Information literacy competencies of health care professionals in Ireland: education, policy and practice

Kate Kelly

Royal College of Surgeons in Ireland (RCSI)

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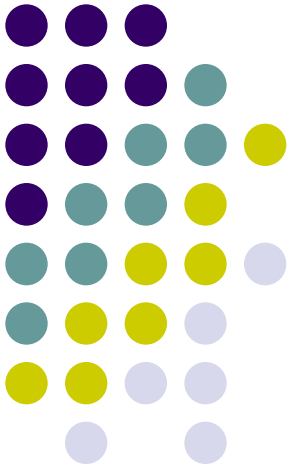


Compare:

Information Literacy

- Recognise an information need,
- Find information
- Critically evaluate information and
- To use information ethically

(Source:CILIP definition)

http://www.cilip.org.uk/policyadvocacy/learning/informationliteracy/definition

Evidence-based Practice

1. Define the question
2. Search for the evidence
3. Critically appraise the evidence
4. Apply the evidence to the patient or situation
5. Reflect on the process

(Source: Sackett, D.et al. Evidence-based Medicine: how to practice and teach EBM. 2000

Background:

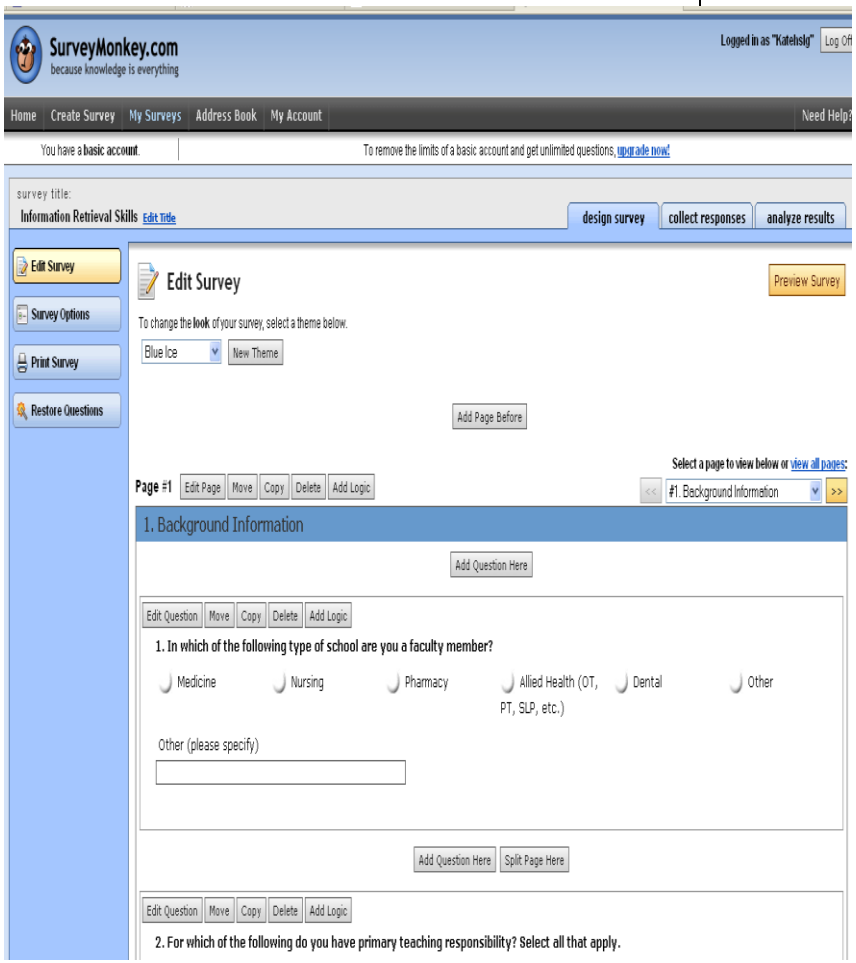
- Recommendations in Irish policy documents e.g. “ensure that doctors are practised in information retrieval skills required by evidence-based practices”
- Across disciplines, undergraduate and postgraduate level
- Where do providers get these skills?
- Exploratory study

Literature Review:

- Best practices, e.g., ACRL
- International health literature – high degree of awareness across disciplines
- Growing interest in developing research base
- Quality of studies questionable
- Systematic reviews identify research gaps
- Variable terminology
- No comparable published studies in health sciences in Ireland
- Problem-based learning links

Methods:

