

A New Curriculum for Information Literacy

transitional ▪ *transferable* ▪ *transformational*



CURRICULUM AND SUPPORTING DOCUMENTS

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ARCADIA

You have learned something. That always feels at first as if you had lost something.

~H.G. Wells



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Overview and implementation guidelines

Curriculum aim

The curriculum outlines what we believe to be a continuum of skills, competencies, behaviours and attitudes ranging from functional skills to intellectual operations that together comprise the spectrum of information literacy.

The overarching aim of the curriculum is to help undergraduate learners to develop a high-level, reflective understanding of information contexts and issues which will empower them with a robust framework for handling new information situations, and to generate strategies for evaluating, analysing and assimilating that information as needed and at the time it is required.

The emphasis throughout is on the student's development as a discerning scholar and, beyond the academic arena, as an informed citizen and an autonomous and lifelong learner.

Curriculum attributes

The curriculum is intended to be sufficiently flexible and adaptable that it can be implemented in any higher education institution at undergraduate level. In line with both CILIP's and UNESCO's visions, the curriculum is grounded in a view of information literacy as fundamental to the ongoing development of the individual in both an academic and a social context. Its design was informed by the following principles:

- **Holistic:** supporting the whole process of study and research rather than just teaching traditional library skills
- **Modular:** consisting of ongoing classes to meet the developing needs of students during their whole undergraduate career, not just one-shot sessions.
- **Embedded:** forming a salient part of academic teaching, or run closely alongside it over the course of the academic year, and with activities and problems directly related to students' subject context
- **Active and assessed:** containing a significant element of active and reflective learning, including peer assessment elements
- **Flexible:** for use and adaptation in all UK Higher Education Institutes, and designed specifically for flexible implementation
- **Transformative:** grounded in a broad reading of 'information literacy' which sees IL not as a set of competencies but as a fundamental attribute of the discerning scholar, and as a crucial social and personal element in the digital age

Using the curriculum

The curriculum consists of ten thematic strands encompassing the full range of facets comprised in information literacy. (Note that the strands are not intended to form the basis of individual teaching sessions, but to identify the complex interplay of elements encompassed within information literacy.)

Strands 1 and 10, which bookend the curriculum, link reflective learning with specific transition points in the undergraduate career. Strand 1 focuses on the transition from school to higher education - a perfect time to engage students in their own learning process by giving them a vocabulary and analytic structure through which to address the significant changes in expectations, teaching styles, and attitudes towards learning that occur at this point. Strand 10 deals with transferring information literacy skills, behaviours and attitudes to everyday life, in line with the principles of lifelong learning.

Strand 2, in contrast, is not linked to a specific transition point. Rather, it is informed by the idea that change occurs throughout the learning process as a natural, unavoidable and sometimes challenging aspect of learning. The content of Strand 2 is iterative and reflective, and aims to give students ongoing, scaffolded support as they develop the conceptual and intellectual infrastructure for assimilating new information over the course of their undergraduate career. The focus in these three strands (1, 2 and 10) is on learning to learn.

Strand 3 aims to explore and develop the academic literacies of reading and writing at both the functional, procedural level - skimming and scanning strategies, recognising and using appropriate academic idiom - and in

higher-order activities such as textual interrogation and critiquing, argument construction, and understanding of a discipline's epistemological structure and values.

Strands 4 and 5 focus on dealing with subject-specific information. Strand 5 is intended to familiarise students with specialist resources of various types and content in their discipline, while Strand 4 focuses on developing awareness and understanding of the *range* of sources types available and how to evaluate them for reliability, authority and their appropriateness for the student's specific purpose. The underlying purpose of these strands is to enable students to become familiar with the information landscape of their discipline.

Strand 6 focuses on practical, functional skills, many of which will be recognisable in existing library instruction courses. These remain key skills without which students will struggle to find, select, manage and process academic information efficiently. In many cases a huge range of software and online tools is available to simplify these processes. We have not stipulated particular tools to teach, firstly since technology is moving at too fast a pace, and secondly in order to emphasise that understanding the process itself is as important as being aware of tools or programs designed to aid the process.

Strands 7, 8 and 9 deal with the high-order cognitive and intellectual functions of information handling. These include critiquing and analysing material, synthesising viewpoints, formulating research questions, and the ethical dimension of information use and production. These facets have traditionally been perceived as belonging to the academic province; however, as discussed in the Theoretical Background and the Expert Report which accompany this document, a holistic view of information literacy advocates that separating 'functional' skills and high-order abilities occludes the research process and disadvantages the student.

The strands thus fall into five broad learning categories, containing multiple levels of development:

- key skills
- academic literacies
- subject-specific competences
- advanced information handling
- learning to learn

Teaching sessions can be constructed by selecting an element from each category to match the overall learning outcomes of the session. In this way each session will contain:

- a practical 'take-home' skill
- a subject-specific context in which to situate and deploy the skill, including an increased awareness of academic reading and writing conventions within the discipline
- an element of advanced information handling allowing the student to develop sophisticated and nuanced techniques for evaluating, assimilating and synthesising information
- a reflective component allowing the learner to assess how the new skill, insight and behaviour will affect or enrich their existing practices and attitudes

The strands have been colour-coded according to category to facilitate this structure.

In addition to the curriculum itself, we have produced a set of supporting resources to help implement the curriculum including:

- Appendix 1: Mapping to existing IL frameworks and standards
- Appendix 2: Evidence toolkit for implementing the curriculum
- Appendix 3: Six tips for transforming your teaching
- Appendix 4: Good practice in information literacy

Other related resources you may wish to consult which were produced during the Arcadia project include:

- Theoretical background
- Expert consultation report

Implementing the curriculum

Who teaches it?

The New Curriculum differs from existing information literacy frameworks and models in specifically including transitional and affective elements, as well as endeavouring to articulate the broad spectrum of skills, competencies, behaviours and attitudes that comprise the IL continuum and are the foundation of autonomous learning. As such, the curriculum is not intended to be a library-owned product. Simply in practical terms of teaching time it is likely to challenge library resourcing, but in addition it is crucial to the holistic nature of information literacy that it is perceived as permeating every aspect of information, and not viewed reductively as synonymous with bibliographic instruction. Implementing the curriculum is therefore likely to call on the resources of a number of colleagues including librarians, but also study skills advisors, learning developers, supervisors and lecturers, and careers and admissions staff.

While curriculum content can be shared among practitioners in this way, it is crucial that students are in a position to view information literacy learning as a coherent whole. If curriculum elements are not joined up, opportunities for making reflective associations between the various aspects provided will be lost. For this reason, information literacy should wherever possible be embedded into the academic curriculum and taught either in conjunction with academic staff or even by them entirely, with guidance and support from colleagues.

When should sessions take place?

The curriculum is designed to be modular, and to be implemented across the whole duration of the undergraduate career. One-shot sessions - particularly 'front-loaded' induction or orientation sessions at the start of the academic year - are inappropriate vehicles for the curriculum content, which needs to be broken down into progressive modules geared to specific successive tasks and building on previous learning. In this way a spiral structure of scaffolded support can be implemented, allowing learners to develop an informed and reflective understanding of their subject and of their own learner identity in relation to it. As the student advances, the scaffolding is progressively withdrawn, facilitating the development of autonomous learning. The spiral progression is evinced in the strategy of referencing skills and behaviours acquired in previous classes in order to build on and develop them.

This scaffolded, modular development requires implementers to determine the points of need appropriate for their institution and for individual cohorts, and to customise the curriculum according to those needs. This will allow implementers to devise sessions appropriate to the timing of development in each academic discipline - for instance, it may be appropriate to teach some research skills to history students in their first year, whereas these may not be required by chemistry students until much later in their degree.

