Griffith UNIVERSITY

Information Literacy Toolkit

Purpose of this Toolkit

The Toolkits developed by members of the Griffith Graduate Project are intended primarily for academic staff. They offer an overview of some of the main issues related to developing students' graduate skills during their degree studies.

They draw heavily on existing literature and current practice in universities around the world and include numerous references and links to useful web resources.

They are not comprehensive 'guides' or 'how to' booklets. Rather, they incorporate the perspectives of academic staff, students, graduates and employers on the graduate skills adopted by Griffith University in its Strategic Plan, 2003-2007 in the *Griffith Graduate Statement:*
http://www.griffith.edu.au/ua/aa/plans/docs/strategicplan2003-2007.pdf

This Toolkit, *Information Literacy*, focuses on how you can help students to access, retrieve, manage and evaluate information.

This toolkit, together with others in the series including:

- Critical Evaluation;
- Oral Communication;
- Professional Skills;
- Problem-Solving;
- Teamwork; and
- Written Communication;

can also be accessed on the Web at: http://www.griffith.edu.au/centre/gihe/griffith_graduate

Developed by Mandy Lupton, Clare Glanville, Phillip McDonald and Di Selzer in conjunction with members of the Griffith Graduate Project, Griffith University.

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Why your students need information literacy

Definition

"Information literacy is a way of learning through engaging with information. Information literacy includes 'library research skills' and 'IT literacy' but it is broader than these. Information literacy is not just about finding and presenting information, it is about higher order analysis, synthesis, critical thinking and problem solving. It involves seeking and using information for independent learning, lifelong learning, participative citizenship and social responsibility."

Lupton, M. (2004). *The Learning Connection.* Adelaide: AusLib Press.

Why students need information literacy

If you expect your students to:

- read widely;
- develop an argument informed by varied sources and multiple perspectives;
- use evidence to back up an argument;
- make connections between ideas and concepts;
- synthesise and integrate information;
- cite and reference consistently and correctly;
- evaluate the trustworthiness of information;
- critique the quality of information in regard to bias, viewpoint and perspective;
- explore and use primary and secondary sources;
- manage and organise data and information;
- collect and analyse data;
- contextualise data and evidence with regard to the relevant literature;

then they need highly developed skills in information literacy.

Would you also like students to use information and communications technology to search for, process, present and communicate information? Then they may need to:

- use the web, library databases and catalogues;
- word process;
- use visual presentation software;
- communicate via email and electronic discussion boards;
- analyse and present data;
- manipulate and present images, video and audio; and
- create websites.

INFORMATION LITERACY

Embedding information literacy into the curriculum is essential because of the information explosion and the need to access electronic sources of information. This has made it critical that evaluation of resources, computer literacy and use of electronic sources be integrated into the curriculum.

Information literacy:

should be structured and sequenced throughout the undergraduate degree. "It is the cumulative experience from a range of subjects and learning experiences which creates the information literate person."

Bruce, C. (1994). *Information literacy blueprint*. (Retrieved from the Web 16th September, 2004) http://www.gu.edu.au/ins/training/computing/web/blueprint/content_blueprint.html

You need to create opportunities where students can practise doing this in your course and throughout their degree.

Information seeking involves:

- seeking;
- locating;
- selecting;
- evaluating;
- organising; and
- managing information.

Information using involves:

- analysing;
- synthesising;
- creating;
- learning;
- problem solving;
- decision making; and
- critical thinking.

Presenting information involves:

- choosing appropriate media and formats; and
- using a range of IT applications.

Information:

is not neutral. It is crucial to encourage students not only to critically evaluate their own information use, but also to examine the assumptions, values and beliefs inherent in the information and technologies they are using.

"Information literacy is about 'learning *with* and *through* information' but it should also include 'learning *about* information and *about* knowledge'."

Kapitzke, C. (2003). "*In*formation literacy: A positivist epistemology and a politics of *out*formation." *Educational Theory 53*(1): 37-53 p. 46.

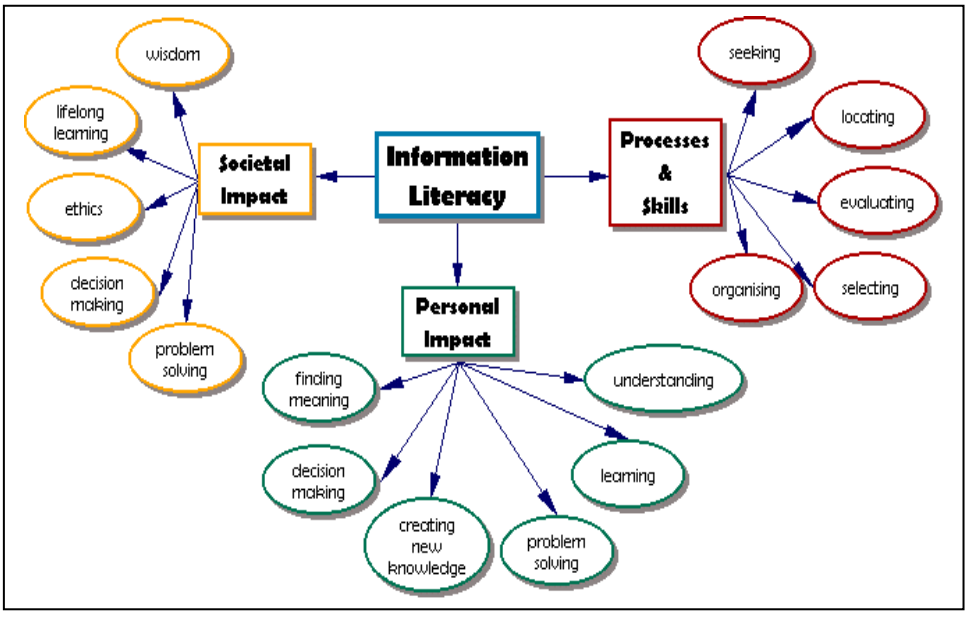
The information literacy connection

Information literacy is more than personal processes, skills and lifelong learning. It is also about using information for social responsibility.