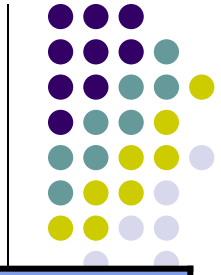
- Online questionnaire
  - SurveyMonkey
- Faculty responsible for:
  - Informatics or
  - Research methods or
  - Evidence-based practice
- 35 Schools at 14 institutions
  - 6 Medicine
  - 14 Nursing
  - 3 Pharmacy
  - 2 Dental
  - 10 Allied Health
- Total sample size 119 individuals identified via subject librarians, departmental web sites and colleagues (3 x larger than estimated)



Results: Respondents

- 42 respondents, overall response rate 35%
  - Medicine (11), Nursing (19) Allied Health (11) Pharmacy (1)
- 73% (29) taught EBM; 70% (28) taught research methods; 13 (33%) taught informatics – cross over between EBM and research methods
- Average number of years teaching
  - Medicine 9 yrs; Nursing 5.5 yrs; Allied Health 5 yrs; Pharmacy 6 yrs.

Results: Familiarity with concepts



	Never heard of	Heard of don't know meaning	Heard of some under-standing	Fully aware & fully understand
Information Literacy	**5 % (2)**	**5% (2)**	**36% (14)**	**54% (21)**
5 Steps of EBP	**8% (3)**	**10% (4)**	**22% (9)**	**60% (24)**
PICO	**45% (18)**	**5% (2)**	**8% (3)**	**42% (17)**
CATS	**35% (14)**	**5% (2)**	**28% (11)**	**32% (13)**

Results: How skills taught?

	Not Taught	Most Common Method
Question Formulation	8% (3)	Lecture 74% (29) Hands on 46%(18)
Information Retrieval	3% (1)	Hands on 73% (29) Demo 63%(25)
Evaluation of Information	3% (1)	Lecture 68% (26) Hands On 47% (18)
Critical Appraisal	0%	Lecture 80% (31) Hands on 56% (22)
Information Management	11% (4)	Lecture 64% (23) Hands on 36% (13)

Results: How skills assessed?

	Not Taught	Not Assessed	Graded Assignment	OSCE
Question Formulation	5% (2)	13% (5)	64% (25)	8% (3)
Information Retrieval	5% (2)	19% (7)	62% (23)	5% (2)
Evaluation of Information	5% (2)	16% (6)	71% (27)	5% (2)
Critical Appraisal	3% (1)	5% (2)	85% (33)	3% (1)
Information Management	11% (4)	17% (6)	57% (20)	3% (1)

Results: Who teaches?

	I Do	Other Faculty	Librarian	Lib/Fac Combo
Question Formulation	74% (29)	31% (12)	8% (3)	10% (4)
Information Retrieval	38% (15)	15% (6)	53% (21)	45% (18)
Evaluation of Information	63% (24)	24% (9)	18% (7)	26% (10)
Critical Appraisal	77% (30)	44% (17)	3% (1)	3% (1)
Information Management	43% (17)	35% (14)	15% (6)	30% (12)

Who assesses?

	I Do	Other Faculty	Librarian	Lib/Fac Combo
Question Formulation	76% (29)	37% (14)	0%	3% (1)
Information Retrieval	72% (28)	33% (13)	0%	8% (3)
Evaluation of Information	74% (28)	40% (15)	0%	5% (2)
Critical Appraisal	84% (32)	40% (15)	0%	3%(1)
Information Management	68% (24)	36% (13)	0%	0%

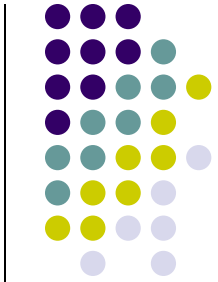
Results: Importance of skills?

	% rating skill as 5=essential	Average rating on scale of 1-5
Question Formulation	64% (25)	4.38
Information Retrieval	93% (37)	4.85
Evaluation of Info	82% (32)	4.74
Critical Appraisal	87% (34)	4.79
Information Management	65% (26)	4.55

Results: Skills acquirement

Statement	% saying it best describes their opinion
Students already have these skills	0%
Taught once in curriculum & assessed	5% (2)
Taught once in curriculum & not assessed	0%
Stand alone sessions outside curriculum	2% (1)
Taught in skill building modules across the years & assessed	73% (29)
Taught in skill building modules across the years & not assessed	20% (8)

Background of faculty who teach information retrieval



Don't teach information retrieval skills	19% (7)
No formal training – self taught	49% (18)
Informatics or bioinformatics	8% (3)
Library or information science	3% (1)
Computer Science	0%
Other (included CPD; MD training; MSc in Research & Evaluation; Cochrane Review author; “trained by librarians”)	22% (8)