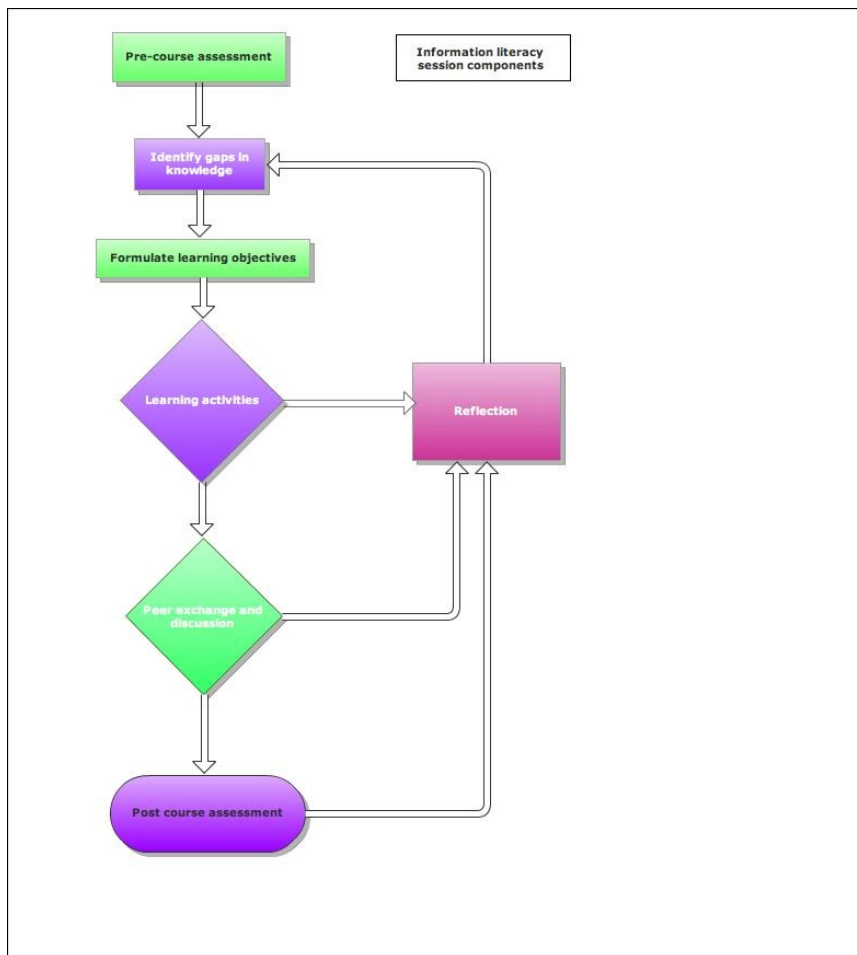
How should it be taught?

The curriculum is intended to depict the range of facets within the information literacy continuum, some of which will already form part of the teaching at most institutions, for instance in library or study skills sessions. We are not advocating that practitioners should abandon existing teaching or session designs; rather, we suggest auditing current practice against the thematic strands and learning outcomes outlined, and 'cherry-picking' aspects that complement or augment your existing teaching.

Active or inquiry-based learning is a vital part of developing information literacy. The curriculum design was guided by the principle of constructive alignment outlined by Biggs (1996), which is founded on the concept of understanding as a performative phenomenon. This principle stipulates that activities and assessments must be keyed to the learning outcomes of the session. Therefore, while we have included sample activities and assessments, these are intended as illustrative examples only: session leaders should not feel bound to follow these to the letter, but should use their own creativity and experience to design active learning and assessment elements that align with the intended learning outcomes. As with the choice of session timing, content will be informed by the needs of particular student cohorts at various points in their undergraduate careers.

We strongly recommend the use of pre-session audits in order to determine students' existing information skills and behaviour. This is particularly crucial at the transition from secondary to tertiary learning, as students enter higher education with a tremendous range of prior learning experience. Even those who arrive with high grades via traditional A Level route may be less used to independent learning and carrying out research than a student who has completed the International Baccalaureate. However, we recommend that pre-session audits should be carried out not only at the beginning of the undergraduate career but throughout.

Figure 2: Information literacy class structure



In order to be effective, like any learning, information literacy must be assessed. However, we recognise that incorporating summative assessment for information literacy is a significant challenge. Therefore we have included wherever possible sample assessments based on innovative techniques such as peer assessment. These approaches to assessment also offer useful opportunities to reflect on the learning process. Reflection is a key element of the curriculum as it enables the student to develop an autonomous learning framework. Figure 1 provides an outline of how a session could be structured to take into account all these components.

Those involved with implementing the curriculum therefore have a significant responsibility to stay informed - about developments within the subject area, about new tools, gateways, search interfaces and other technological advances, and also about developments in pedagogy and learning theory. The curriculum demands a significant element of continuing professional development, in order that those teaching it should actively model best practice in their teaching.

Finally, while online elements offer useful reinforcement for students who need immediate help at a specific time (such as an approaching essay deadline), we believe that information literacy, as a fundamental aspect of learner development, needs to be taught face to face. The spectrum of information literacy embraces high-level cognitive functions such as questioning and analysis of complex material, framing problems and research questions, and the development of intellectual creativity. Developing these abilities is both challenging and transformative, and requires the learner simultaneously to develop a robust and reflective learning framework. We consider that a face-to-face approach, using active and reflective learning strategies, within a peer setting allowing for discussion, assessment, and mutual support, offers the most fruitful environment for enabling this transformative process to take place.

References

Biggs, J. (1996) 'Enhancing teaching through constructive alignment', *Higher Education* 32(3), pp.347-64

CILIP (2004) *Information literacy: definition*. Available at: <http://www.cilip.org.uk/get-involved/advocacy/information-literacy/pages/definition.aspx> (retrieved 07 July 2011)

UNESCO (2005) *Beacons of the information society*. Available at: http://portal.unesco.org/ci/en/ev.php-URL_ID=20891&URL_DO=DO_TOPIC&URL_SECTION=201.html (retrieved 07 July 2011)

A NEW CURRICULUM FOR INFORMATION LITERACY

Learning to learn (Strands 1, 2, 10)

Developing academic literacies (Strand 3)

Subject-specific competencies (navigating the information landscape, resource discovery) (Strands 4, 5)

Key skills (e.g. searching, notetaking, referencing) (Strand 6)

Advanced information handling (e.g. evaluation, source critique, synthesis) (Strands 7, 8, 9)

Strand content	Learning outcomes	Example activities	Example assessment
Strand 1 Transition from school to higher education			
What are the expectations at higher education level in your discipline?	Distinguish between the expectations at school and HE level in your discipline Recognise that learning at HE is different and requires different strategies Identify and assess the range of information formats available	Tutor outlines contrasting expectations at secondary and HE levels Students review examples of HE level work at school and discuss differences with their prior work Classroom-based activity to explore and contrast how information on a relevant topic is presented in monographs, journals, reports and other formats	Short reflective piece of writing on transition issues – students identifies areas they need to address (ideally assessed by personal tutor or academic)
What are the conventions around reading, writing and presenting at higher education level in your discipline?	Develop an awareness of academic conventions at HE level Assess your reading, writing and presenting skills and compare them to experts within your discipline	What makes an academic journal article different from an article in a publication like <i>History Today</i> or <i>New Scientist</i> ? Identify the differences in presentation, attribution, tone of voice etc.; discuss why those genre conventions are used - what purpose do they achieve? discuss what a basic descriptive answer might be and what would need to be added to take a more analytical approach	Rewrite a paragraph from a popular publication as though for an academic audience. (For peer assessment.)
Reflect on your current and previous information	Assess your current information-seeking behaviour and compare it to experts within your discipline	Using reading lists as a starting point, identify the key types of information that	Postcard from the edge: identify 3 new strategies, tools or sources that

Strand content	Learning outcomes	Example activities	Example assessment
behaviour – what’s different?	<p>Critique the tools and strategies you currently use to find scholarly information</p> <p>Evaluate the information environment including libraries and digital libraries as ‘trusted’ collections</p>	<p>are important in your discipline - discuss those you are familiar with and those you have not used before</p> <p>Identify your top 3 (or 5) current information sources and evaluate their fitness for purpose in line with academic expectations - create a mind-map of your information landscape as it currently appears and share with peers</p>	you found useful in class and write yourself a postcard. Class leader to send cards after e.g. 1 week.
Strand 2 Becoming an independent learner			
Learning to learn	<p>Reflect on how to create strategies for assimilating new knowledge</p> <p>Identify your learning style and preferences, including specific learning needs</p>	Arrange verbs from Bloom’s Taxonomy on a scale into higher- and lower-order skills	<i>Use activity as formative assessment</i>
Affective dimension of information literacy	<p>Critique the concept that learning changes the learner</p> <p>Acknowledge the emotional impact of learning on your worldview</p>	<p>Students reflect on a positive and a negative learning experience and discuss why one worked and one didn’t. How did you cope with the negative experience? How did you take forward the positive?</p>	<p>Demonstrate an awareness of sources of support at all levels in your institution</p> <p>A case study exercise to diagnose the issues: what advice would you give, and where would you refer the person?</p>
Strand 3 Developing academic literacies			
Academic writing, rhetoric and persuasive writing	<p>Identify appropriate terminology, use of language and academic idiom in your discipline</p> <p>Identify overt and implicit techniques for influencing the reader/viewer in different arenas - in academic writing, in advertising, in the media</p> <p>Develop an awareness of the epistemological structure and values in your discipline</p>	<p>Assess and compare the quality of 3 short pieces of writing (one deliberately flawed)</p> <p>Compare writing style, structure, and use of evidence across a range of papers on the same topic - students vote for best paper and discuss why it met their criteria</p> <p>Analyse the structure of a key work in your discipline and break it down into component parts: does it convince you?</p>	<p>Marks in first-year assignments explicitly awarded for academic writing abilities</p> <p>The elevator challenge - pitch an argument to someone you want to convince in two minutes</p> <p>Students vote for best elevator pitch and discuss why it met their criteria</p>

