
- Cultural life
- Political life
- Spiritual life
- Leisure life
- Life after retirement

* * *
More recently, ...

🌿 Preparation for Disruptions in Life

🌿 Unpredictable natural disasters
🌿 Man-made accidents
🌿 Emerging disease and recurring epidemics
🌿 Precarious economic crises
🌿 Unexpected political turmoil
🌿 Irresponsible politicking
🌿 Hidden potentials of wars
🌿 Intolerable social inequality and conflicts
Expectations on individuals ...

- Teamwork
- Human Interactions
- Integrated Expertise
- Self-management
- Personal Responsibility
- Innovations & Design
- Risk Taking
- Communications
- Presentations
- Persuasion
- Negotiation
- Debates
- Networking
- Brainstorming
- Moral Judgments
- Ethical Dilemmas
- Indecent Temptations
- Emotional Challenges
- Mindfulness
- Passion
- Commitment
- Lifelong Learning
- Self-Consciousness
- Lifelong Learning
Three possible approaches to planning education:

1. **Improvement**
   - Do more and better of what we are doing

2. **Catching-up**
   - Anticipate and preempt changes

3. **Reform**
   - Go to the basics and construct capacity for change
3

Definition
Curriculum as Subjects
Curriculum as Key Learning Areas
Reform: The Cultural Heritage

The 5 Dimensions of Education

Moral
Intellectual
Physical
Social
Aesthetic

德 智 體 群 美
# The Skills Discourse

<table>
<thead>
<tr>
<th>Foundation Skills</th>
<th>Specialized Skills</th>
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<tbody>
<tr>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>Physical and Psychological Health</td>
<td></td>
</tr>
<tr>
<td>Global Citizenship</td>
<td></td>
</tr>
<tr>
<td>Intrapersonal Skills</td>
<td></td>
</tr>
<tr>
<td>Interpersonal Skills</td>
<td></td>
</tr>
<tr>
<td>Critical and Innovative Thinking</td>
<td></td>
</tr>
<tr>
<td>Domains</td>
<td>Examples of key characteristics</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Critical and innovative thinking</td>
<td>Creativity, entrepreneurship, resourcefulness, application skills, reflective thinking, reasoned decision-making</td>
</tr>
<tr>
<td>Interpersonal skills</td>
<td>Presentation and communication skills, leadership, organizational skills, teamwork, collaboration, initiative, sociability, collegiality</td>
</tr>
<tr>
<td>Intrapersonal skills</td>
<td>Self-discipline, enthusiasm, perseverance, self-motivation, compassion, integrity, commitment</td>
</tr>
<tr>
<td>Global citizenship</td>
<td>Awareness, tolerance, openness, respect for diversity, intercultural understanding, ability to resolve conflicts, civic/political participation, conflict resolution, respect for the environment</td>
</tr>
<tr>
<td>Optional</td>
<td>Healthy lifestyle, healthy feeding, physical fitness, empathy, self-respect</td>
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Zest for living

Practical ability to act for the world

Collaborative thinking & problem solving ability

Basic literacy as thinking tools
Learning in Schools

- Subjects
- Liberal Studies
- Arts & Sports
- Communal Lives
- Services
- The Deprived
- Other Cultures
# The Learning Discourse

<table>
<thead>
<tr>
<th>Foundation Competency Learning</th>
<th>Specialized Competency Learning</th>
<th>Other Learning Experiences</th>
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<tbody>
<tr>
<td>Others</td>
<td>Physical and Aesthetic Experiences</td>
<td>Global Citizenship Experiences</td>
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<td>Intrapersonal Experiences</td>
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<td>Critical and Innovative Innovative Experiences</td>
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Liberal Space
Learning to Know
Learning to Do
Learning to Live Together
Learning to Be
Key competencies (OECD)

Interacting in socially heterogeneous groups
- The ability to relate well to others
- The ability to cooperate
- The ability to manage and resolve conflicts

Acting autonomously
- The ability to act within the “big picture”
- The ability to form and conduct life plans and personal projects
- The ability to defend/assert one’s rights, interests, limits, needs

Using tools purposively and interactively
- The ability to use language, symbols, and text
- The ability to use knowledge and information
- The ability to use technology
How?
Framework of curriculum contents and objectives for nurturing “Zest for Living” (Image: Draft version 2)

Well-rounded character

- Values and ethics
  - Self-perspective
  - Relationship with others
  - Relationship with nature
  - Relationship with groups and the society

- Self-esteem, Self-discipline
  - Self-confidence
  - Respect to the nature
  - Bringing out self-advantages and characteristics
  - Making steady efforts to accomplish goals for learning and daily life
  - Being exposed to culture, arts and books

- Relationship with others
  - Respect others without bullying
  - Appreciate others and collaborate with others
  - Establish a good relationship with others as a member of family, school and community
  - Solve the issues based on the principles of justice and fairness

- Social participation
  - Esteem one’s and others’ rights/Carry out one’s duty
  - Participate in the society, nation and international society and contribute to the development

Solid academic prowess

- National Language
  - Reading and writing of Chinese characters (Kanji)/Skills of summary, explanation, report, record, etc.

