Students' information skills in the Latvia University of Agriculture

Natalja Vronska Dr.paed.
Latvia University of Agriculture, Faculty of Information Technologies, Latvia
Natalja.Vronska@llu.lv

Abstract: The advent of the internet along with various other electronic and digital resources has highlighted the issues. Some students are using the internet as their first port of call beyond the reading list. They need to address questions relating to the provenance, accuracy and reliability of the material, which are largely unnecessary in established areas of academic publishing. The information in books, journals and other printed forms has been subject to a variety of quality assurance processes - reputable publishers, authors with academic credentials, texts recommended by tutors, careful library spending to ensure a match of material to need. With the internet sources, none of the quality assurance mechanisms can be assumed. The onus is on the user to apply a critical faculty.

Information technology has made information superficially much easier to access and use. By reducing all information to a standard format the web page it masks the differences in the way in which information is generated, and differences in the kind of information it is supplying.

The information skills model attempts to show the relationships between the competent information user at the base level, and the much more advanced idea of information literacy.

The aim of the research was to clarify first year and postgraduate students' information skills. Data processing will be used chi-square and Mann-Whitney methods. First year students will largely be at the bottom of the information skills model, whilst postgraduate and research students will aim to be towards the expert end.

Keywords: Information skills, information literacy, information competence, pillars

Introduction

Information competencies are a key factor in lifelong learning. They are the first step in achieving educational goals. The development of such competencies should take place throughout people lives, especially during their educational years. Through the creation, with faculty, of curriculum-integrated programs, lecturer should actively contribute to the students' learning processes in their search to enhance or develop the skills, knowledge and values needed to become lifelong learners.

Information competencies are a group of skills to identify an information need, as well as retrieving, evaluating, using and reconstructing the knowledge contents of the retrieved information resources. Synonyms: information skills, information capabilities, information literacy.

A working definition of information literacy as proposed in 2004 by the UK-based Chartered Institute of Library and Information Professionals (CILIP): *information literacy* is knowing when and why you need information, where to find it, and how to evaluate it, use and communicate it in an ethical manner (CILIP, 2004). *Information literacy* is information competencies that imply the capacity to identify when information is needed, and the competence and skill to locate, evaluate and use information effectively. Synonyms: information skills, user education, information competencies (Lau, 2006).

Information skills could be defined as the capacity to identify an information need and the aptitude to satisfy it. Information competence is the skill or aptitude to do something; while ability is regarded as the capacity and willingness to do something. Synonyms: information competencies, information capacity (Diccionarios Real Academia Española, 2005).

A recent paper by Sheila Corrall, Librarian of the University of Reading, had highlighted the lack of consideration given to information skills in many of the recent publications and discussions concerning the 'key skills' area (Corrall, 1998).

The work of BECTA (British Educational Communications and Technology Agency) has gone a long way to establishing information skills as a recognised aspect of the national curriculum for primary and secondary schools (BECTA, 2013).

Information handling, defined by Corrall, includes information sources, evaluation criteria, navigation methods, manipulation techniques, and presentation issues. This kind of distinction is supported by others, who also challenge the tendency to equate computers with information, and hence to mistake computer literacy for information literacy. "This is a dangerous myth, for it assumes that information is only that which is storable and manipulable in a computer" (Taylor, 1986).

The advent of the internet along with various other electronic and digital resources has highlighted the issues. Some students are using the internet as their first port of call beyond the reading list. They need to address questions relating to the provenance, accuracy and reliability of the material, which are largely unnecessary in established areas of academic publishing. The information in books, journals and other printed forms has been subject to a variety of quality assurance processes - reputable publishers, authors with academic credentials, texts recommended by tutors, careful library spending to ensure a match of material to need. With the internet sources, none of the quality assurance mechanisms can be assumed. The onus is on the user to apply a critical faculty.

Doherty describing information as an essential commodity for survival, and states "It is our intention to teach our users to become independent and informed information consumers on their way to becoming lifelong learners" (Doherty, 1999).