Strand content	Learning outcomes	Example activities	Example assessment
Academic reading, critical analysis and textual interrogation	<p>Learn the techniques of skimming and scanning</p> <p>Identify the strengths and weaknesses of source material</p> <p>Evaluate the place of source material within the wider debate</p>	<p>Why?</p> <p>Summarise the key arguments in a monograph after being given 20 minutes to read it; discuss the different strategies adopted e.g. using the index, reading the introduction and conclusion</p> <p>Locate key information in a text which is not really about that topic, but does contain useful snippets.</p> <p>Discuss what it means to critique a text - ie. not necessarily finding fault with everything; list the key evaluative criteria you would apply to texts in your field in order to establish their relative value and contribution</p> <p>Evaluate critical appraisal tools (e.g. CASP, peer review reporting, journal referee guidelines) and discuss their value and potential application in your discipline</p>	<p>Timed exercise - skimming for key information: peer assess in pairs</p> <p>Write a critical review of a subject-appropriate text (part of formal course assessment)</p>
Strand 4 Mapping and evaluating the information landscape			
Identify trusted source formats	<p>Select appropriate resources for your assignment, discriminating between good quality academic sources and other sources</p> <p>Develop evaluative criteria for recognizing and selecting trustworthy sources of academic quality in your discipline</p>	<p>Students explore a number of sources - for instance real and spoof websites (e.g. http://www.dhmo.org/) - and consider how they identify trustworthy sources</p> <p>Compare a subject entry in Wikipedia with an entry in a non-current encyclopedia and discuss their relative value</p> <p>Examine monographs, journals, reports and other formats</p>	<p>Devise a list of criteria for assessing trustworthiness and credibility of source formats</p> <p>Students locate a book, a journal article and a website not on their reading list and consider in pairs the relative value of what they have found to their assignment</p>
Who are the experts in the field? How do we know?	<p>Identify the key experts in your field</p> <p>Analyse what makes an expert in your discipline</p>	<p>Choose a noteworthy author in the discipline and evaluate his/her impact through citations. Does this author qualify as an expert? Justify.</p>	<p>Tutor feeds back on student evaluation of expertise</p>

Strand content	Learning outcomes	Example activities	Example assessment
Evaluating source material and its appropriateness for your specific purpose	Use information sources appropriately to develop or support your argument Develop evaluative criteria for assessing ways of using source material in your work	Distinguish and discuss how you might use source material (to check facts, to grasp background information, to support your argument, to undermine someone else's argument ...) look at a sample text and categorise the reasons why they have used source material	Marks in first-year assignments explicitly awarded for appropriate use of evidence and sources
Strand 5 Resource discovery in your discipline			
Using key finding aids in your discipline	Identify key finding aids in your discipline - e.g. catalogues, full-text databases, abstract and indexing services Develop strategies for using them	Discuss the differences between academic finding aids and freely available search engines (e.g. will Google tell you what books are in the library?) list the different types of information you need to find out, and match them up with the various aids- which fits your need best?	<i>Appropriate assessments must be developed and carried out by or in collaboration with faculty members</i>
Going beyond the key finding aids	Identify subject-specific collections of information such as gateways and portals Develop strategies for using them	Evaluate a subject-specific resource new to you and identify how it fits into your information landscape (discuss or mind-map)	
Finding and using specialist forms of information	Identify the types of specialist information common in your discipline - e.g. datasets, statistics, archival evidence Develop strategies for using them, including awareness of sources of expert help	Give students some raw data and ask them to identify what subject disciplines might use it, and how. Would it be useful for your own subject? Locate sources of data that fall outside your field and discuss how they might be helpful (e.g. a historical dataset for studying literature)	
Finding and using people as information sources	Identify the strengths of people in your personal network - peers, academic staff, and others - as sources of information Evaluate the strengths of online user-generated	Discuss the relative value of using social media (e.g. blogs/Facebook/Twitter) as a source of information Choose a prominent, networked scholar	

Strand content	Learning outcomes	Example activities	Example assessment
	content as sources of information	and explore his/her academic research, popular profile, and use of social media	
Strand 6 Managing information			
Note-taking	Distinguish between note-taking (dictation) and note-making (considered retention of vital points) Develop a strategy for note-making - in lectures/supervisions, for your reading, in everyday situations	Listen to short (e.g. 2 minute) podcast and make: 1) as full a transcript as possible; 2) notes of salient points. Reflect on ease and relative value of both approaches Identify which parts of your notes are reflect the original content and which are related to your own thinking - Evaluate the strategies you use to distinguish different types of notes	Peer discussion and assessment
Time management and planning	Produce a strategy to manage your workload Evaluate your own learning and working styles	Create a plan including deadlines and a realistic time frame for your next piece of assessed work/across the whole term Assess your learning and working styles and identify areas of weakness	Include plan with submitted assignment - discuss with tutor and reflect on value
Storing information effectively	Develop and implement a plan for organising your files (including naming and organising folders) Decide on an appropriate information management technique suitable for your discipline / the resources you use	Devise a system for storing a number of files prepared by session leader - including some variant versions, e.g. tutor comments on an essay draft. Explore cloud storage tools and discuss the merits of remote vs local storage, online vs. paper storage. List potential hazards!	Peer assessment - students discuss, compare and rank their current strategies.
Bibliographic and reference management	Identify and use an appropriate citation style in your assignments Construct appropriate bibliographies for your assignments Evaluate reference management tools and strategies in the light of your own workflow	Hands-on comparison and exploration of free and paid for reference management software; write a review of different software for other students Discuss the merits of different reference management strategies (e.g. software vs. paper storage). List potential hazards.	Timed assessment in class - generate an appropriately formatted bibliography from a reference list supplied by class leader, using the tool of your choice.
Push services / alerting / keeping up to date	Develop appropriate strategies for current awareness in your field	Identify and evaluate various of alert services - RSS, email alerts, aggregators	Short reflective piece describing whether and how you will use alert

Strand content	Learning outcomes	Example activities	Example assessment
		etc.	services - and how you'll store and organise the information they generate.
Strand 7 Ethical dimension of information			
Attribution and avoiding plagiarism	Identify the steps you can take to avoid plagiarism, deliberate or inadvertent Use correct academic practices in quoting, citing and paraphrasing	Discuss the need to attribute quotations, paraphrases and ideas appropriately Identify why plagiarism might happen and categorise the types of poor academic practice that lead to plagiarism Plagiarise deliberately and pass to another student to put it right	Marks in first-year assignments explicitly awarded for bibliographies and appropriate attribution
Sharing information appropriately	Summarise the key ways you can use and share information without infringing another's rights Distinguish between collaboration and collusion Compare dissemination practices in your discipline across a range of publication platforms (preprint repositories, blogs, bibliographic sharing services etc.)	Students are asked to find suitable images for use in a class presentation - introduce concept of Creative Commons Examine a number of scenarios to determine which constitute collusion	Marks are awarded for the appropriate use of image and video sources in student presentations
Awareness of copyright and IPR issues	Develop an awareness of how copyright and IPR issues impact on your work Develop strategies as appropriate for working within the legal framework	Students discuss the role of copyright laws in protecting musicians, artists and file makers Reflect on how copyright laws have impacted on them either socially or academically Examine a number of scenarios to determine which constitute copyright infringement	Students work together to develop a policy or guidelines for their institution that reflects real practice and complies with legal issues. Assessment by Copyright Officer/IPR specialist
Strand 8 Presenting and communicating knowledge			
Finding your voice	Use language appropriately in your academic writing Analyse competing arguments and the use of evidence to justify a position	Practise writing in first and third person. Discuss appropriate use of language for your audience Comment critically on the views of others, so your voice is distinguished - working in pairs, swap and critique	<i>Use activity as formative assessment</i>