Skills rated as “important”, “v. important” or “essential” by 65% or more of respondents: Basic Database Skills

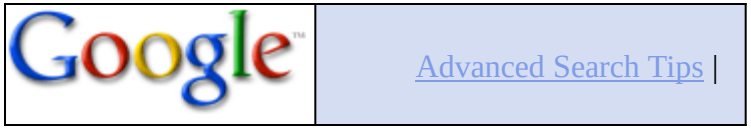
- Find a journal article by words in the title of the article
- Find all journal articles written by a particular author
- Find journal articles on a specific topic using subject headings from a controlled vocabulary, e.g., MESH, CINAHL, EMTREE
- Find journal articles in a literature database using keywords (their own words)
- Be able to combine controlled vocabulary and keywords to find articles
- Use Boolean operators (AND, OR,NOT)
- Limit results by common limits such as gender, date, age group, publication type, and language

Skills rated as “important”, “v. important” or “essential” by 65% or more of respondents: Advanced Database Skills

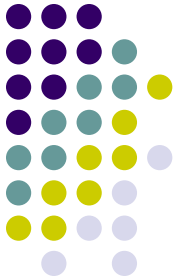
- Understand the structure of a database record
- Be able to field search
- Search for a specific phrase
- Use wildcards for variant spellings
- Use truncation or stemming to search for variant words or plurals
- Use subheadings to qualify a search term
- Narrow a search using specific commands such as “focus”
- Broaden search results using specific commands such as “explode”
- Use citation searching
- Understand how to develop a comprehensive search strategy

Skills rated as “important”, “v. important” or “essential” by 65% or more of respondents: Search Engines

- Use more than one search engine
- Use advanced search features of Internet search engines such as date, domain, URL, document type
- Force a phrase match
- Include/exclude words from results



Skills rated as “important”, “v. important” or “essential” by 65% or more of respondents: Citing and Catalogues



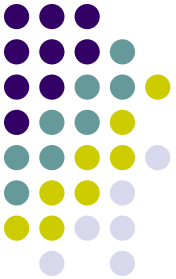
Citing

- Use citation manager software, e.g., Endnote, Refworks, to manage and manipulate citations
- Reference their sources appropriately

Catalogues

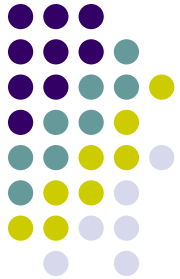
- Search for a specific book by title words
- Search for books by a specific author
- Search for books on a specific topic
- Find a book on the shelf by call/class number
- Interpret information about electronic journals in a library catalogue

Not important/understood?



Skill	Not Important	Not Understood
Use adjacency or proximity operators	30% (11)	22% (8)
Use clinical retrieval filters	22% (8)	24% (9)
Understand vocabulary mapping & algorithms	27% (14)	14% (5)
Understand precision & recall	23% (8)	19% (7)

Some Quotes:



- "Many students require focused information retrieval skills which each module seeks to identify for them however this would work much better if it were built on the basis of having a study skills/information retrieval skills programme completed"
- "This caused me to reflect on course and what needs to be improved"
- "Some of the skills/competencies I have said are important or essential for a medical graduate I would not be able to do myself as I either haven't been trained or have forgotten how to do (atrophy with time), and information retrieval has developed substantially in the last 10-15 years, so health professionals need to have their skills updated as well- an essential part of continuing medical education"
- **"Most if not all of the topics included should be essential learning for all graduate health professionals"**

Recommendations:

1. Make the acquisition of these skills explicit outcomes of health sciences curricula and give equal attention to all, currently teaching critical appraisal dominates
2. Skills be taught in skill building modules and assessed
3. Faculty need to be more aware of what is actually being taught in “library sessions” - active rather than passive collaboration
4. Librarians teaching information retrieval should have explicit learning outcomes for information retrieval sessions
5. Librarians should assess information retrieval skills and information literacy skills should be assessed on an individual basis rather than within group project type assessment
6. More research
7. Establish a working group or community of practice to progress these findings.

Information Literacy

Limitations of the Study:

- Survey question issues
- Face validity only
- Timing – faculty availability during Summer
- Overall response rate
- No distinction between undergraduate and postgraduate
- Lack of balance of methodology, e.g. focus group methodology to explore and clarify terminology and understanding
- Pharmacy results based on one respondent
- No dental

Contact Details:

Kate Kelly

Librarian

Royal College of Surgeons in Ireland

Email: katekelly@rcsi.ie

Thank You!