Information literate people:

- "engage in independent learning through constructing new meaning, understanding and knowledge;
- derive satisfaction and personal fulfilment from using information wisely;
- individually and collectively search for and use information for decision making and problem solving in order to address personal, professional and societal issues; and
- demonstrate social responsibility through a commitment to lifelong learning and community participation."

Australian and New Zealand Institute for Information Literacy and Council of Australian University Librarians (2003). *Australian and New Zealand information literacy framework. Principles, standards and practice.* Adelaide, Australian and New Zealand Institute for Information Literacy.
http://www.caul.edu.au/info-literacy/InfoLiteracyFramework.pdf



The information literate person

- "recognises the need for information and determines the nature and extent of the information needed;
- finds needed information effectively and efficiently;
- critically evaluates information and the information seeking process;
- manages information collected or generated;
- applies prior and new information to construct new concepts or create new understandings; and
- uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information."

Australian and New Zealand Institute for Information Literacy and Council of Australian University Librarians (2003). *Australian and New Zealand information literacy framework. Principles, standards and practice.* Adelaide, Australian and New Zealand Institute for Information Literacy. (Retrieved from the World Wide Web 16th September, 2004) http://www.caul.edu.au/info-literacy/InfoLiteracyFramework.pdf

Information literacy:

"…is a means of personal empowerment. It allows people to verify or refute expert opinion and to become independent seekers of truth. It provides them with the ability to build their own arguments and to experience the excitement of the search for knowledge. It not only prepares them for lifelong learning; but, by experiencing the excitement of their own successful quests for knowledge, it also creates in young people the motivation for pursuing learning throughout their lives."

American Library Association Presidential Committee on Information Literacy. (1989). *Final Report.* Chicago: American Library Association, p. 2. (Retrieved from the World Wide Web 16th September, 2004) http://www.ala.org/ala/acrl/acrlpubs/whitepaper/presidential.htm

Did you know:

- that many students use web search engines as their first strategy in finding information?
- that students regard the web as a good way of finding out a range of perspectives on a topic?
- that some students search to back up an existing argument while others explore the topic and develop an argument as they search?
- students regard evidence as statistics, facts, figures, opinions, ideas, perspectives?

Lupton, M. (2004). *The Learning Connection.* Adelaide: AusLib Press

What employers and students say about information literacy

Employers' comments

The information literate person would need:

"The ability to research, to analyse and to interpret and a knowledge of local repositories, so if I had to ask them to go and research x, y and z, they know there are places beyond the University library, they also know how to get in through a web, and use a catalogue."

(Employer of Griffith Graduates, 2003)

"Research and report writing - obviously for skills on the job they need to know how to research, they need to know how to put it into a format that is obviously understandable. And then basic communication, such as the use of email, Microsoft office packages and technical equipment, how to use overhead projectors, how to use the computer, for instance - those kinds of skills so that they can get in there and easily pick up the role."

(Employer of Griffith Graduates, 2003)

"Mostly what we do is applied research…you have got to know initially where to look for the information while that can be guided, the person has to be self-directed so they trundle off and gather this massive amount of information."

(Employer of Griffith Graduates, 2001)

"To be able to access both internal and external databases and networks around the world to gain the latest ideas from the Internet, from academic institutions. They need to be able to build networks, and that requires give and take, communication skills again, and IT skills, and, slightly to our surprise, we find that a lot of graduates do not have the IT skills that we might now expect of today's generation."

Employer interviewed in Harvey, L., Moon, S., & Geall, V. (1997). *Graduates' Work: Organisational Change and Student Attributes.* (Retrieved from the World Wide Web on 16 September 2004)
http://www.uce.ac.uk/crq/publications/gw/gwch6.html

Students' comments

The information literate person would be:

"An ideal information user would be able to take all the information they've picked up from wherever and link it all together and be able to see how everything relates to everything else." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"Ideal information user. One who does not assume things I guess. Yeah one, someone who relies more on not necessarily cold, hard facts because they're often not available but, there's so many different instances in which you need information it's hard to say what is the best…you're not afraid to use information…You have to go out and find the information, you can't just let it sit there." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"I suppose an ideal information user would be someone who goes in a very broad spectrum who does television, radio, newspaper, journals, websites, books, anything else, but who just uses all the different media…So it's someone who goes out to different types of media but also over the different opinions or streams in media representation, and someone who does it continuously, who continuously updates and not just on one little thing. Just kind of starts maybe from one little point but then fans out until the whole global perspective and can get involved, depending on what you're looking for of course. I suppose that would be the ideal information seeker. "(First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

Why we need to be information literate:

"I suppose I think it's just important to question, so you learn more, I suppose you can look at information in all different ways by observing or listening to how different people see the same situation. They're looking at different spins on the same information which helps you to understand that information better because there's a whole lot of different views about it, or values that come into it or whatever…because looking at one source all the time would be very narrow and it wouldn't give you much information. I mean it would give you what it had to offer but there's a lot more, there are many more layers that need to be looked at if you want to find out more and learn more." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"Just being able to think about it critically and intelligently and pull it together, and sometimes there might not be a right or a wrong answer, but showing clear thinking is important." (First year student)

"I think information builds on knowledge you already have and I suppose information is the kind of key to the knowledge that they're building all the time."(First year student)

"I suppose I am information literate because I can like question the information that I'm getting and analyse it." (First year student)

"Being able to understand the storyline and understanding where the author is coming from. To be able to pull out the main arguments and the main points very quickly. To understand what I suppose are the main theories or the main thrusts of the article and where it fits into a context with all the other stuff that's been written in that area." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"Because you get so much information you've got to really work out where it goes and put things together. I know when I do an essay in my room it's like a bomb. Like I've done things all right, like I'll stick pieces of paper to the wall so I can see where the layout of my essay is going and I can organise information the right way, and there's no use getting some of the question and not knowing where it's from and how to how to reference it. So that's one thing I have actually learned how to do, is the first thing you do is write down your reference and then you start looking at the information and being able to keep all that information together and tidy so that it's easy to use. Different folders, everyone uses different techniques but I think keeping the physical information organised is a big part of, you know, using the information." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

Teaching tips—How to develop your students' information literacy

Developing students' information literacy

It is important to design assessment and tasks where students (individually and in teams) are required to autonomously seek, analyse and synthesise information from a range of sources. Students require repeated opportunities in varying situations to seek and use information.