Strand content	Learning outcomes	Example activities	Example assessment
Managing your online identity and digital footprint	Develop an awareness of how you appear to others online Decide on appropriate level of information to communicate to different audiences (ie manage your digital footprint) Evaluate the suitability of different online locations / tools for your online presence	Working in pairs, Google each other and assemble a profile of the other person, including any negative information. Consider your own profile as a 'producer' - how much of a trail do you leave by consuming information online?	<i>Use activity as formative assessment</i>
Communicating your findings appropriately	Choose an appropriate writing style, level and format for your intended audience Summarise the key methods of publishing research findings in your discipline (including self-publication, e.g. blogging) Assess the relationship between writing style, audience and publication platform	Students look at how information on a topical issue in their discipline e.g. climate change is presented in newspapers, on websites and in academic journals and discuss the key differences	Write different short pieces communicating the same information to different audiences for different reasons
Strand 9 Synthesising information and creating new knowledge			
Formulating research questions and framing problems	Use chosen information sources to articulate and analyse new problems in your field	Discuss paradigm shifts in your field (tutor input) - e.g. impact of quantum theory on Newtonian physics Discuss new ways of framing questions or approaching issues in the field (potentially in the context of your dissertation topic)	Assessment involves a set of marks awarded for innovation and creativity when framing problems. Students work on creating their own research questions (tutor feedback needed)
Assimilating information within the disciplinary framework	Assess the value of new information objectively in the context of your work Develop new insights and knowledge in your discipline	In pairs students are given a broad topic (e.g. climate change) and asked to prepare a for / against argument. Students debate issue and a vote is taken. Marks awarded for use of evidence to support arguments.	Second and third year assessments is explicit about how marks are awarded for assimilation of ideas
Strand 10 Social dimension of information			
Becoming a lifelong learner	Develop an awareness that learning is a continuous ongoing process outside of formal educational establishments Develop strategies for assimilating new information to the conceptual framework	Discuss the statement that "When the facts change, I change my opinion" in the light of choosing whether and how to vote in a general election Reflect on how you have changed as a	<i>Use activity as formative assessment</i>

Strand content	Learning outcomes	Example activities	Example assessment
		learner since school	
Information handling, problem solving and decision making in the workplace	Transfer the skills of finding, critically evaluating, and deploying information to the workplace	Without using any subscription resources, students search for information to answer a specific query. They carry out the same search to compare the information they can find using paid for resources. Find information to help you handle a change management scenario in the workplace	<i>Use activity as formative assessment</i>
Information handling, problem solving and decision making in your daily life	Transfer the skills of finding, critically evaluating, and deploying information to daily life	Reflect on the best way to choose an energy supplier using discussion and internet sources to help you. Discuss the trust value of cost comparison websites	<i>Use activity as formative assessment</i>
Ethics and politics of information	Develop strategies for assimilating and analysing new information, including that which challenges your world view	Presentation of sensitive or nuanced information in the press - compare how the same story is reported in a tabloid, a broadsheet and in various news sources	<i>Use activity as formative assessment</i>

APPENDIX 1: MAPPING TO EXISTING IL FRAMEWORKS AND STANDARDS

This table shows where the New Curriculum overlaps with established information literacy models and frameworks. The ACRL (2000) and ANZIIL (2004) frameworks are expressed as a set of statements defining the activities and behaviour of the information literate person, while the SCONUL Seven Pillars model (1999, rev. 2011) offers a more iterative picture of the information literacy process. These frameworks have been extensively described and compared by Andretta (2005).

The models have been criticised variously for a lack of attention to the affective dimension of learning (Walton, 2010, on the Seven Pillars) and for imposing a positivist framework which undermines the concept of learning as a constructive process (Whitworth, 2006, on the ACRL standards). In addition, all three models focus heavily on the more functional or lower-order skills at the expense of articulating the higher-order cognitive and intellectual aspects of information handling. For instance, four of the Seven Pillars deal with identifying, scoping, and searching for information, while synthesis and knowledge creation are subsumed into the 'Present' pillar alongside the skills of summarising and attributing.

In emphasising the view of IL as a continuum, the New Curriculum attempts to address the omission of affective elements and the eliding of higher-order aspects with functional skills. It also highlights the importance of transition as a factor at the beginning and end of the undergraduate career, and throughout the learning process. Blank spaces indicate elements where no mapping to existing models was apparent.

New Curriculum	SCONUL 7 PILLARS	ACRL Standards	ANZIIL standards
Strand 1 Transition from school to higher education			
What are the expectations at higher education level in your discipline?			
What are the conventions around reading, writing and presenting at higher education level in your discipline?			
Reflect on your current and previous information behaviour – what's different?			
Strand 2 Becoming an independent learner			
Learning to learn			
Affective dimension of information literacy			
Strand 3 Developing academic literacies			
Academic writing, rhetoric and persuasive writing	Evaluate		
Academic reading, critical analysis and textual	Evalute		

New Curriculum	SCONUL 7 PILLARS	ACRL Standards	ANZIIL standards
interrogation			
Strand 4 Mapping and evaluating the information landscape			
Identify trusted source formats	Evaluate	Evaluate information and its sources critically	3. Critically evaluates information and the information seeking process
Who are the experts in the field? How do we know?	Evaluate	Evaluate information and its sources critically	3. Critically evaluates information and the information seeking process
Evaluating source material and its appropriateness for your specific purpose	Evaluate	Evaluate information and its sources critically	3. Critically evaluates information and the information seeking process
Strand 5 Resource discovery in your discipline			
Using key finding aids in your discipline	Gather	Access the needed information effectively and efficiently	1. Recognises the need for information and determines the nature and extent of the information needed
Going beyond the key finding aids	Gather	Access the needed information effectively and efficiently	1. Recognises the need for information and determines the nature and extent of the information needed
Finding and using specialist forms of information	Gather	Access the needed information effectively and efficiently	1. Recognises the need for information and determines the nature and extent of the information needed
Finding and using people as information sources	Scope	Access the needed information effectively and efficiently	1. Recognises the need for information and determines the nature and extent of the information needed
Strand 6 Managing information			
Note-taking			
Time management and planning	Manage		
Storing information effectively	Manage		4. Manages information collected or generated

New Curriculum	SCONUL 7 PILLARS	ACRL Standards	ANZIIL standards
Bibliographic and reference management	Manage		4. Manages information collected or generated
Push services / alerting / keeping up to date			
Strand 7 Ethical dimension of information			
Attribution and avoiding plagiarism	Manage	Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally	6. Uses information with understanding and acknowledges cultural, ethical, economic, legal and social issues surrounding the use of information
Sharing information appropriately	Manage	Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally	6. Uses information with understanding and acknowledges cultural, ethical, economic, legal and social issues surrounding the use of information
Awareness of copyright and IPR issues	Manage	Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally	6. Uses information with understanding and acknowledges cultural, ethical, economic, legal and social issues surrounding the use of information
Strand 8 Presenting and communicating knowledge			
Finding your voice	Present		
Managing your online identity and digital footprint		Use information effectively to accomplish a specific purpose	4. Manages information collected or generated
Communicating your findings appropriately	Present	Use information effectively to accomplish a specific purpose	
Strand 9 Synthesising information and creating new knowledge			
Formulating research questions and framing problems	Evaluate		5. Applies prior and new information to construct new concepts or create new understandings
Assimilating information within the disciplinary framework	Evaluate	Incorporate selected information into one's knowledge base	5. Applies prior and new information to construct new concepts or create

New Curriculum	SCONUL 7 PILLARS	ACRL Standards	ANZIIL standards
			new understandings
Strand 10 Social dimension of information			
Becoming a lifelong learner			6. Uses information with understanding and acknowledges cultural, ethical, economic, legal and social issues surrounding the use of information
Information handling, problem solving and decision making in the workplace			
Information handling, problem solving and decision making in your daily life			
Ethics and politics of information			