The aim of the research was to clarify first year and postgraduate students' information skills. The subject of evaluation - information skills, remains unchanged and the quantity of respondents evaluating information skills is changing, as survey was carried out in first-year bachelor students and master course students.

Methodology

In 1999, The SCONUL Working Group on Information Literacy published "Information skills in higher education: a SCONUL position paper", introducing the Seven Pillars of Information Skills model (SCONUL, 1999) and were updated in 2011 (SCONUL, 2011).

The information skills model (Figure 1) attempts to show diagrammatically the relationships between the competent information user at the base level, and the much more advanced idea of information literacy. It is expected that as a person becomes more information literate they will demonstrate more of the attributes in each pillar and so move towards the top of the pillar. The pillars show an iterative process whereby information users' progress through competency to expertise by practising the skills. Only those at the higher end will be practising the seventh skill level.
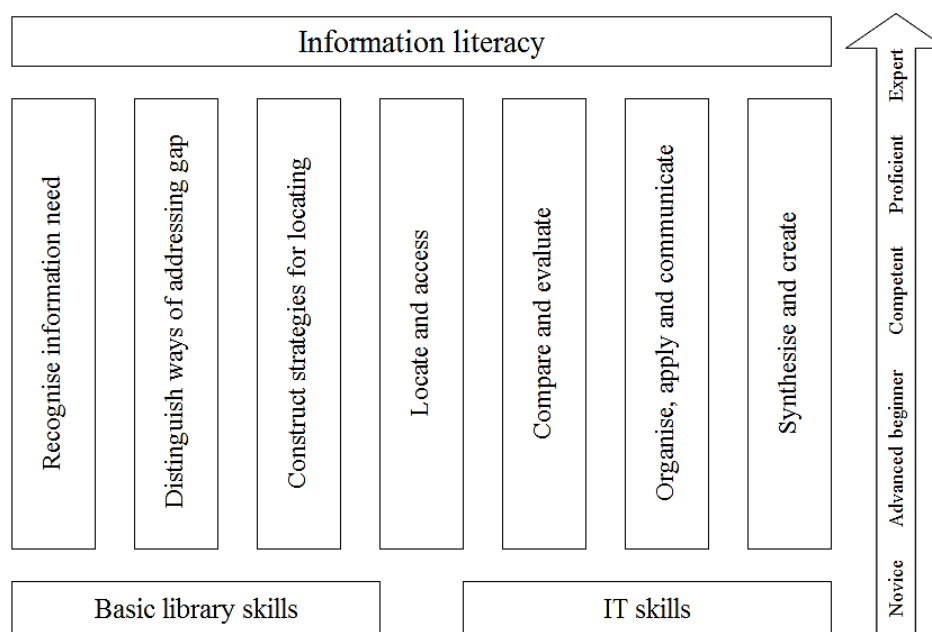

Figure 3. Information skills model (SCONUL, 1999)

At the base of the model are the twin fundamental building blocks of basic library skills and basic IT skills. The former is very much apparent in the user education programmes of academic libraries, the latter can be seen in developments such as the European Computer Driving Licence. Between the base and the higher level concept of information literacy appear the seven headline skills and attributes, the iterative practice of which leads from being a competent user to the expert level of reflection and critical awareness of information as an intellectual resource.

Any information literacy development must therefore also be considered in the context of the broad information landscape in which an individual operates and their personal information literacy landscape (Bent, Gannon-Leary, 2007).

The model is conceived as a three dimensional circular "building", founded on an information landscape which comprises the information world as it is perceived by an individual at that point in time (Figure 2).

