Developments in Education for Information: Will "Data" Trigger the Next Wave of Curriculum Changes in LIS Schools?

Yaşar Tonta
Hacettepe University
Department of Information Management
06800 Beytepe, Ankara, Turkey
yunus.hacettepe.edu.tr/~tonta/tonta.html
yasartonta@gmail.com
@yasartonta
Plan

• Introduction
• Education for Information (1887-- )
• Data (science, analytics, mining, curation . . . )
• Data-centric curriculum changes in LIS education
• Conclusions
Introduction

- Information
- Data deluge
- Big data
- Information science: bridge between Math & Computer Engineering
- Bioinformatics, ecoinformatics, genomics. . .
- Scientomics ("the living existence is informational" (Del Moral et al., 2011))
Education for Information (1887-- )
First period: 1887-1963

- Columbia U. School of Library Economy (1887)
- ALA (1876), DDC (1876), LC (1897), LCSH (1909)
- Chicago U. School of Library Economy (1926) offering Ph.D. for the first time
- Library education was largely based on “apprenticeship”
- Focus was on **Information**
  - Courses on cataloging, classification and indexing
  - Technology was limited
Second period: 1964-1993

• Information explosion following WWII
• Computers, bibliographic databases, MARC
• Focus was on Information + Technology
  – Courses on programming languages, DBMS, information retrieval, etc.
• Name changes: UPitt LS became LIS (1964)
• ADI (1935) became ASIS (1968)
• Survival period (25% of LS/LIS schools closed in this period)
• “Pandra syndrome” (Van House & Sutton, 1996)
Third period: 1994--

• Internet, WWW, Google, mobile, digital natives, personalization
• Focus is on **Information + Technology + People**
  – Courses on social media, information seeking models, personalization (e.g., sharing, tagging, rating, etc.)
• Dropping “L” word (UC Berkeley SIMS, 1994; UMich SI, 1996)
• iSchools (2005--)
  – Research on “the relationship between information, technology and people”
  – “learning and understanding the role of information in human endeavors”
  – “I-dentity crisis” (Cronin, 2005)
Co-citation map of LIS and CS. Source: Yu and Baeg (2012, p. 549).
Research interests at iSchools

- computer information (incl. HCI & computing information, e.g., informatics);
- information retrieval and data mining;
- social media and information systems;
- education and information technology;
- information seeking and digital libraries;
- libraries and library services;
- data analytics and computing

Co-word map of the research interests at iSchools.
*Source: Holmberg, Tsou and Sugimoto (2013)*
iSchools Faculty PhDs (N=769)

- Computer Science: 30%
- Information: 11%
- Librarianship: 10%
- Soc. & Behav. Sci.: 9%
- Mgmt & Politics: 9%
- Education: 9%
- Humanities: 8%
- Communication: 7%
- Other: 5%

Source: Wiggins and Sawyer (2012, p. 13; chart is based on figures in the first column of Table 3)
Next . . .

- Internet of Things (IoT)
- Cloud computing
- “Industry 4.0”: “a collective term for technologies and concepts of value chain organization” which draws together Cyber-Physical systems, IoT, and cloud computing (https://en.wikipedia.org/wiki/Industry_4.0)

Data pyramid. Source: Gray (2009, p. xxvi)
Next . . . (2)

- Data intensive science (SKA generates 700TB of data per second)
- Big data: “high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of processing that enable enhanced insight, decision-making, and process automation” (http://www.gartner.com/it-glossary/big-data)
- Merger of digital archives and science-computing facilities (Mattmann, 2013, p. 474)
Data X

• Data science: “the transformation of data using mathematics and statistics into valuable insights, decisions, and products” (Foreman, 2014, p. xiv)

• Data analytics

• Data mining

• Data curation

• . . .
Research Data Management (RDM): “a wicked problem”?

- “. . . is one that is unique and highly complex whose definition itself is disputed by those involved, and whose solution is likely to remain unclear” (Cox, Pinfield & Smith, 2014, p. 2).
- Open data and open science, big data, disciplinary data diversity (Lyon & Brenner, 2015, p. 112).
- Need for data scientists, data curators, data miners . . .
- Yet, few LIS schools have data science/data curation programs/courses (UofAZ, UCB, UIUC, UNC-CH, SJSU).
Conclusions

• So, will “data” trigger curricular changes in LIS schools?
• Yes, it already has: One third of LIS schools offer data curation courses
• iSchools specialize in information retrieval and data mining, data analytics and computing, and informatics
• Data science, big data analytics and data mining programs exist mostly in non-LIS schools
• Too early to say if the “D” word (Data Science) will be added to the LIS schools’ names

References


Developments in Education for Information: Will "Data" Trigger the Next Wave of Curriculum Changes in LIS Schools?

Yaşar Tonta
Hacettepe University
Department of Information Management
06800 Beytepe, Ankara, Turkey
yunus.hacettepe.edu.tr/~tonta/tonta.html
yasartonta@gmail.com
@yasartonta

ICIML 2015, November 10-13, 2015, University of the Punjab, Lahore, Pakistan