エキスパートシステムの実装およびそれらの応用について

| テーブル | エキスパートシステムの実装およびそれらの応用について |
EXPLORING THE FRONTIER OF INFORMAL OPEN LEARNING (IOL)

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Objectives

• To serve as a point of discussion about the next frontier of learning and education

• To offer a suggestion for an alternative learning approach
Traditional Education System

- Structured curriculum
- Standardised examinations
- Emphasise on academic achievement ("elitist" model)
- Produced in "batches"

The image was retrieved from http://www.exposingtruth.com/wp-content/uploads/2014/01/producinggraduates.png
Critics of Education System

Ken Robinson (Author, educationist):
- The system suppress diversity and creativity.
- Learning should be personalised, and not standardised.

Joichi Ito (Director, MIT Media Lab):
- Education is what people do to you and learning is what you do to yourself.
- People are more motivated to learn independently.

The image was retrieved from http://datafirstintelligence.com/wp-content/uploads/2015/09/TED-logo.png
Open Distance Learning (ODL)

• A breath of fresh air ..
• Break away from the constrains of physical classrooms
• Conduct class to large student population
• Reduced the dependency of students on teachers
• Retained characteristics:
  – Curriculum structure
  – Standardised examination

The image was retrieved from http://distance-educator.com/wp-content/uploads/MortarBoardComputers_01.jpeg
Alternative from the classroom: Problem Based Learning (PBL)

• Focus is shifted from the learning content to the problem to be solved

• Learners take control of their own learning

• PBL approach helps to break away from rigid curriculum structures

Tan, O.S. (2003). Problem-based Learning Innovation
Alternative from the Community: Maker Movement

- Extended from the extension of the Do-It-Yourself (DIY) culture
- Constructivism - emphasises on learning-through-doing
- Technology applications: product design, fabrication, calligraphy, movie making and software programming
Why Informer Learners?

- Moore (1973): more informal learners than formally registered students
- "Invisible" learners who have left formal education but continue to learn for career or leisure
- Self-directed in determining what and how they learn.
Informal Open Learning (IOL)

- No fixed syllabus
- No examination
- No certificate
- Lifelong
- Focus on value

The image was retrieved from http://www.growthengineering.co.uk/wp-content/uploads/2014/06/Many-people-chatting-about-everything-learning.jpg
Knowledge Management Approach

• Managing informal learning is difficult - it does not have fixed curriculum.

• There is a fixed pattern in the learning process

• Learning process involves flow of knowledge
Knowledge Management Approach

• Nonaka and Takeuchi (1999), SECI model

• The conversions of “tacit” and “explicit” knowledge across four quadrants

• Tacit knowledge - in the brains

• Explicit knowledge - codified and recorded
Value Creation

- Solve a problem
- Create a product
- Make life better
Environment for IOL

- **Socialising:** Space for meeting and discussion
- **Externalising:** Platform for sharing the recorded activities
- **Combining:** Facilities for previous work references and publications
- **Internalising:** Online learning contents searchable by functional topics
Possible IOL Framework

- Create an environment that encourages self directed learning

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<tr>
<td>External review</td>
<td>Complete portfolio</td>
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Increase in Values

Create an environment that encourages self directed learning.
Alternative to Exam & Certificate: Show your skills online

- The results of learning is reflected directly from the values of work (Flores, 2014)

- E-portfolio can serve a few purposes,
  - to validate the work
  - to advertise the capabilities of learners
  - to be used as record knowledge so that others can learn from the experience
Target Shift in Learning

- **Formal education:**
  - Standardised
  - Just-in-case
  - Pass examination
  - Qualification and assessment

- **Informal learning:**
  - Diversified
  - Just-in-time
  - Create value
  - Skill and capability

The image was retrieved from http://wsdwheel.com/wp-content/uploads/2014/04/just-in-time-.png
Bridge the Academia-Industry Gap

- Academic research are far ahead in time to be relevant to the industry
- Researchers who seek publication avoid “industrial relevant” projects
- The projects for informal learning should fill the gap in terms of industrial relevancy
- Project value should directly meet industry needs

The image was retrieved from http://m.c.lnkd.licdn.com/mpr/mpr/p/3/005/074/0f3/2ee21f7.jpg
Education Reform

- Almost all countries in the world are looking for education reform
- Usually education reforms started from lower education
- With informal learning, reform can also start from another end - the pool of experienced learners

Usual reform direction

Former Education

Adult informer learners

Primary  Secondary  Tertiary

Flexible · Affordable · Accessible
Benefits for School Dropouts

• More drop out of schools due to the increase in education costs or lack of interests

• Most of school dropouts have little chance to succeed (Carlozo, 2012)

• IOL can play the role in guiding dropouts to work on their interests and redevelop skills

The image was retrieved from http://preventhighschooldropouts.weebly.com/uploads/1/9/7/8/19787253/1771728_orig.jpg
Benefits for Sharing Economy and Aging Society

- Informal learners present themselves as service providers (as employee or self-employed) through the skills demonstrated.

- Retired personnel can be financially independent and continue contributing their skills or re-skill through sharing economy (Burns, 2013).

The image was retrieved from http://cdn.playbuzz.com/cdn/8c3d14b2-7e10-4df0-beae-361ab5c0e768/30ed3907-f061-45ea-8249-732c56696555.jpg
In the Nutshell

Informal Learning  Value creation

Sharing

→ Employment

→ Self employ
Possible Future Directions

• Improve usage of Self Directed and Problem Based Learning in the current system

• Introduce IOL in corporate training

• IOL in independent projects or Makers’ projects

The image was retrieved from http://top-10-list.org/wp-content/uploads/2013/09/following-the-right-path.jpg
Conclusion

- The quest for academic excellence must continue in traditional education.
- IOL can bridge between the industry and academic needs.
- IOL offers an alternative path for lifelong learners to take control of their learning.