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Research Data Management: Professional Education and Training Perspectives

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Overview

- My perspectives
- Current situation
- Key questions
- Roles and players
 - hybrid information specialists
 - librarians and data management
- Education and training models
- Way forward
- Next steps

My perspectives

- Head of Department of Information Studies
 - Leader of Academic & Research Libraries module
 - Research on hybrid information specialists, IL, KM
- Chair of Information Literacy Network
- Chair of Information Services Quality Team
- Chair of BAILER (academic subject association)
- Chair of MIMAS Board (national data centre)
- Former Director of Academic Services (Soton)
- Former University Librarian (Reading, Aston)



Current situation

- Limited coverage of data management in UG/PG curricula and in research training programmes
- Limited training provision, mainly specialised
- Most data specialists develop skills on the job
- Data centres acting as de facto training centres by exporting trained staff to other institutions
- Skills needs are multifaceted (domain expertise, technical knowledge and people skills) and perceived to be exceptionally broad and varied



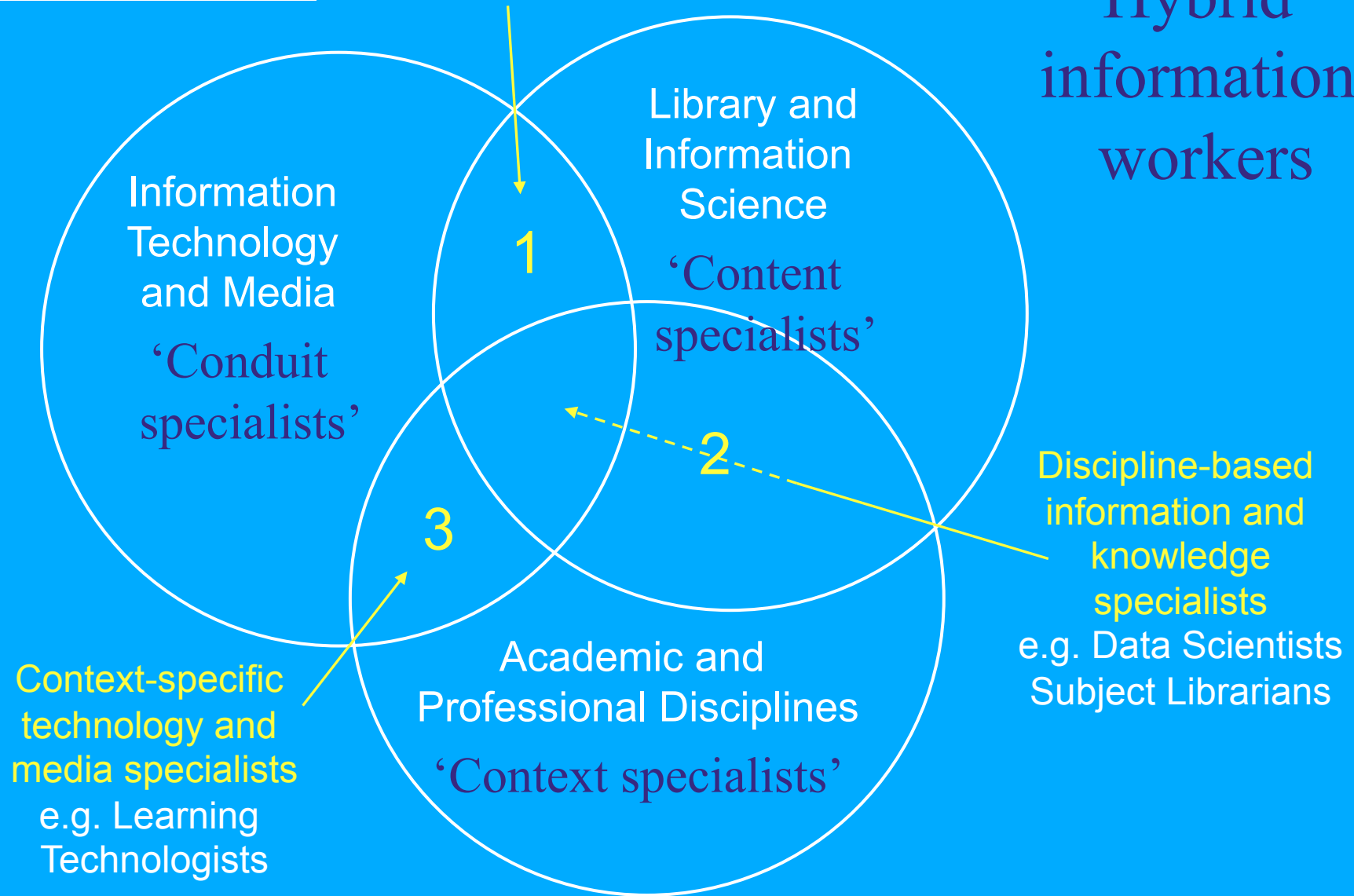
Key questions

Education and training for data management

- Who needs to be educated and/or trained?
 - Data creators/authors
 - Data scientists/specialists
 - Data managers/curators
 - Data librarians/archivists
 - Data users/re-users
- What types of provision are required?
- How will this be co-ordinated and funded?