> "Information literacy is a way of engaging with, and learning about, subject matter; it is about using information in a variety of meaningful ways…it becomes a way of working with information that can be encouraged or discouraged by particular learning activities."
>
> Bruce, C. & Candy, P., (Eds.). (2000). *Information literacy around the world. Advances in programs and research.* Wagga Wagga, Centre for Information Studies, Charles Sturt University, p. 7

The critical elements of information literacy curriculum are:

- experiencing information literacy (learning);
- reflection on experience (being aware of learning); and
- application of experience to novel contexts (transfer of learning).

Bruce, C. (2002). *Information literacy as a catalyst for educational change: A background paper.* White paper prepared for UNESCO, the US National Commission on Libraries and Information Science, and the National Forum on Information Literacy for use at the Information Literacy Meeting of Experts, Prague, The Czech Republic. (Retrieved from the Web 16 September 2004) http://www.nclis.gov/libinter/infolitconf&meet/papers/bruce-fullpaper.pdf

Do you require students to go beyond the resources you give them?
You may provide an extensive reading list for students that offers a literature base of authoritative sources and a good coverage of subject matter. However, if you require students to go beyond this literature, you will be more likely to develop students' ability to discriminate, evaluate and make connections. When selecting readings, choose those that will challenge and inspire students to read further.

Do you discuss aspects of evidence and argument with students?
You may require students to present an argument supported by evidence in an essay, debate, report, seminar etc. Do you explicitly discuss what constitutes evidence in your discipline? Do you discuss what constitutes an 'argument'?

Lupton, M. (forthcoming). Evidence, argument and social responsibility: Using students' experiences of information literacy to design curriculum.

Do you provide the opportunity for students to choose their own topic?
Choice of topic not only allows students to pursue their own interests and passions, but it also means that they are not competing for the same resources.

Do you design information literacy activities to build on past experiences and support future study and independent learning?
Information literacy needs to be developed throughout programs. It's a good idea to look at how students are required to use information in other courses so that the experiences you design can build on these, and provide a foundation for what students will experience in the future.

Do you model referencing and citation practices?
It is important to demonstrate and model referencing and citation practices in the material you present to students such as lecture notes, PowerPoint slides, overheads and course guides.

Do you make assumptions about students' understanding of particular concepts and tasks?

For example, do you assume that students have written essays before and that they know:

- what an essay looks like (in your discipline);
- the particular genre of essay you are asking for;
- how to structure an essay;
- how to search for, locate, select and evaluate information;
- what constitutes a 'primary' source and a 'secondary' source (in your discipline);
- how to use primary and secondary sources;
- how to cite and reference information (using your disciplinary conventions);
- how to use a word processor;
- what is meant by an 'argument';
- how to present an argument;
- what is meant by 'evidence' (in your discipline);
- how to present evidence?

Lupton, M. (forthcoming). *Evidence, argument and social responsibility: Using students' experiences of information literacy to design curriculum.*

Why not:

Check your students' understanding of these conventions.

Helping students make the transition to university

Searching for information at university is very different from using school and public libraries. Most school libraries are so small that students don't really need to use the catalogue; they can just browse the shelves. Many public libraries have signs on the shelves to show you where resources are on particular subjects. You usually don't need to search the catalogue unless you want to find an item from another branch. School and public libraries have magazines, such as *Popular Science,* rather than scholarly journals, such as *Nature*.

At school and in public libraries, there may have been access to one or two databases containing newspaper and magazine sources. Some schools have access to databases that include journal articles. **It is daunting for even the most confident student to arrive at university and be confronted with multi-storey libraries and extensive electronic resources.**

Mature-aged students, too, may have only used public libraries and may not have had any experience in searching for electronic information.

Why not:

You could suggest that students use the checklist on the following page when they start their first assignment.

Questions to guide the information seeking process

Context	What is the subject content of my topic: sociology, literature, philosophy? What are the historical trends, or time periods, related to this topic? Do I need historical or current information? Are there geographic limitations?
Details	What are the parts of my topic? What examples and evidence do I need? What are the terms that are used, and what do they mean?
Causes	What and how has this situation developed?
Results	What are the results of this situation?
Alternatives	What are the different or conflicting points of view on my topic? What position do I want to take?
Comparisons	How does my topic compare with other places, times, or groups of people?
Warnings	Do I see any negative outcomes or effects?
Opportunities	How can I contribute something meaningful and new?

Bodi, S. (2002). 'How do we bridge the gap between what we teach and what they do? Some thoughts on the place of questions in the process of research.' *Journal of Academic Librarianship*, 28 (3), 109-114.

Helping students critically evaluate information

Encourage your students to ask themselves these questions every time they draw on web-based material:

- Who is the author – an individual or an organisation?
- Are their credentials listed?
- Do they provide an email address?
- Is there any bias evident?
- Do they give references for their source material?
- If there are links, do they work and are they current?
- When was the site produced, updated or revised?
- Does it seem to give comprehensive information? How do you know?
- What else do you need to know about the topic?

Questions to ask of all information:

- What is the author's standpoint, perspective, and ideology?
- What are the author's assumptions and beliefs?
- What is the purpose of the information?
- For whom is it intended (audience)?