- Sociology
  - Names and locations of all prefectures, characteristics of each historical era, concepts of low and democratization

- Mathematics
  - Integral numbers, decimal numbers, common fraction/four arithmetic operations

- Science
  - Human-being, animals, plants, oxygen and carbon dioxide

- Integrated study
  - To interact with friends and family, become close to nature/To regulate one's daily life

- Music
  - Sound and rhythm/popular Japanese songs

- Art
  - Drawing with soft color patterns and various types of shapes

- Domestic Science & Technology
  - Designing, producing, information processing and having information moral
  - Basic cooking and functions of nutrients

- Foreign Language
  - Greetings, self-introduction, explanation, asking questions and showing application in English

- Improvements of physical ability (concentration, sustenance, flexibility, skills)
  - To acquaint oneself with sleeping, appetite, stress, disease, medicine, environmental health, accident, disasters

Examples of “Zest for Living” (Draft)

- Independence and self-reliance for individual life
  - Self-understanding
  - Self-reliance

- Emotional health
  - Emotional health

- Decision-making skill
  - Situation analysis

- Life planning skill
  - Future planning

- Relationship with others in school and family
  - Collaboration and responsibility
  - Sensitivity
  - Expression

- Relationship with the society for career and living in community
  - Responsibility, rights and work
  - Understanding of society, culture and natural environment
  - Association of language and information
  - Application of knowledge and technology

- Problem-identification and solving skill
  - Critical thinking
  - Creative thinking
Modes

- Curricular
- Activities outside classrooms
- Activities outside schools
- Overseas exchange
- Service learning (rural/communities of poverty)
- Activities in the cyberspace
- Assemblies
- Role modeling
Modes

- Collaboration in groups
- Project-based learning
- Problem-based learning
- .....
How does learning of non-cognitive competencies take place?

- Real-life experiences
- Implicit versus Explicit Learning
- Holistic versus Analytic approach
- Imitation and Enculturation
- Truth? Choice?

Socialization!
5

Challenges
Challenge I

What is learning?

1. Learning as meaning-making
   - The learner makes sense of all that he/her experiences and develops his/her own understanding of the world around.

2. Learning as knowledge construction
   - Learning is a process of the learners’ active construction of knowledge and NOT a transmission of knowledge.

3. Learning as individual undertaking
   - Different people learn differently
4 Learning from experience (Learning by doing)
   - Learning is based on individuals’ experience and prior knowledge; understanding and application are intertwined.

5 Learning as social cognition (Collaborative Learning)
   - Human knowledge is socially constructed. It is continuously improvable through collective intentional efforts in the relevant communities.

6 Learning as understanding
   - The test of learning is in understanding. Understanding is demonstrated by effective application.
Challenge II: Learning Outcomes

- Learning: Process or Outcome?
- What students have learnt and/or what students have experienced
- Do all students learn the same with the same experience?
- Do all learning outcomes occur immediately?
- Do all learning outcomes occur according to design?
- Are all learning outcomes direct consequences of the designed learning activities?
Challenge III
The Myth of Assessment

The Role of Assessment

Assessment = Improvement?
More assessments = Greater progress?
Competition/screening: Good or Bad?
Challenge III
The Myth of Assessment

What does assessment tell us?

Information – Ability
Knowledge – Understanding
Competency – Application
Challenge III
The Myth of Assessment

Modes of Assessment

- Paper-Pencil
- Projects
- Problems
- Creation
- Construction
- Portfolios
- ...

...
Challenge III
The Myth of Assessment

Modes of Assessment

- Graded Tests
- Pass/Fail
- Yes/No

Everything learnt could be measured. Right?
Everything learnt should be assessed. Right?
Challenge IV
Yesterday and Tomorrow

Cultural Heritage
The Assumed and the Unspoken
Revisiting Traditions with Science
If a nation wants to be competitive,

- It has to have a strong population!
- Individuals have to be prepared for the unpredictable future!
- Education should provide individuals with the generic capacity to cope with a precarious future!
After all ... 

**Industrial**
- analytic, regulated, structured, clear-cut, uniform, convergent, normative, neat, assertive and reducible to parameters

**Post-industrial**
- holistic, flexible, loose, fuzzy, plural, divergent, liberal, complex, speculative and tolerant of multiplex concepts
Thank you!

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Questions

1. What do you think is the major reason that non-cognitive skills enter the recent educational policy?
2. If you are asked to classify the con-cognitive skills, what would be the categories?
3. Who do you think are the partners for non-cognitive learning?
4. What kind of research do you think is most valuable for non-cognitive learning?