E-content and digital library specialists
e.g. Repository Managers





Hybrid information specialists

- Boundary-spanning roles, ambiguous status, variety of generic and specific titles for same job
- Breadth and depth of competency requirements
 - Technical expertise, contextual understanding and (inter)personal abilities
 - Higher-order information competencies, continual upskilling and significant domain knowledge
- Knowledge and skills mainly acquired on the job, often boosted by specialist workshops/courses
- Interest in specialist educational programmes
 - Grounded in real-world practice, flexible delivery, affordable cost



Librarians and data management

- Federated model makes more sense for data
 - Data sets located in disciplinary centres of expertise
- Repository librarians
 - Potential role in providing repository infrastructure, articulating standards, supporting metadata creation, advising on IPR, institutional/publishers' policies, etc
- Subject librarians
 - Expected to be familiar with the terminology, methodologies and resources of their subject field
 - Now need to be aware of the data landscape of their subject area (in addition to the information universe)



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Professional Education and Training Models

Examples of recent and current provision



Health Informatics

- Large, broad very heterogeneous specialism
 - rapid growth from 2,500 in 1992 to 29,000 in 2006
 - includes IM&T staff, clinicians involved with systems and staff responsible for collecting, analysing, coding and disseminating data, information and knowledge
- c20 graduate-level programmes in UK (2000-)
 - Sheffield course joint venture by DIS and ScHaRR
 - attracting doctors, nurses, therapists, pharmacists, ICT specialists and library/information professionals
 - part-time, distance learning, employer/self-funded



Chemoinformatics @ Sheffield

- MSc with industry-based dissertation (3 months)
 - full-time, EPSRC-funded (c£0.5M), industry partners
 - programme not viable without upfront sponsorship
- MSc by Research with larger project (6 months)
 - recruiting only 2 or 3 self-funded students per year
- Annual introductory short course for industry
 - international audience, industry input, oversubscribed
- Introductory module for first-year Chemistry UGs
 - delivered by Information Studies staff to 60+ students



Information Literacy (Sheffield)

- Implicit in Research Council skills requirements
- Explicit Characteristics of Sheffield Graduates
- Formal objective in University L&T Strategy
- Customised information skills tutorials in VLE
- Embedded/integrated into UG and PG teaching
- Generic credit-bearing (elective) units in RTP
- Tailored training for UG, PGT and PGR students
- Core module on BSc IM, MSc IM and MA Lib
- Specialist (new) PGCert/PGDip/MA programme



Digital Library Management

- Several UK iSchools offer core/elective modules
- Sheffield offers PGCert/PGDip/MSc programme
- New Sheffield PGCert aimed at CPD market
 - Part-time, blended learning (2 one-week blocks, supported by e-learning via VLE/virtual classroom)
 - 2 specialist modules (Digital Multimedia Libraries, Strategy and Management of Digital Libraries)
 - extended supervised project, undertaken in the workplace over 6 months, with e-learning supervision and a series of assessed deliverables



Social Science Informatics

Proposal for new Sheffield Masters programme

- Combining Information Management and Information Systems modules with discipline-based informatics modules and dissertation, e.g.
 - Core modules on Information Resources & Information Literacy, Information Retrieval: Search Engines & Digital Libraries, Information Systems Modelling, Database Design
 - Elective modules in both disciplinary and generic specialisms (e.g. Educational Informatics, Geographic Information Systems; CMS, Digital Multimedia Libraries, Electronic Publishing, HCI)
 - Dissertation jointly supervised by Information Studies and the relevant collaborating department (e.g. Education, Geography)



Way forward (1)

Learning from information literacy/skills movement

- Make data skills a core academic competency
 - Graduate attributes, ULTAS, explicit RC requirement
- Further development of data handling elements embedded/integrated in UG and PGT curricula
- Create web-based online data skills tutorials
 - Customised with examples from different disciplines
 - Accessible via institutional VLEs, VREs and the Web
- Add credit-bearing data management RTP units
 - generic, with domain-specific activities/assessments



Way forward (2)

Building on informatics education experience

- Involve stakeholders in planning and delivery
 - Pump-priming funds to cover fees, T&S, publicity, etc
 - Experts contributing to teaching/training and projects
- Evolve formal education incrementally, e.g.
 - Short ‘immersion’ courses/summer ‘updating’ schools
 - Accredited modules (PGT, PGR and visiting students)
 - Specialist qualifications (PGCert/PGDip/MSc/MRes)
- Form partnerships/consortia of iSchools et al.
(to exploit scarce resources and specialist expertise)



Next steps

- Convene a National Data Management Education and Training Forum of key players
 - e.g. BAILER, DCC, IDEA, JISC, RCUK, RIN, SCONUL/RLUK, Vitae (UKGrad) + practitioners
- Develop a directory/database of data expertise to facilitate expert input to training and education
- Identify existing generic and discipline-based training materials/learning resources and explore scope for making available via OA repository and incorporating into new courses/programmes



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