Questions to ask of information and communication technologies:

- Is this the appropriate tool to be using?
- What are the assumptions inherent in the tool I am using?

Teaching strategies to develop information literacy

Below are some ideas for teaching, learning and assessment strategies which encourage students to:

1. independently search for and use information;
2. develop their knowledge base and understanding of the topic;
3. inquire; and
4. critically reflect.

1. Independently search for and use information beyond the lectures, textbook and readings

Information literacy tasks and concepts	Teaching, learning and assessment strategies
Use of a range of sources – journal articles, books, reports, conference papers, newspapers, magazines, websites, people, audio-visual. Searches of library catalogues, library databases, web directories and clearinghouses, browse print and electronic resources. Analysis of viewpoint, bias, currency, authority, relevancy. Analysis of contrasting perspectives. Analysis of web sources for trustworthiness. Use of primary and secondary sources. Ask people. Collect interview and observation data.	Find and synthesise a range of sources (print, electronic, people). Write summary/abstract of a journal article. Document search strategy (keywords and terms used, tools used). Assessment - submit annotated bibliography for topic as stage one for an essay/report.

"I think the ideal information user is the one who digests for themselves, relates back to stuff they've found, thinks it through thoroughly and then comes up with their own formulations and doesn't just go with the flow." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"I suppose I am information literate because I can like question the information that I'm getting and analyse it." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"I think doing general reading first and from that working out specifically what information you need and then going and looking for that specific information, keeping in mind what you need it for in the end. Like when I do my essays I usually do questions and I go and look for the answer to each of those questions and it helps me to remember when looking for information to keep in mind what you need it for." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

2. Development of knowledge base and understanding of topic

Information literacy tasks and concepts	Teaching, learning and assessment strategies
Construction of personal 'map' of the topic and structure of knowledge in field/discipline. Concept mapping and mind mapping. Setting the topic in an historical, political, economic, cultural and social context. Understanding the meaning of the topic within the context of the course and assignment. Analysis of what is required in assignment task in terms of the context and audience. Making connections between topics, courses, fields and disciplines.	Analysis of issues considering the economic, environmental and social impact (ie the triple bottom line). Modelling and practice of concept mapping/mind relationships between aspects of the topic, field and discipline. Critically analyse information with regard to bias, standpoint, viewpoint, ideology, and contrasting perspectives. Requirement that the assignment must include analysis of historical, political, economic, cultural and social context. Peer review of work-in-progress (e.g., essay draft, report outline, website); submission of draft including peers' comments with final product.

3. Legal and ethical use of information

Information literacy tasks and concepts	Teaching, learning and assessment strategies
Modelling and practice in citation conventions in the particular field. Modelling and practice in paraphrasing and quoting. Discussion of academic integrity, plagiarism and ethical use of information. Discussion of the social, cultural and economic use of information.	Modelling and practice of referencing conventions including use of images and audiovisual material. Modelling and practice of paraphrasing and quoting. Correct referencing included in assessment criteria.

"Well I suppose I am information literate because I can acknowledge that there is information and I have an aim to look at as many different sources and different media as I can when searching for particular information. Then when I get that information I analyse it and decide whether I want to discard it or use it. Then if I use it I keep on further questioning and if I discard it, I discard it at that time except it will probably pop up another time into a new situation. It's just discarded for the time being." (First year student)

Lupton, M. & Bruce, C. (forthcoming) *Students' ways of experiencing information literacy.*

4. Inquiry

Information literacy tasks and concepts	Teaching, learning and assessment strategies
Framing own information research topic – e.g., essay question. Posing of questions during the research process (information and empirical). Critical analysis of research methodologies and data analysis in published academic, industry and government research. Designing research project – posing research questions and hypotheses, collecting, presenting and analysing data within a methodological and theoretical framework. Critical analysis of information as portrayed in the media.	Analysis of popular science/history/psychology media programs for academic rigour. Analysis of the use of statistics in the media. Analysis of popular and scholarly sources on a particular topic. Collecting and analysing interview and/or observation data. Group mini-research project. Professional practice research project. Essay where students pose their own essay question.

5. Critical reflection

Information literacy tasks and concepts	Teaching, learning and assessment strategies
Critical reflection on researching and writing/presenting the topic. Documentation and evaluation of search strategies and reflection on how it could have been done differently. Critical analysis of range of sources, use of sources, development of argument. Critical analysis of other students' work, i.e., peer review of draft essays, peer assessment. Critical reflection on how an information search might have been done differently.	Learning portfolio. Search strategies diary. Learning journal. Online forum participation. Peer review and reflection.

6. Presentation

Information literacy tasks and concepts	Teaching, learning and assessment strategies
Presentation of various written document conventions and formats including essays, position papers, lab report, industry/government report, reflective writing, formal and non-formal writing, popular and scholarly writing, learning portfolios, web pages and posters. Using a range of IT applications to present the information including spreadsheets, databases, word processing software, visual presentation software, web design software. Use of tables, figures and concept maps where appropriate. Use of headings, sub-headings and table of contents where appropriate. Design of handouts, overheads and slides to complement seminar. Choosing a communication medium that best supports the purposes of the product and of the intended audience.	Writing in a range of genres for a range of audiences (popular and scholarly), e.g., newsletter article, newspaper article, magazine article, research essay, report, literature review, webpage, poster. Presenting assignment using a range of appropriate applications and technologies. Presenting a seminar complemented by text, audio, images and video.

"Information literacy is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to engage critically with content and extend their investigations, become more self-directed, and assume greater control over their own learning."