Identify	Scope	Plan	Gather	Evaluate	Manage	Present
Understands:	Understands:	Understands:	Understands:	Understands:	Understands:	Understands:
<ul style="list-style-type: none"> • New knowledge & data is constantly being produced & that there is always more to • Being information literate involves developing a learning / research habit so new information is being actively sought all the time • Ideas and opportunities are created by investigating / seeking information • Scale of the world of published and unpublished information and data • Different disciplines place greater emphasis • On different types of information & data • A researchers' need for information will vary depending on task at hand, subject discipline & stage of research 	<ul style="list-style-type: none"> • What types of information are available • The characteristics of the different types of information source & how they may be affected by format • The processes for the dissemination of research outputs, including publication, in terms of how and why individuals make their research results known and the currency of information • Issues of accessibility • What services are available to help & how to access them 	<ul style="list-style-type: none"> • Range of searching techniques available • Differences between search tools • Why complex search strategies can make a difference to the breadth & depth of information found • Need to develop approaches to searching such that new tools are sought for each new question • The need to match data collection techniques to the circumstances • Need to revise keywords & adapt strategies • Value of controlled vocabularies & taxonomies in searching 	<ul style="list-style-type: none"> • How information & data is organised • How libraries provide access to resources • How digital technologies are providing collaborative tools to create & share information • Issue involved in collecting new data • Different elements of a citation • Use of abstracts • Need to keep up to date • Difference between free & paid for resources • Risks involved in operating in a virtual world • Importance of appraising & evaluating search results 	<ul style="list-style-type: none"> • The information and data landscape of their discipline and how their research fits in <ul style="list-style-type: none"> • Issues of quality, accuracy, relevance, bias, reputation and credibility relating to information and data sources • The importance of consistency in data collection <ul style="list-style-type: none"> • How the outputs of research are evaluated and disseminated, including the peer review process, publication, other forms of dissemination and research assessment • The relevance of citation and bibliometrics to their research context 	<ul style="list-style-type: none"> • Their responsibility to be honest in all aspects of information handling & dissemination, e.g. copyright, plagiarism & intellectual property right issues • Need to adopt appropriate data handling methods • Role they play in helping others in information seeking & management • Need to keep systematic records • Importance of storing & sharing information & data ethically • The role of professionals, such as data managers and librarians, who can advise, assist and support with all aspects of information management 	<ul style="list-style-type: none"> • Difference between summarising & synthesising • Different formats of writing / presentation styles • Data can be presented in different ways • Personal responsibility to store & share information & data • Personal responsibility to disseminate information & knowledge • How their research outputs will be peer reviewed, evaluated and disseminated • Processes of publication • Concept of attribution • Individual can take an active part in creation of information through traditional publishing & digital technologies
Is able to:	Is able to:	Is able to:	Is able to:	Is able to:	Is able to:	Is able to:
<ul style="list-style-type: none"> • Identify a lack of knowledge in a subject area • Identify a research topic / question and define it using simple terminology • Articulate current knowledge on a topic • Recognise a need for information and data to achieve a specific end and define limits to the information need • Use background information to underpin research • Take personal responsibility for a research project • Manage own time effectively to complete a research project 	<ul style="list-style-type: none"> • "Know what you don't know" to identify any information gaps • Identify which types of information will best meet the need • Identify the available search tools, such as general and subject specific resources at different levels • Identify different data collection methods • Identify different formats in which information may be provided • Demonstrate the ability to use new tools as they become available 	<ul style="list-style-type: none"> • Scope their search question clearly & in appropriate language • Construct a search strategy by using appropriate keywords & concepts, defining & setting limits • Select the most appropriate search tools • Identify controlled vocabularies and taxonomies to aid in searching • Identify appropriate search techniques (e.g. from finding contents pages and indexes to complex data mining) • Identify specialist search tools appropriate to each individual information need 	<ul style="list-style-type: none"> • Use a range of retrieval tools & resources effectively • Construct complex searches appropriate to different digital & print resources • Translate the search strategy to work in different resources • Redefine a search strategy based on previous result sets • Sort and manipulate results sets • Access full text information • Use appropriate search techniques to collect raw data • Keep up to date with new information • Engage with their community to share information • Identify when the 	<ul style="list-style-type: none"> • Distinguish between different information resources • Choose suitable material on their search topic • Assess the quality, accuracy, relevance, bias, reputation & credibility of the resources found • Assess the credibility of the data gathered • Read critically, identifying key concepts & arguments • Relate the information found to the original search strategy • Critically appraise & evaluate own findings • Know when to stop • Use citation metrics as an evaluative technique (e.g. citation counting, journal impact factors, 	<ul style="list-style-type: none"> • Use bibliographic software if appropriate to manage information • Cite printed & electronic resources using suitable referencing styles • Create appropriately formatted bibliographies • Demonstrate awareness of issues relating to the rights of others including ethics, data protection, copyright, plagiarism & other intellectual property issues • Set & meet standards of conduct for academic integrity • Identify data curation opportunities to ensure that research data is ethically stored for re-use in other projects • Use appropriate data 	<ul style="list-style-type: none"> • Use the information & data found to address original question • Summarise documents and reports verbally & in writing • Incorporate new information into context of existing knowledge • Analyse & present data appropriately • Synthesise & appraise new & complex information from different sources • Communicate effectively using appropriate writing styles in a variety of formats • Communicate effectively verbally • Select appropriate publications & dissemination outlets in which to publish

The SCONUL Seven Pillars of Information Literacy (2011)

ACRL Standards (2000)

An information literate individual is able to:

- Determine the extent of information needed
- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Incorporate selected information into one's knowledge base
- Use information effectively to accomplish a specific purpose
- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally

ANZIIL standards (2004)

The information literate person:

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

References

ACRL (2000) *Information Literacy Competency Standards for Higher Education*. Available

at: <http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm> (retrieved 05 July 2011)

Andretta, Susie (2005) *Information Literacy: a practitioner's guide*. Oxford: Chandos.

ANZIIL (2004) *Standards*. Available at: <http://oil.otago.ac.nz/oil/index/ANZIIL-Standards.html> (retrieved 05 July 2011)

SCONUL (2011) *The Seven Pillars of Information Literacy*. Available at: http://www.sconul.ac.uk/groups/information_literacy/seven_pillars.html (retrieved 05 July 2011)

Walton, Geoff (2010) 'Demolishing the Seven Pillars: a warning from research?', LILAC 2010 Conference, Limerick, Ireland. Available at:

http://www.lilconference.com/dw/programme/Presentations/Tuesday/City_View_Suite/Walton_Demolishing.pdf (retrieved 08 July 2011)

Whitworth, Andrew (2006) 'Communicative competence in the information age: towards a critical theory of information literacy education', *Italics* 5(1) Available at:

http://www.ics.heacademy.ac.uk/italics/vol5-1/webpages/Whitworth_final.htm (retrieved 08 July 2011)

APPENDIX 2: EVIDENCE TOOLKIT FOR IMPLEMENTING THE CURRICULUM

The aim of this document is to provide a summary of a selection of evidence from recent research for those coordinating information literacy within their institution. The evidence might be useful when seeking funding or support from senior management. It might also be helpful when encouraging academic and academic support colleagues to collaborate on information literacy issues.

The starting point for this evidence toolkit came from a study by commissioned by JISC (Connaway and Dickey, 2010) that summarised findings from selected OCLC, RIN and JISC user behaviour projects. Table 14 (p.37) summarises the relevance of the research to information literacy and formed the basis for the following table. This has been updated and amended to make it more relevant for our audience with the most recent research present first. Additional studies have also been added not considered by the JISC report. Research from 2008–2011 is included in the following table to ensure some of the most up-to-date studies are taken into account.

Study	Summary findings	Practical implications	Potential audience
Lumsden, McBryde-Wilding and Rose, (2010) University of Northampton research	<ul style="list-style-type: none"> • Transition to university can present challenges to students regardless of their educational history • However, in one cohort 35% of students had not visited a library before coming to university, they were used to receiving continual formative feedback on work and model answers. • Many students were intimidated by large research libraries and unfamiliar with effective internet search techniques • With scaffolded support, students reporting greater confidence levels in accessing appropriate resources, high levels of student completion, retention and satisfaction 	Value of high quality library induction pitched at an appropriate level. Need for good rapport with library staff Need for library staff to be welcoming and open and provide scaffolded, timely help in the transition period	Academic staff Library staff / managers
Jones et al (2010)	<ul style="list-style-type: none"> • Undergraduate students are not homogeneous in their approaches to technology and learning – made up of minorities some of whom do not like technology • Students do not transfer their use of technologies in a social setting to their academic work • Students over-estimates their abilities with using library resources 	Cannot make assumptions based on students use of or familiarity with technology Need to offer a variety of approaches and different types of services to cater for the minorities	Senior management in HE Academic staff Library staff
RIN (2010) Research support services:	<ul style="list-style-type: none"> ▪ Researchers need access to tools to support document and data sharing across institutions ▪ Institutions should review their training provision and the 	Need to broaden the support offered to researchers to include	Senior management in HE Academic staff Library staff

<p>What services do researchers need and use?</p>	<p>configuration of support services to develop shared services but also look to provided customised support</p> <ul style="list-style-type: none"> ▪ Libraries and research offices need to work together ▪ Researchers need training and guidance on copyright, IPR and licensing issues ▪ Research information systems need to reduce admin burdens and not interfere with creativity 	<p>topics such as data management, copyright etc.</p> <p>Support services need to be better coordinated to meet researchers need</p> <p>IT Systems need to make life easier</p>	
<p>LLIDA report (2009)</p>	<ul style="list-style-type: none"> • Learners can, under the right conditions, become more critical, evaluative, self-aware, self-confident, skilled and capable in the use of technologies • Learners can also, under the right conditions, develop a wider and more effective range of strategies for their own learning • Although some of these capabilities may be 'generic', the consensus is that they are best supported in 'communities of practice', 'communities of inquiry', or 'learning groups' focused on tasks of value and interest to the learner • Skills acquired iteratively, through practice within authentic tasks and as needed are better retained than those taught one-off, in isolation, and through instruction. 	<p>Information literacy works and helps learning</p> <p>Information literacy should be embedded into the academic curriculum to be most effective</p> <p>The curriculum should include reflection and active learning rather than more passive types of</p>	<p>Senior management, lecturers, other HE staff</p>