The picture is also coloured by an individual's personal information literacy landscape, in other words, their aptitude, background and experiences, which will affect how they respond to any information literacy development (SCONUL, 2011).
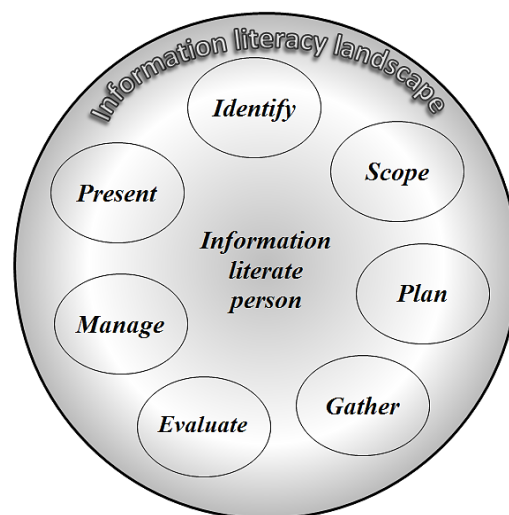

Figure 4. Seven pillars of information literacy (SCONUL, 2011)

The circular nature of the model demonstrates that becoming information literate is not a linear process; a person can be developing within several pillars simultaneously and independently, although in practice they are often closely linked.

This model defines the core skills and competencies (ability) and attitudes and behaviours (understanding) at the heart of information literacy development in higher education.

Survey was conducted among 36 first-year students and 20 master course students of Latvia University of Agriculture. A one-time inquiry type survey was performed, the goal of which was to use the obtained information in describing the whole statistical body.

Questions for survey information skills were weighted differently according difficulty levels, identical seven pillars. Specifically, was posed the following research questions:

First pillar – *identify*: Can you determine when to perform the work need more information? Can you independently determine your level of knowledge on a search topic?

Second pillar – *scope*: Can you describe the different types of information source and to choose a more suitable? Can you use a new, previously never seen before information sources?

Third pillar – *plan*: Can you create a plan to search for information? Can you determine suitable methods of search strategy?

Fourth pillar – *gather*: Can you use ICT (free & paid resources) to collect new data? Can you exchange of information cooperate with different organizations?

Fifth pillar – *evaluate*: Can you evaluate the quality and objectivity of the finding information? Can you critically evaluate your discoveries?

Sixth pillar – *manage*: Can you use citations and references? Do you know the conditions infringement of copyright?

Seventh pillar – *present*: Can you summarize the finding information to create a new base of knowledge (concept)? Can you choose the suitable place of publication of your research?

The SPSS computer program was used for mathematical processing and analysis of the data. The mathematical processing of the data was carried out by using describing statistics. To clarify equal distribution of the answers and conformity with the theoretical distribution of data, a chi-square test was performed with each selection.

Results and discussion

The survey was conducted with respondents to gain an understanding their experiences about information skills. The answers to the survey questions are summarized by seven pillars – identify, scope, plan, gather, evaluate, manage and present. The answers frequency from respondents to questions about information skills (*yes, I'm sure, I know* or *no, I'm not sure, I know*) can be seen in Figure 3.
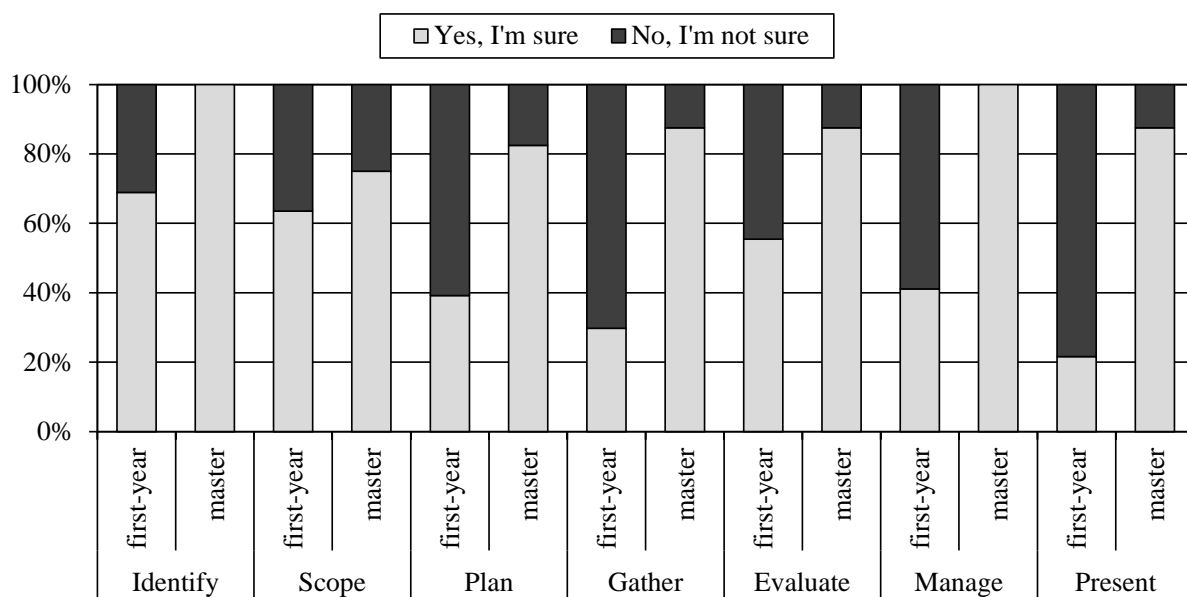