Australian and New Zealand Institute for Information Literacy and Council of Australian University Librarians (2003). *Australian and New Zealand information literacy framework. Principles, standards and practice.* Adelaide, Australian and New Zealand Institute for Information Literacy. (Retrieved from the World Wide Web 16 September 2004)
http://www.caul.edu.au/info-literacy/InfoLiteracyFramework.pdf

Options for assessing students' information literacy

Embedding information literacy into assessment

Information literacy should be embedded into a range of assessment tasks. Learning objectives for information literacy should be included in the course outline, and information literacy outcomes included in the assessment criteria of relevant assessment items. Many of the traditional library research activities are often implicit in an essay or report assignment. These need to be made explicit in assessment criteria and expectations.

Everyone knows that assessment drives the curriculum – at least, that's how students see it. Assessment tasks that encourage finding, analysing, evaluating and synthesising information and reflecting on experience will develop information literacy. The most useful activities are those that structure, support and break down a larger, complex task. These smaller tasks that contribute to a larger task provide formative feedback to students and are evidence of the students' work. Tasks may not necessarily be graded, but are submitted as a requirement to pass the assignment.

Checklist when designing information literacy assessment	
What am I assessing in terms of intellectual engagement with content?	
What am I assessing in terms of generic and discipline-specific skills?	
Why am I assessing these skills and engagement with content?	
How am I going to assess these skills and engagement with content?	
What resources have I provided that both enable and assist the student to understand the skills and content knowledge they will need to demonstrate to complete this assessment?	

MacKinnon, D., & Manathunga, C. (2003). Going global with assessment: What to do when the dominant culture's literacy drives assessment. *Higher Education Research and Development, 22*(2), pp. 132-144.

Suggested criteria for assessing information literacy

- Evidence of reading from a wide range of sources and perspectives.
- Critical evaluation of the literature.
- Clarity of argument.
- Structure and flow of argument.
- Demonstration of accurate referencing and citation.
- Strength of analysis.
- Use of evidence to support argument.
- Presentation of data.

Examples of information literacy assessment items at Griffith

Health, Aging and Disability – 1st year
Research and write a newsletter article.
Construct a resource manual including a summary of seven topics which each contain references to two articles.

Law, Government and Policy – 1st year
Complete online Library Research Tutorial.
Find six sources (books, journal articles, web pages).
Provide a summary of content of each.
Provide a search strategy.
Write essay based on sources.

Introduction to Hospitality – 1st year
Gather empirical data and organisational information.
Present a research assignment draft.
Submit final research assignment.
Present seminar on research assignment.

Intercultural Communication – 2nd year
Find a journal article relating to the topic of the week.
Write an abstract outlining and summarising the main issues.

Dentistry and Oral Health – 3rd year
Complete online Library Research Tutorial.
Do literature review and data collection for research project.
Present seminar on project.

Examples of assessment tasks to develop students' information literacy

Assessment Task	Knowledge, skills, and processes developed
Present annotated bibliography using a range of sources for topic as stage one for an essay/report.	Search and retrieval skills. Topic analysis. Summary of main points and value of the source.
Find two journal articles on the topic and write summary/abstract of both.	Search and retrieval skills. Distillation of main points.
Submit documentation detailing search strategy (keywords and terms used, tools used) and reflection on the search.	Documentation of search process (search terms, tools used, people consulted, use of browsing). Reflection on search strategy and evaluation of sources found and selected.
Peer review of work-in-progress against assessment criteria (e.g., essay draft, report outline), submission of draft including peers' comments with final product.	Self and peer evaluation. Reflection and consideration of academic standards.
Critically compare the information that is available from a range of sources (journal articles, books, textbooks, encyclopaedias, magazines, newspapers, audio/visual, websites), including primary and secondary sources.	Search and retrieval skills. Topic analysis. Critical thinking. Understanding of primary and secondary sources in particular disciplines.
Find and critically analyse information with regard to bias, standpoint, viewpoint, argument, ideology, contrasting perspectives and assumptions of author.	Search and retrieval skills. Topic analysis. Critical thinking.
Set topic in an historical, political, economic, cultural and social context.	Search and retrieval skills. Topic analysis. Use of a wide range of general and specific information from different perspectives. Use of evidence to support an argument.
Analyse issues considering economic, environmental and social impact (ie the 'triple bottom line').	Find and draw together information from a range of sources and perspectives. Use of evidence to support an argument. Critical thinking.
Write a literature review.	Search and retrieval skills. Topic analysis. Use of a wide range of general and specific information from different perspectives. Use of evidence to support an argument. Identification of gaps in the literature. Critical thinking.

Assessment strategies

Assessment Task	Knowledge, skills and processes developed
Group mini-research project. Professional practice research project.	Definition of research question/problem/hypothesis. Literature review. Collection, analysis and presentation of data.
Research essay where students pose their own essay question.	Analysis of aspects of the topic – scope, currency. Topic analysis. Critical thinking. Understanding of primary and secondary sources in particular disciplines. Use of a wide range of general and specific information from different perspectives.
Collect and analyse interview and/or observation data.	Definition of research question/problem/hypothesis. Design of study. Data analysis. Presentation of data (tables, graphs).
Analysis of information presented in popular science/history/psychology/lifestyle media programs for academic rigour. Analysis of popular and scholarly sources on a particular topic.	Search and retrieval skills. Topic analysis. Critical thinking. Analysis of needs of audience. Identification of similarities and difference between scholarly and popular sources.
Analysis of the use of statistics in the media.	Understanding of use of statistics. Analysis of assumptions of author. Analysis of needs of audience.
Learning portfolio/diary/journal where students reflect on their learning of the topic, use of resources, development of argument. Online forum participation. Peer review and reflection.	Reflection on experience. Reflection on learning. Critical evaluation of process.
Writing in a range of genres for a range of audiences (popular and scholarly), e.g., newsletter article, newspaper article, magazine article, research essay, report, literature review, web page, poster.	Analysis of needs of audience. Citation conventions for different genre. Writing styles for different genres Presentation of data suitable for audience.