	<ul style="list-style-type: none"> The process of development will be incremental and challenging. Learners needs scaffolding in this first instance with greater flexibility later in the curriculum 	<p>learning</p> <p>The programme should be developed over time, with greater emphasis on support in the first year</p>	
<p>Researcher of tomorrow (2009) interim project findings</p>	<ul style="list-style-type: none"> Findings based on Gen Y students - less likely to turn to library staff (especially subject librarians) for help, more likely to rely on supervisors for recommendations on research resources and technology support More likely to turn to other students for help and support using technology More conservative and risk averse in research behaviour e.g. choice of information sources, awareness of the need for authority and authenticity Embrace technology readily and use it intuitively BUT sceptical about the inherent merits of technology and do not equate ease of access with quality of resources Willing to learn to use new tools if the following factors are evident: <ul style="list-style-type: none"> tools complement, not challenge ways of working (essentially traditional and guided by their supervisors); pay back for effort is clear in terms of their research; support in adopting new applications is readily 	<p>Need to clearly demonstrate value that libraries and librarians can offer – marketing</p> <p>Need to harness peers as a way of providing support</p> <p>Need to be clear of benefits of technology and only use where relevant and with support from academic staff</p>	<p>Senior management in HE Librarians / learning developers</p>

	available, especially from peers or supervisor		
Students' use of research content, 2009	<ul style="list-style-type: none"> ▪ Users assess content based on its relevance to their assignment – they are assessment led ▪ Students are aware of differences between formal research and basic internet content although few understand concepts such as peer review ▪ Students will use library catalogues and then Google – although the internet is distrusted and they are aware their tutors do not respect sites such as Wikipedia ▪ Students rarely go beyond the first few hits of a Google search ▪ Students will use discipline specific databases for research but can become dependant on one database 	<p>Students will use a range of sources to support their studies – with guidance</p> <p>Students can be discerning but are led by assessment criteria and their tutors expectations</p>	<p>Senior management in HE Academic staff Library staff</p>
User behaviour in resource discovery, 2009	<ul style="list-style-type: none"> ▪ Information literacy skills are lacking; they have not kept pace with digital literacy ▪ When level of information literacy and domain knowledge increases, increased use of quality resources 	<p>Don't make assumptions about students skills based on their familiarity with technology.</p> <p>Information literacy supports learning</p>	<p>Senior management in HE Academic staff Library staff</p>
CIBER (2008) Information behaviour of researcher of the future,	<ul style="list-style-type: none"> ▪ Students are not expert searchers and over-estimate their abilities. They spend a little time looking at a lot of sources. ▪ Students tend to spend little time, little effectiveness in evaluating search results; prefer natural-language searching and trust Google; do not find library resources 	<p>Don't make assumptions about students based on their apparent familiarity with technology.</p>	<p>Senior management in HE Academic staff Library staff</p>

	<p>intuitive</p> <ul style="list-style-type: none"> ▪ Teachers not passing literacy on to the pupils ▪ It may be too late to change ingrained coping behaviour at HE level 	Information literacy needs to be part of the education system from the outset	
Lea (2009) Digital Literacies in HE ESRC research	<ul style="list-style-type: none"> ▪ Students use a wide range of texts, including digital sources and can work seamlessly with both ▪ Students usually start with resources provided by their tutor including reading lists but also rely on lectures and PowerPoints ▪ Students are not indiscriminate about using of web based sources but guided by assessment criteria when using sources ▪ Students are concerned about inadvertent plagiarism and may be unsure what exactly constitutes plagiarism ▪ Students use a wide range of sites for social purposes but this does not translate into their academic practice ▪ Students have a strong sense of personal identity, often not favouring discussions in the VLE and preferring to use personal email accounts ▪ Students often resisted using e-portfolios and other tools to reflect on their learning 	<p>Students will be lead by assessment and their tutors over their use of sources</p> <p>Librarians and learning developers will need to work closely with course leaders on embedding aspects of information literacy into the curriculum</p> <p>Students may be resistant to attempts to get them to reflect on learning unless linked to assessment</p>	<p>Academic staff / Course designers</p> <p>Librarians / learning developers</p>
RIN 'Mind the skills gap' report (2008):	<ul style="list-style-type: none"> ▪ Teaching IL to researchers is clearly needed but there is a lack of coordination in many institutions in providing information related training. ▪ Academics and support staff need to work together better. ▪ Librarians tend to focus on information seeking rather than 	<p>Training in information handling is patchy across UK higher education</p> <p>Many training providers</p>	<p>Senior management in HE</p> <p>Academic staff</p> <p>Library staff</p>

	<p>evaluating, organizing, managing, transforming and communicating knowledge</p> <ul style="list-style-type: none">▪ All training providers need to adopt more systematic approaches to identifying and assessing the needs of researchers	<p>are still not working collaboratively within an institution</p> <p>Many institutions do not understand the needs of researchers</p>	
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References

Beetham, H., McGill, L and Littlejohn, A. (2009) Thriving in the 21st Century: Learning Literacies in the Digital Age (LLIDA). JISC project. Available at: <http://www.academy.gcal.ac.uk/llida/LLiDAReporJune2009.pdf>

CIBER/UCL (2008) Information behaviour of the researcher of the future (commissioned by BL and JISC). Available at: http://www.jisc.ac.uk/media/documents/programmemes/reppres/gg_final_keynote_11012008.pdf

Connaway, L.S. and Dickey, T.J. (2010) *The digital information seeker: Findings from selected OCLC, RIN and JISC user behaviour projects*. JISC. Available at: <http://www.jisc.ac.uk/publications/reports/2010/digitalinformationseekers.aspx#downloads>

JISC (November 2009), Students' use of research content in teaching and learning. Available at: <http://www.jisc.ac.uk/media/documents/aboutus/workinggroups/studentsuserresearchcontent.pdf>

JISC (November 2009), User behaviour in resource discovery. Available at: <http://www.jisc.ac.uk/whatwedo/programmes/inf11/userbehaviourbusandecon.aspx>

Jones, C, Ramanau, R, Cross, S and Healing, G (2010) 'Net generation or Digital Natives: Is there a distinct new generation entering university?', *Computers & Education*, 54, (3), 722-732.

Lea, Mary et al (2009). *Digital Literacies in Higher Education: Full Research Report ESRC End of Award Report, RES-000-22-2470*. Swindon: ESRC. Available at: <http://www.esrc.ac.uk/my-esrc/grants/RES-000-22-2470/outputs/Read/1960042d-e172-4cbf-833c-36c7736042c9>

Lumsden, E., McBryde-Wilding, H. and Rose, H. (2010) Collaborative practice in enhancing the first year student experience in higher education. *Enhancing the Learner Experience in Higher Education*. 2(1), pp. 12-24. 2041-3122.

Research Information Network & Consortium of Research Libraries (2007) *Researchers' use of academic libraries and their services*. London: RIN. Available at: <http://www.rin.ac.uk/files/libraries-report-2007.pdf>

Research Information Network (July 2008). Mind the skills gap: information-handling training for researchers. Available at:
<http://www.rin.ac.uk/our-work/researcher-development-and-skills/mind-skills-gap-information-handling-training-researchers>

Research Information Network / OCLC (November 2010). Research support services: what services do researchers need and use? Available at:
<http://www.rin.ac.uk/our-work/using-and-accessing-information-resources/research-support-services-what-services-do-resear>

APPENDIX 3: SIX TIPS FOR TRANSFORMING YOUR TEACHING

Many staff - particularly librarians - may feel that the New Curriculum for Information Literacy is unattainable due to the practical realities and resourcing of their day-to-day jobs. The following tips are designed for a 'worst-case scenario' in which information literacy is perceived as a set of bolt-on low-level skills, separate from and subordinate to academic practice; where sessions are delivered on a non-mandatory basis within the physical library, and confused or conflated with library orientation or catalogue usage; and where training is limited to sessions in the first few weeks of the academic year.

In such a scenario, what can librarians do to transform their practice to align with the broader view of information literacy and help students move towards becoming independent learners?

1. FOCUS ON THE RESEARCH PROCESS

Even one-off library classes can be made practical, engaging and transferable by switching the focus away from a specific tool or interface and onto the information needs that underlie it. Rather than 'teaching Scopus' or 'offering EndNote training', embed the interface training into classes that cover the whys and how of carrying out a literature search and good reference management practice.

2. USE TITLES THAT REFLECT THE LEARNING OUTCOME

This means having **clear, user-focused learning outcomes** and matching your content and title to the learners' need rather than to what the library wishes to push. (Remember that "nobody except librarians want to search; everyone else just wants to find".)

3. INCORPORATE ACTIVE AND REFLECTIVE COMPONENTS

Talk less. We learn by doing, not listening. Rather than delivering a full class as instruction and demonstration, give participants practical exercises that reflect their own research needs and the chance to discuss and reflect on how the newly-acquired knowledge will enhance, simplify, speed up or otherwise change their working practices.