Figure 3. Respondents answer to questions about information skills

Some students clearly recognize deficiencies in their information literacy preparation. For example, researcher D. Peter realizes the survey of 900 college students, found that 40 percentages of them indicated they had some gaps in their research skills (Peter, 2005). Other research, however, has shown that students with below-proficient information skills levels tend to greatly overestimate their information skill levels (Gross & Latham, 2007; Gross & Latham, 2011).

Studies using more objective measures of information literacy skills suggest that students may not be as competent as they report. For example, the Educational Testing Service, found that, of 3000 college students and 800 high school students, only 13 percentages demonstrated knowledge in information skills on the ICT (Foster, 2006).

The research found students perceived the phenomenon of students' learning information skills as ways of completing and fulfilling their classroom assignments; which are essential for the students to construct identity in the context of their classroom and becoming competence in their field of study.

Using the information to complete and fulfil their classroom assignments and assessments, students further believed that they actually engaged in a meaningful experience, in which their learning endeavours were recognized as competence in their field of study (Aidah, 2010).

The answers frequency from respondents were statistically analysed with the help of chi-square test, with a hypothesis of correspondence of the observed data to the theoretical data (Table 1 - 2).

Table 1

Chi-square test statistic questions 1-7

	Question number						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Asymptotic significance (first-year students)	0.000	0.622	0.005	0.622	0.005	0.869	0.033
Asymptotic significance (master course students)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1 - Can you determine when to perform the work need more information?

2 – Can you independently determine your level of knowledge on a search topic?

3 – Can you describe the different types of information source and to choose a more suitable?

4 – Can you use a new, previously never seen before information sources?

5 – Can you create a plan to search for information?

6 – Can you determine suitable methods of search strategy?

7 – Can you use ICT (free & paid resources) to collect new data?

Table 2

Chi-square test statistic questions 8-14

	Question number						
	8	**9**	**10**	**11**	**12**	**13**	**14**
Asymptotic significance (first-year students)	0.005	0.622	0.411	1.000	0.033	0.033	0.000
Asymptotic significance (master course students)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

8 – Can you exchange of information cooperate with different organizations?

9 – Can you evaluate the quality and objectivity of the finding information?

10 – Can you critically evaluate your discoveries?

11 – Can you use citations and references?

12 – Do you know the conditions infringement of copyright?

13 – Can you summarize the finding information to create a new base of knowledge (concept)?

14 – Can you choose the suitable place of publication of your research?

It can be concluded that with the probability of 95%, answers from question number 2, 4, 6, 9, 10 and 11 are distributed evenly (p-value (asymptotic significance) > 0.05), thus the answers from respondents didn't differ significantly. That means that first-year students are not sure that they know the necessary information skills.