More information literacy assessment ideas:

Assessment ideas
http://www.library.cqu.edu.au/informationliteracy/teachresources/assess_list.htm

Information literacy marking rubric
http://www.library.cqu.edu.au/informationliteracy/teachresources/markcriteria.htm

Minimising plagiarism

Many strategies that are effective in developing information literacy also minimise plagiarism. By breaking up the information seeking and using process into stages you are creating opportunities for students to demonstrate work-in-progress.

For example, if you are assessing an essay, ask students to submit:

- an annotated bibliography on a range of sources for the essay topic;
- a written reflection on search strategies; and
- a peer review of essay draft.

Give students the opportunity to choose their own topic and phrase their own essay question by:

- reading a range of sources on the general area of the topic;
- focusing the topic and presenting an essay question and an annotated bibliography relating to the question; and
- writing reflectively on search strategies.

If you set a research project or an experiment design, ask students to submit:

- a literature review; and
- a work-in-progress seminar presenting research questions and the literature base.

Become familiar with resources that may be used for plagiarism

"Educate yourself about electronic options available and attractive to students in your discipline. Culwin & Lancaster (2001) suggest checking that you are familiar with available resources related to the assignments you set.

Use a search engine to help find the sites students are likely to find. Simply choose a phrase that students are likely to use - a history example is 'Thomas Samuel Kuhn was born'.

Demonstrate to your students your awareness of electronic resources available to them. Evans (2000) suggests downloading examples of the sorts of information students are likely to find in relation to the assignment and distributing it to them - to show that you are aware of their existence. You might even consider discussing the quality of the prepared work with students."

James, R.; McInnis, C.; & Devlin, M. (2003) Assessing Learning in Australian Universities

Retrieved from the Web 16 September 2004
http://www.cshe.unimelb.edu.au/assessinglearning/03/plagMain.html

Paraphrasing, citing and referencing

Academic conventions such as paraphrasing, citing and referencing need to be taught, practised and reinforced.

Source material is documented for three main reasons:

- to give credit to the original author;
- to indicate the writer's own research credibility; and
- to enable others to locate the original work, or actual words.

Conventions for referencing vary between disciplines, journals and publishing houses. Some examples of different systems can be found at:

Referencing:
http://www.allenandunwin.com/estudy/referencing.asp

How to Acknowledge What You've Read:
http://www.lib.monash.edu.au/vl/steps/iss05.htm

Harvard Referencing Guide:
http://www.shef.ac.uk/library/libdocs/hsl-dvc1.html

Harvard System of Referencing:
http://www.lmu.ac.uk/lss/ls/docs/Harvard/Harvard.htm

APA System of Referencing:
http://www.lib.monash.edu.au/vl/cite/apaex.htm

Vancouver System of Referencing:
http://www.lib.monash.edu.au/vl/cite/medvex.htm

MLA System of Referencing:
http://www.lib.monash.edu.au/vl/cite/mlaex.htm

Did you know?

Essays are commercially available on websites. Some providers offer to customise an essay to particular specifications, such as grade and topic.

Further information on plagiarism is available at:
http://www.cshe.unimelb.edu.au/assessinglearning/03/plagMain.html

Pitfalls and traps when incorporating information literacy into the course or program

Real-life case studies

1. Not preparing students for the assignment

Students had to submit an annotated bibliography for their first assessment item. They were also asked to hand in a search history. Students were not shown how to find journal articles using a relevant database, nor how to print out a search history from their session. Many students did successfully find articles but did not realise they had to print out the search history at the same time. Consequently, many students handed in search histories which were generated at a later date and were not authentic representations of their information seeking behaviours.

2. Requiring students to find information that wasn't available

Students had to complete ten questions testing their ability to find information in the library. Four different sets of questions were distributed among the cohort to minimise cheating. However, two sets of questions asked students to find information that was incorrect or no longer available. For example, one question asked students to find a book on the Brisbane City Council library catalogue, but the catalogue record no longer existed. Another question asked students to find a record on a database, but the record had changed (or did not exist) and did not match the quiz question. Subsequently, marks had to be adjusted for the students who had been given the flawed quizzes.

3. Requiring students to demonstrate information retrieval skills but not requiring higher order synthesis and analysis

- Students attended tutorials to learn how to find cases and legislation and had to complete a number of quiz questions demonstrating their skills for 10% of the course. But for their major assessment item, students were given all the information resources they needed to complete the case review and did not have to apply their information searching skills to complete the assessment.
- Students were required to submit an annotated bibliography on a particular subject as a discrete assessment item. There was no follow up task that required synthesis and analysis of the information or the presentation of an argument.
- Students had to complete a worksheet that involved them finding 'facts'. There was no follow up task that required synthesis and analysis of the information.
- Students had to complete a library skills worksheet that involved them finding items in the catalogue and in databases. There was no link made between this task and the research assignment that followed.

4. Lack of resources to complete an assignment

A first year introductory course usually has an enrolment of about 200 students. The course suddenly attracted 450 students due to the course being a core subject for a new degree. Chaos ensued as the library shelves were cleaned out.

5. Setting essay questions that rely on current events without supporting students in critical evaluation of popular media resources

Essay questions were set which dealt with current events (last 12 months), but due to the length of the publishing cycle, little scholarly information was available. Students relied on popular sources of information (newspapers, magazines, websites), but were not given support in critically evaluating the authority and trustworthiness of the information.

6. Non-critical use of information

Students were required to design a brochure for the community on a health related topic. Students sourced ready-made brochures and pamphlets and used these to complete their assignment. A different approach could have been to have students collect existing brochures, critique them and design their own based on their critique.

7. Requiring students to access scholarly journals without support

First year students were required to find six journal articles on their topic for an assignment. They were not given any support in knowing what a journal article was, why it might be better than a magazine article and were not given practice in using library databases.

8. Requiring students to use information and communication technology without support

Students in their first few weeks of university study were asked to present data in a spreadsheet format using advanced functions within Excel. Students panicked because they did not have these skills, nor did they have time to develop them.