4. AUDIT YOUR LEARNERS' NEEDS

This can be as simple as **asking participants to fill in a survey** at the start of the class on where they currently look for information, together with their degree of familiarity with an authoritative resource in their area. Even a brief questionnaire yields valuable information about how to pitch each class to address those learners' needs.

5. CARRY OUT POST-SESSIONAL ASSESSMENT

Executing a task and receiving feedback on performance is crucial to retaining and embedding new skills and behaviours in individual practice. Set students a task that reflects the learning outcomes and **ask them to assess one another's performance** - peer assessment allows participants to engage more deeply in the reflective process.

6. THINK ABOUT TIMING

Wherever possible, **time classes to coincide with the information needs generated at different stages of the student career.** Instructional sessions given at the start of the academic year are unlikely to make much impact, but addressing information needs as they emerge will support not only the study process but the development of the student as an autonomous learner.

APPENDIX 4: EXAMPLES OF GOOD PRACTICE IN INFORMATION LITERACY

As part of the project we intended to collect a number of examples of good practice that was occurring in the education sector. In many cases our experts were themselves involved in this work. Two examples are included in this document from two of the experts. It is suggested that collecting further examples of good practice might be useful to illustrate how the curriculum could be implemented. The project website and wiki might act as a repository for this material. However a comprehensive list of good practice in the field is difficult to keep up to date. We also found that a lot of other bodies are already doing this work. Therefore, rather than duplicate this work, for the purposes of our project we have presented just two case study and have collected a list of organisations and websites that also include good practice examples.

Sources of good practice in information literacy

ACRL Characteristics of Programs of Information Literacy that Illustrate Best Practices: A Guideline: <http://www.ala.org/ala/mgrps/divs/acrl/standards/characteristics.cfm> (highlights features that a good practice programme should include rather than linking to specific examples of good practice)

Cardiff University, (2009) Handbook for Information Literacy Teaching: <http://www.cardiff.ac.uk/insrv/educationandtraining/infolit/hilt/index.html>

CILASS: Centre for Inquiry-based Learning in the Arts and Social Sciences Case Studies: <http://www.sheffield.ac.uk/cilass/cases> (includes case studies and projects using inquiry based learning at Sheffield)

The Information Literacy website: <http://www.informationliteracy.org.uk/resources-by-theme/> (a collection of teaching materials from a wide range of organizations, organised around type of resources and topics)

JORUM: <http://www.jorum.ac.uk> (A repository for sharing teaching materials in UK higher education. Hint: try searching by topic e.g. internet evaluation)

LOEX: Clearing house for library instruction: <http://www.emich.edu/public/loex/resources.php> (a selection of resources from US universities on topics such as plagiarism and web searching)

IFLA Information Literacy Resources Directory: <http://www.infolitglobal.info/en/>

Scottish Information Literacy Framework exemplars: <http://caledonianblogs.net/nifls/exemplars/> (includes exemplars from schools, HE, FE, public libraries and work place libraries)

Vitae database of good practice: <http://www.vitae.ac.uk/dop> (contains a wide range of best practice for supporting researchers, not just information literacy)

Welsh Information Literacy Project <http://library.wales.org/information-literacy/case-studies/> (includes information literacy best practice examples from Wales in schools, FE, HE and lifelong learning)

Good Practice Case Study 1: SMILE, Glasgow Caledonian University

Your name
Debbi Boden

Institution
Glasgow Caledonian University

Title of example
SMILE – Best practice case study

Description and further information

SMILE (a blended learning approach to information literacy and communication skills) is an online, interactive Information Literacy & Writing Skills programme. The project was a JISC project and a joint collaboration between the University of Worcester, University of Loughborough and Imperial College London. The project followed the 'Life Cycle Study' model as demonstrated in diagram 1. The content of the programme is:

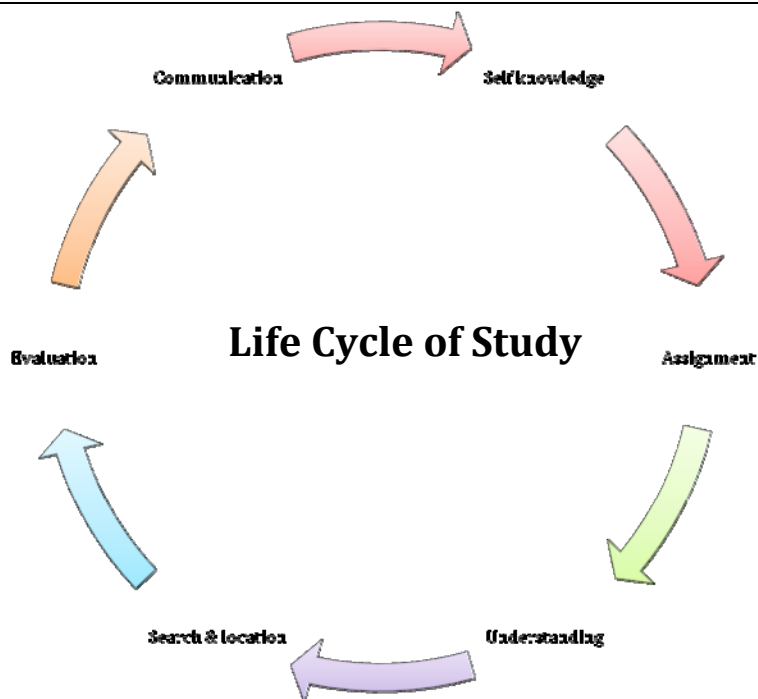
- Learning styles
- Understanding the question
- Organising and prioritising your time
- Information resources
- Managing information
- Communicating information
- Current awareness



Diagram 1

As part of the project, SMILE had to be a validated course. The programme was a 15 credit course and was taught in the first semester of the academic year 2008/09. The programme evaluation demonstrated how useful students had found the integrated programme, comments from students included:

- Made learning easier
- Feel you are progressing
- Well put together
- Well designed
- Very happy with it
- Good intro to University
- Directed learning gave me chance to manage my time



Boden, D. & Wrathall, K. 2009

Freely available through a Creative Commons License, SMILE is written in HTML and can be adapted for local use. The programme comes with a 'Teaching Toolkit' that contains lesson plans, learning outcomes, presentations, assessment criteria and assessments.

Format of session (seminar, hands-on practical, online resource etc.)

The course was taught with a blended learning approach with hands on sessions and some online units worked through in class.

Learning outcomes

Each of the learning units within SMILE has a set of learning outcomes, for example:

Understanding the question:

By the end of this unit, you will be able to recognise the key words within your assignment question. You will be able to quickly identify the different components of assignments, recognise key words and interpret all instructions and as such make a judgement about what your examiner / your audience expects from you.

Plagiarism

By the end of this unit you will understand the ethical issues surrounding the use of information, your own responsibility to use information appropriately and how to avoid falling into the trap of 'unintentional plagiarism'.

Organising your time:

By the end of this unit, you will be able to recognise the key words within your assignment question. You will be able to quickly identify the different components of assignments, recognise key words and interpret all instructions and as such make a judgement about what your examiner / your audience

expects from you

The taught sessions of the course also had learning outcomes:

Week 1 Outcomes:

Students will be able to:

- Explore their use of information
- Log on to Moodle and navigate around the Software
- Explain the requirements of Assignment 1 and the Research Proposal
- Identify their learning style and consider the importance of learning styles

Week 2 Outcomes:

Students will be able to:

- Understand their assignment question/task
- Identify appropriate keywords
- Identify different information sources and explain when it would be appropriate to use these sources
- Describe elements of a search strategy
- Use Resources Online to locate library resources
- Describe what constitutes a well produced PowerPoint presentation
- Critique PowerPoint presentations

Week 3 Outcomes:

Students will be able to:

- Identify and apply appropriate search techniques
- Identify ways of obtaining reliable information from the Internet
- Compare and contrast the effectiveness of a range of Internet search tools
- Evaluate material found on the web
- Use Delicious to share websites
- Introduction to PowerPoint (optional)

Week 4 Outcomes:

Students will be able to:

- Identify advantages and disadvantages of using bookmarks on the web
- Reflect on their information management practice
- State why journals are an important source of academic information
- Search Academic Search Premier to locate journal articles

Week 5 Outcomes:

Students will be able to:

- Use advanced features of the PowerPoint software to enhance their presentation
- Understand the requirements of assessment 2
- Identify the key skills of giving an oral presentation

Week 6 Outcomes:

Students will be able to:

- Understand the meaning of plagiarism
- Identify examples of plagiarism
- Be aware of the consequences of plagiarism
- Understand ways to avoid plagiarism

- Understand the need for referencing
- Be aware of types of referencing in use at University of Worcester
- Use the University of Worcester referencing guides

Week 8 Outcomes:

Students will be able to:

- State the purpose of using RefWorks
- Create a personal account on RefWorks
- Directly import references into RefWorks using Academic Search Premier, Resources Online and Google
- Create in-text citations and a bibliography

Week 9 Outcomes:

Students will be able to:

- Explain why it is important to include journals as part of a literature search
- Identify which journals are held by the Library in print or electronic format
- Obtain full text articles via Academic Search Premier
- Explain the purpose of abstracting and indexing services when searching for references to journal articles

Week 10 and Week 11 Outcomes:

Students will be able to:

- Explain why newspapers are used for research
- Obtain articles from Infotrac
- Explain the purpose of Google Reader
- Add resources to their Google Reader account

Week 12 Outcomes:

Students will be able to:

- State why it is important to evaluate all information found
- Identify evaluation criteria for information sources
- Identify evaluation criteria for search tools
- Apply evaluation criteria

Week 13 Outcomes:

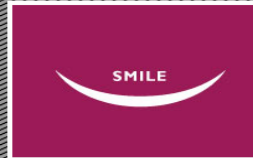
Students will be able to:

- Identify the layout and structure required to complete the report for assignment 3
- Create a TOC using the heading styles of Microsoft Word
- Modify heading styles
- Create large documents from chapters in MS word using the master document feature

Activities and opportunities for reflection

There is a variety of activities within the programme which videos' podcasts and quizzes. These provide opportunities for reflection and discussion. Formative and summative assessment is included via quizzes and formal assessment.