Since the master course students' p-value (asymptotic significance) in all cases is less than 0.05, with a probability of 95% it can be concluded that the amount of respondent answers varies significantly and is not distributed evenly. Statistically significant prevalence was for the answer *yes, I'm sure, I know* in the sample 'master course students'.

Conclusions

This research presents a new way of thinking about how to improve student learning in both traditional and distance learning environments. Moreover, public and national libraries may to put more efforts to increase tertiary students' awareness to use their resources and facilities as a supplementary to their university libraries.

Findings from this research may also be transferable to understanding the development of information skills in other user populations, such as children and seniors.

The findings may be applied to encourage higher academic achievement by first-years students, create more informed students and increase the number of university graduates who are prepared to go in master course and PhD programs, as well as compete in the marketplace and become lifelong learners.

Bibliography

1. Aidah A.K. (2010). Women's way of learning information skills in Malaysian higher education. *Procedia – social and behavioral sciences.* Vol. 7 [online] [10.10.2013]. Available at http://www.sciencedirect.com/science/article/pii/S1877042810020884
2. Bent M., Gannon-Leary P., Webb J. (2007). Information literacy in a researcher's learning life: the seven ages of research. *New Review of Information Networking*, Vol. 13 (2), pp. 81-99.
3. *BESTA. Department of Education.* (2013). [online] [09.10.2013]. Available at http://www.education.gov.uk/
4. CILIP (2004). Information literacy definition. [online] [09.10.2013]. Available at http://www.cilip.org.uk/cilip/advocacy-campaigns-awards/advocacy-campaigns/information-literacy/information-literacy
5. Corrall S. (1998). Key skills for students in higher education. *SCONUL Newsletter*, Vol. 15, pp. 25-29.
6. *Diccionarios Real Academia Española* (2005). (Royal Spanish Academy) [online] [09.10.2013]. Available at http://rae.es/recursos/diccionarios/draehttp://www.rae.es/rae.html (In Spain)
7. Doherty J.J., Hansen M.A., Kaya K.K. (1999). Teaching information skills in the information age: The need for critical thinking. *Library philosophy and practice*, Vol. 1(2), Spring.
8. Foster A.L. (2006). *Students Fall Short on 'Information Literacy,' Education Testing Service's Study Finds*. [online] [09.10.2013]. Available at http://chronicle.com/article/Students-Fall-Short-on/27038
9. Gross M., Latham D. (2007). Attaining information literacy: an investigation of the relationship between skill level, self-estimates of skill, and library anxiety. *Library & Information Science Research.* Vol. 29, Issue 3. [online] [10.10.2013]. Available at http://www.sciencedirect.com/science/article/pii/S0740818807000679
10. Gross M., Latham D. (2011). What's skill got to do with it? Information literacy skills and self-views of ability among first year college students. Journal of the American society for information science and technology. Vol. 63, Issue 3. [online] [10.10.2013]. Available at http://onlinelibrary.wiley.com/doi/10.1002/asi.21681/full
11. Lau H. (2006). *Guidelines on information literacy for lifelong learning*. [online] [09.10.2013]. Available at http://www.ifla.org/files/assets/information-literacy/publications/ifla-guidelines-en.pdf
12. Peter D. (2005). *Rising to the Challenge: Are High School Graduates Prepared for College and Work? A Study of Recent High School Graduates, College Instructors, and Employers*. [online] [11.10.2013]. Available at http://www.achieve.org/files/pollreport_0.pdf
13. SCONUL (1999). *Information skills in higher education: a SCONUL position paper*. Prepared by the Information Skills Task Force, on behalf of SCONUL. [online] [10.10.2013]. Available at http://www.informationliteracy.org.uk/information-literacy-definitions/sconul-seven-pillars-of-information-literacy/
14. SCONUL (2011). *The SCONUL seven pillars of information literacy: A core model for higher education.* [online] [10.10.2013]. Available at http://www.sconul.ac.uk/sites/default/files/documents/researchlens.pdf
15. Taylor R.S. (1986). *Value added processes in information systems*. Norwood, NJ: Ablex.