Principles for developing students' information literacy

Principles of effective information literacy

Explain the purpose of information literacy and its role in lifelong learning to students.

Design assessment tasks that will require students to:

- read widely;
- ritically evaluate texts and source materials;
- search multiple databases, catalogues, websites, print resources, etc.
- synthesise and integrate information;
- collect and analyse data;
- attribute and reference source material; and
- present information using a range of appropriate IT applications.

Develop criteria against which the learning outcomes will be assessed and which require evidence of:

- wide reading;
- critical evaluation;
- clear, well-structured and cogent argument;
- use of evidence to support conclusions;
- accurate referencing and citation; and
- presentation of data.

Make these criteria clear to students at the very first class.

Give students plenty of practice in finding, using and evaluating information by asking them to:

- use concept maps when researching assignments;
- write summaries or abstracts for journal articles;
- document their search strategies and write reflective commentaries on how they could have been more effective;
- submit annotated bibliographies as part of their assignment;
- engaging in peer-review sessions of written work;
- designing their own research topics and methodologies; and
- debrief in class and speak publicly about their experiences and skills they have developed.

Where to go for help

Support is available – You are not alone!

Information literacy is an area where the University has recognized that support is crucial. Information Services has teams of **faculty librarians, information literacy specialists and learning advisors** here to work with you. They can advise you on teaching, learning and assessment strategies. They have developed materials such as the online Library Research Tutorial. They will team teach with you in your course. For example, faculty librarians will teach customized lectures and tutorials covering:

- Topic analysis;
- Search strategies;
- Use of the Library catalogue;
- Use of electronic databases and
- Evaluation of information.

Learning advisors will teach customised lectures and tutorials covering:

- Note taking and note making;
- Academic writing;
- Concept mapping;
- Literature reviews;
- Writing research proposals and research reports
- Reading effectively;
- Approaches to understanding statistics; and
- Citing and referencing.

Information literacy specialists can teach lectures covering the basics of:

- Access;
- Dreamweaver;
- EndNote;
- Excel; PowerPoint; and
- Word.

There are also services to which you can refer your students so that they can independently develop their information literacy skills. These include:

- individual or small group consultations with a learning adviser;
- workshops;
- self-help resources.

For more information on these services, visit:
http://www.griffith.edu.au/ins/training/

For curriculum issues contact:

Dr Gay Crebert
Griffith Institute for Higher Education
Griffith University
Ph. (07) 3875 5981
Email: G.Crebert@griffith.edu.au

Ms Carol-joy Patrick
School of Microelectronic Engineering
Griffith University
Ph. (07) 3875 5007
Email: CJ.Patrick@griffith.edu.au

Ms Mandy Lupton
Griffith Institute for Higher Education
Griffith University
Ph. (07) 3875 6816
Email: M.Lupton@griffith.edu.au

Contact:

Library
Faculty Librarian Team Leaders

Arts & Education
Di Selzer
D.Selzer@griffith.edu.au
338 21217 (Logan)
555 28278 (Gold Coast)

Business & Law
Collette Smith-Strong
C.Strong@griffith.edu.au
387 57245 (Nathan)

Health & Science
Veronica Dawson
V.Dawson@griffith.edu.au
387 57256 (Nathan)

Additional resources

Print resources

Bruce, C. (1997). *The Seven Faces of Information Literacy*. Blackwood: AusLib.

Lupton, M. (2004). *The Learning Connection: Information Literacy and the Student Experience.* Adelaide: AusLib.

MacKinnon, D., & Manathunga, C. (2003). Going global with assessment: What to do when the dominant culture's literacy drives assessment. *Higher Education Research and Development,* 22 (2), pp. 132-144.

Web resources

Refer students to the Griffith Graduate Resource Directory at:
http://www.gu.edu.au/centre/gihe/griffith_graduate/home.html

Griffith Online Library Research Tutorial
http://www.griffith.edu.au/ins/training/library/home_lrt.html

Learning Services workshops and self-help resources
http://www.griffith.edu.au/ins/training/

Information literacy assessment ideas
http://www.library.cqu.edu.au/informationliteracy/teachresources/assess_list.htm

Information literacy marking rubric
http://www.library.cqu.edu.au/informationliteracy/teachresources/markcriteria.htm

Assessing Learning in Australian Universities
http://www.cshe.unimelb.edu.au/assessinglearning/

Exploring assessment (best practice examples of information literacy assessment)
http://www.anziil.org/events&meetings/symposiumseriestwo/resources.htm

Griffith University Information Literacy Blueprint
Bruce, C. (1994). Information literacy blueprint.
http://www.gu.edu.au:80/ins/training/computing/web/blueprint/content_blueprint.html

Developing information literacy outcomes through the curriculum
http://www.lib.rmit.edu.au/infolit/grid.html

Australian and New Zealand information literacy framework. Principles, standards and practice
http://www.caul.edu.au/info-literacy/InfoLiteracyFramework.pdf

Student handouts

A collection of ready to use resources associated with various aspects of facilitating, teaching and assessing information literacy.

1. What employers and students say about information literacy
2. Critically evaluation information
3. Referencing

What employers and students say about information literacy

Employers' comments

The information literate person would need:

"The ability to research, to analyse and to interpret and a knowledge of local repositories, so if I had to ask them to go and research x, y and z, they know there are places beyond the University library, they also know how to get in through a web, and use a catalogue."

(Employer of Griffith Graduates, 2003)

"Research and report writing - obviously for skills on the job they need to know how to research, they need to know how to put it into a format that is obviously understandable. And then basic communication, such as the use of email, Microsoft office packages and technical equipment, how to use overhead projectors, how to use the computer, for instance - those kinds of skills so that they can get in there and easily pick up the role."