Example of use of video and discussion



Benefits of not plagiarising!

By not plagiarising you will:	Task
<ul style="list-style-type: none"> • feel more confident when tackling exams • feel confident at seminar discussions • know how to express an academic opinion, backed up by strong information sources • be better able to answer questions at your project viva or presentation • be competent in handling literature searches for major coursework projects • develop your subject knowledge • gain academic credibility (and thus gain credibility with future employers) • have pride in your work: it's all yours • apply for jobs with confidence, knowing that you won't be discovered as incompetent in basic information-handling skills. 	<p>Life on Campus movie</p> <p>Watch the individual chapters of the Life on Campus movie and in the forum discuss what point each chapter is making.</p> <ul style="list-style-type: none"> • Chapter one • Chapter two • Chapter three • Chapter four • Chapter five
<p>'Learning how to make proper and responsible use of other people's work ... is the heart of academic life.'</p> <p>Fyfe H. (2000) <i>Avoiding plagiarism: advice for students</i>. Leeds, School of Theology and Religious Studies, University of Leeds.</p>	

- 1 Learning styles
- 2 Understanding the Question
- 3 Organising your Time
- 4 Gathering Information
- 5 Finding Information
- 6 Evaluating Information
- 7 Managing Information
- 9 Harvard referencing
- 10 Numerical referencing
- 11 Communicating Information
- 12 Current Awareness

Student level (please specify year if UG)

Course aimed at first year UG but the programme stays with the student for the length of their course to provide access 24/7 at a point of need. The course can also be used in a scaffolding approach during 2nd and 3rd years.

Assessment method

There were 3 assessments during the course concluding with a research project. The Teaching Toolkit contain the assessments and the marking criteria:

Example Assessment 1

You are required to use a range of information sources to locate material on a subject area of your choice. (You can relate this to coursework in a module for your main subject of study if you wish.) The subject area must be agreed with a tutor and a research proposal form must be completed.

Throughout the research process, keep a record of the methods used, any problems encountered and possible alternative options. Remember to note down the reasons why you have chosen particular options. This will contribute towards other assessments for this module.

Communicate the findings of your research using Microsoft PowerPoint and use at least two different software packages to produce the final item (inclusive of PowerPoint). (Note: if using research from another module this should not be a copy of an essay or other assessed item – just a summary of your findings is required). State why you have chosen communication and presentation tools in the notes section of your PowerPoint presentation.

What to hand in:

1. A printed copy of your PowerPoint slides
2. A CD with the presentation of your research results (Minimum of 10 slides, maximum of 15 slides, with

notes).

3. Research Proposal.

N.B. Do not forget to include a completed item report form.

Assessment Criteria:

- The clarity and appropriateness of the research findings.
- The effective use of the software packages.
- Evidence of a wide range of communication tools is fully justified.
- Demonstrate ethical use of a wide range of research sources

Relevant strand of Cambridge Curriculum (please see curriculum document)

All

Relevant SCONUL 7 Pillar / ACRL IL Standard or equivalent

The programme is relevant to all the Sconul 7 pillars.

Any further details (please include any relevant URLs)

Graduate skills for the 21st century require learners to be confident, decision makers with responsibility for their own learning, independent learners who are problem solvers and critical thinkers.¹ Within the range of competencies required to 'create' the graduate of the 21st Century is Information literacy. A key aspect of these skills is information and digital literacy. Glasgow Caledonian University (GCU) is now adapting SMILE to link into the GCU graduate skills and creating new content where required. In addition, we are also creating a section on 'what it means to be a university student.

¹Future fit Preparing graduates for the world of work. London, CBI. 2009

Good Practice Case Study 2: Faculty of Education, Cambridge University

Your name Angela Cutts
Institution Faculty of Education, University of Cambridge
Title of example Supporting Early Years & Primary PGCE students in finding information for their assignments
Description and further information <p>Over the last 2 years we have run sessions for the EYP PGCE students to help them search for and evaluate information for their first major assignment (focused on assessment in English, Maths or Science).</p> <p>We have developed and refined the method each year and liaised closely with academic staff to ensure the timing is right. The sessions are part of the course structure and so are compulsory – at least one member of the teaching team is present at each session.</p> <p>Last year we started the session by establishing any information sources they have used before and are familiar with/remember – this was mostly just Google and sometimes Google Scholar (despite them all having achieved very good degrees, and a small minority having studied Education at the Faculty!)</p> <p>We explained the advantages and disadvantages of the Google products and then discussed other sources, starting with simple to use online journal providers such as Informaworld, and moving on to databases like EducationLine, BREI and Scopus – giving them the pros and cons of each, and using the title of their assignment as the basis of searching. We emphasised that the principles of searching are the same whatever database is used, and tried to encourage the use of thesauri wherever they existed. The follow-up practical sessions focussed on the individual needs of each student and could be enhanced with a further one-to-one session in the Library if required.</p> <p>The resources discussed at the sessions are all made available on the EYP PGCE Library CamTools site, and supported by help guides and further information, together with the presentation given.</p>
Format of session (seminar, hands-on practical, online resource etc.) <p>There are 170+ students on this course so the initial session described above is delivered in a lecture room with 50-70 students attending each time. We used a combination of Powerpoint slides and online searching to illustrate our points and demonstrate searches (x3)</p> <p>The follow up practical sessions were in the computer rooms with 20-30 students in each session with up to 4 members of library staff helping (x7)</p> <p>The one-to-one sessions are conducted in the Library and focus on individual needs.</p>
Learning outcomes <p>The students should be able to assess the online sources most appropriate to use to search for material for their assignment and carry out searches effectively. They should then be able to identify how to locate material, either electronically or in print. However, we realise that what they learn is probably only retained for the duration of the course as when some of them come back to do the second year of the Masters course they seem to have forgotten how to search for information. This may be because the PGCE is a very intensive course during which they are learning to teach as well as to study, and they only retain peripheral information for as long as they need to use it. Or it may be because the sessions are not very effective long term.</p>
Activities and opportunities for reflection <p>None specifically built into the sessions, but the time in between the theoretical and practical sessions (about a week) may enable them to assess what they have learnt, if anything!</p>
Student level (please specify year if UG)

Postgraduate students

Assessment method

No specific method of assessment by the Library Team; comments from student rep meetings revealed that many of the students found the practical sessions particularly helpful. The course overall is closely monitored and evaluated – it was rated as outstanding by OFSTED in January 2011 with no recommendations for improvement. Previously, in 2008, the external examiners had criticised the students work for not including enough references to academic journal articles after the course had moved to Masters level, and this was when we took our opportunity to offer to run online searching sessions. The external examiners report for 2009-10 noted an improvement in the range of reading, and this was echoed in this year's report too (2010-11) - Jane Warwick (the course manager) has said she will send this to me. At the Teaching Team meeting of 29th June, Jane emphasised the significant impact that the tailored library service provided to EYP PGCE students had across the course.

Relevant strand of New Curriculum (please see curriculum document)

This is difficult as I think it cuts across a number of strands:
Strand 2 - Scaffolded support keyed to the task; Taking responsibility for your learning
Strand 4 - Evaluating sources - quality and trust; Evaluating sources – critically appraising and appropriateness for your specific purpose
Strand 9 - Assimilating information

We'd hope that the consequences of their experience during the course would lead to some aspects of:
Strand 10 - Finding and using information in the workplace, Effective use of information in decision making

Relevant SCONUL 7 Pillar / ACRL IL Standard or equivalent

Identify, Scope, Gather & Evaluate!

Any further details (please include any relevant URLs)