(Employer of Griffith Graduates, 2003)

"Mostly what we do is applied research…you have got to know initially where to look for the information while that can be guided, the person has to be self-directed so they trundle off and gather this massive amount of information."

(Employer of Griffith Graduates, 2001)

"To be able to access both internal and external databases and networks around the world to gain the latest ideas from the Internet, from academic institutions. They need to be able to build networks, and that requires give and take, communication skills again, and IT skills, and, slightly to our surprise, we find that a lot of graduates do not have the IT skills that we might now expect of today's generation."

Employer interviewed in Harvey, L., Moon, S., & Geall, V. (1997). *Graduates' Work: Organisational Change and Student Attributes*. Retrieved from the World Wide Web on 16 September 2004. http://www.uce.ac.uk/crq/publications/gw/gwch6.html

Students' comments

The information literate person would be:

"An ideal information user would be able to take all the information they've picked up from wherever and link it all together and be able to see how everything relates to everything else." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"Ideal information user. One who does not assume things I guess. Yeah one, someone who relies more on not necessarily cold, hard facts because they're often not available but, there's so many different instances in which you need information it's hard to say what is the best…you're not afraid to use information…You have to go out and find the information, you can't just let it sit there." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"I suppose an ideal information user would be someone who goes in a very broad spectrum who does television, radio, newspaper, journals, websites, books, anything else, but who just uses all the different media…So it's someone who goes out to different types of media but also over the different opinions or streams in media representation, and someone who does it continuously, who continuously updates and not just on one little thing. Just kind of starts maybe from one little point but then fans out until the whole global perspective and can get involved, depending on what you're looking for of course. I suppose that would be the ideal information seeker. "(First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

Why we need to be information literate:

"I suppose I think it's just important to question, so you learn more, so the information, I suppose you can look at information in all different ways by observing or listening to how different people see the same situation. They're looking at different spins on the same information which helps you to understand that information better because there's a whole lot of different views about it, or values that come into it or whatever…because looking at one source all the time would be very narrow and it wouldn't give you much information. I mean it would give you what it had to offer but there's a lot more, there are many more layers that need to be looked at if you want to find out more and learn more." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

"Just being able to think about it critically and intelligently and pull it together, and sometimes there might not be a right or a wrong answer, but showing clear thinking is important." (First year student)

"I think information builds on knowledge you already have and I suppose information is the kind of key to the knowledge that they're building all the time."(First year student)

"I suppose I am information literate because I can like question the information that I'm getting and analyse it." (First year student)

"Being able to understand the storyline and understanding where the author is coming from. To be able to pull out the main arguments and the main points very quickly. To understand what I suppose are the main theories or the main thrusts of the article and where it fits into a context with all the other stuff that's been written in that area." (First year student)

Lupton, M. & Bruce, C. (forthcoming). *Students' ways of experiencing information literacy.*

Critically evaluating information

Questions to guide the information seeking process

Context	What is the subject content of my topic: sociology, literature, philosophy? What are the historical trends, or time periods, related to this topic? Do I need historical or current information? Are there geographic limitations?
Details	What are the parts of my topic? What examples and evidence do I need? What are the terms that are used, and what do they mean?
Causes	What and how has this situation developed?
Results	What are the results of this situation?
Alternatives	What are the different or conflicting points of view on my topic? What position do I want to take?
Comparisons	How does my topic compare with other places, times, or groups of people?
Warnings	Do I see any negative outcomes or effects?
Opportunities	How can I contribute something meaningful and new?

Bodi, S. (2002). 'How do we bridge the gap between what we teach and what they do? Some thoughts on the place of questions in the process of research.' *Journal of Academic Librarianship*, *28*(3), 109-114.

Questions to ask yourself when accessing material from the web

Checklist for evaluating web sites	
Who is the author – an individual or an organisation?	
Are their credentials listed?	
Do they provide an email address?	
Is there any bias evident?	
Do they give references for their source material?	
If there are links, do they work and are they current?	
When was the site produced, updated or revised?	
Does it seem to give comprehensive information? How do you know?	
What else do you need to know about the topic?	

Questions to ask of all information	
What is the author's standpoint, perspective, and ideology?	
What are the author's assumptions and beliefs?	
What is the purpose of the information?	
For whom is it intended (audience)?	

Questions to ask of information and communication technologies	
Is this the appropriate tool to be using?	
What are the assumptions inherent in the tool I am using?	

Referencing

Referencing

Source material is documented for three main reasons:

- To give credit to the original author;
- To indicate the writer's own research credibility; and
- To enable others to locate the original work, or actual words.

Conventions for referencing vary between disciplines, journals and publishing houses. The social sciences, for example, uses the American Psychological Association (APA), or Harvard conventions; while medicine, health science and the sciences use the Vancouver system; and the humanities uses the Modern Language Association of America (MLA) system. Examples of these systems can be found as follows:

Griffith University's Library Research Tutorial provides valuable information for students and academic staff on all aspects of research and referencing:
http://www.gu.edu.au/ins/training/library/home_lrt.html

Referencing:
http://www.allenandunwin.com/estudy/referencing.asp

How to Acknowledge What You've Read:
http://www.lib.monash.edu.au/vl/steps/iss05.htm

Harvard Referencing Guide:
http://www.shef.ac.uk/library/libdocs/hsl-dvc1.html

Harvard System of Referencing:
http://www.lmu.ac.uk/lss/ls/docs/Harvard/Harvard.htm

APA System of Referencing:
http://www.lib.monash.edu.au/vl/cite/apaex.htm

Vancouver System of Referencing:
http://www.lib.monash.edu.au/vl/cite/medvex.htm

MLA System of Referencing:
http://www.lib.monash.edu.au/vl/cite/mlaex.htm

There are numerous electronic tools for managing research and information. Some of the more well-known are:

Procite:
http://www.procite.com/

Biblioscape:
http://www.gu.edu.au/instraining/library/home_lrt.html

EndNote:
http://www.EndNote.com