UNIVERSITY OF LONDON

CENTRE FOR DISTANCE EDUCATION
Research and innovation in flexible and distance teaching and learning

Preparing Distance Learning Students for Studying, Working and Living in the World:

The Development of Information Capabilities

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Final Report

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Contents

1 Conclusions and Summary

Conclusions

1. The capabilities of dealing with information, in all its many forms, are essential for life, work and higher study. They are an important part of the practice of any discipline or profession.
2. These information capabilities; including, vitally, taking a critical approach; are becoming more and more important and demanding, as sources increase in number and as information both is produced and becomes obsolete at an increasing rate.
3. Information capabilities may deserve greater attention than they sometimes currently receive in distance learning courses, particularly at undergraduate level.
4. Programme leaders will welcome support on including greater attention to information capabilities in courses.
5. Distance learning courses face a dilemma. They want to make essential academic and professional information readily available to students, not all of whom have reliable and fast access to libraries and other online sources. But, in making such information readily available, courses do not help students to develop high-level information capabilities.
6. Subject specialists, learning technologists and learning designers, and library and information specialists can work productively together to integrate the development of discipline-specific information capabilities into the design and operation of courses. This inclusion enables students to study their discipline more effectively.
7. Some element of independent study, at assignment or module level, is a powerful tool for developing information capabilities and other necessary graduate capabilities.
8. Policy can usefully aid the integration of information capabilities into programmes.

Summary

Necessary academic and technical capabilities in finding, using and referencing information are suggested, in Sections 2.4, 3.3 and elsewhere. These, in summary, are the capabilities to define and specify the information required; identify and source the information; obtain / access the information; manage information; use the information for the intended purposes; and cite and reference the information correctly.

An emergent account of a wider necessary set of information capabilities, here called Critical Information Fluency, is provided in Sections 3.3 and 3.8. This adds the need for a critical approach, and suggests that values, including accuracy and ethical practice, are also required.

Sections 3.6 and 4.6 briefly refer to the disciplinary dimensions of information capabilities, although this was not a main focus of this work. As with many academic capabilities, information capabilities have both subject-specific and generic dimensions.

The information context is considered in Sections 2.4, 3.4 and 4.7. 'Information context' – 'information spectrum' might have been more useful term – means the ways in which information is made available to students on a particular course. At one extreme, information may be provided, on paper or electronically, "in the box". A little further along the information spectrum, students are provided with links to particular sources. Further along still, students are provided with references, and are required to find the sources for themselves, usually through the University of London Worldwide library. At the far end of the information spectrum, students have to identify, search for and use appropriate sources. The particular location of the course, in this information context or information spectrum, thus has a massive effect on the information capabilities that students need to succeed on the course.

An important associated dilemma, considered in Section 4.7, is that, the more helpful we are in providing students with immediate access to specified information, the less helpful we are in helping them to develop information capabilities.

Approaches to course design and pedagogy to develop student information capabilities in the discipline are explored in Section 4. The advantages are suggested of a cooperative, subject-focussed approach, in which subject, learning design and information specialists work together to design a programme that will enhance student's information capabilities within the discipline. A progressive, spiral approach, requiring and developing repeated small increases in information capability, is suggested. These approaches may be more effective than teaching information capabilities in a one-off and separate module.

Section 5 identifies a range of issues and opportunities in the development of information capabilities. These include the problem of access to information by some distance learning students; a suggested distinction between basic and advanced information capabilities, and distinct approaches to implementing these in courses; the shifting nature of information capabilities as technology changes; the implications of quality standards for the information capabilities graduates; roles for libraries in information capabilities; more on integrating information capabilities into course design and operation; some issues in policy and strategy; very brief considerations, of the meanings of 'information' and of dealing with grey literature. Finally; given both the rapid increase in the amount of information and the growing rate at which information becomes obsolete; it is suggested that we need to help our students both to 'sip from the waterfall without drowning', and to take a critical approach to their current knowledge as well as to the new knowledge that they encounter.

Section 5 introduces further work currently under way, including production of a guide on practice.

Appendix 1 is the brief for the current project.

Appendix 2 shows a range of accounts of information literacy.

Appendix 3 describes interviews with University of London programme leaders on information capabilities on distance learning courses. In summary:

- Programme leaders mainly understand the core characteristics of information literacy.
- Programme leaders agree that information literacy is essential for our students.
- Programme leaders agree that more could and should be done, including incorporating information literacy into programme learning outcomes, assessing IL, and measuring the effectiveness of existing information literacy initiatives.
- There are inconsistencies on information literacy across programmes ,with respect to learning outcomes, learning activities, assessment, and consideration of transferable skills.
- Information literacy (both basic and advanced) is not always made explicit in programmes.
- Support for improving / developing information literacy may come too late in programmes.
- Support for improving / developing information literacy might, alas, be seen an ancillary or extracurricular activity, rather than as core.

Appendix 4 provides case studies from University of London distance learning courses on developing information capabilities.

Appendix 5 considers policy for information literacy, and offers a University of London case study.

Appendix 6 considers the use of reference management software as a tool for managing information

Appendix 7 briefly explores a much wider range of academic literacies in higher education.

2 Introduction

2.1 Terminologies

A range of terminologies is in use. The most common term is "information literacy". Inevitably, there is considerable discussion about what this term means. Indeed it can have a wide range of legitimate meanings in different settings – some accounts are provided in Appendix 2.

In this report we talk about 'information capabilities', or 'information literacies'. We use these as overarching terms, embracing both basic and advanced information skills; information literacy (IL), as well as what we call Critical Information Fluency. Our purpose is not to introduce yet more terminology. Our purpose rather is to provide a framework, to suggest the main issues which any particular local account of information capabilities should consider.

2.2 Scope

The project was concerned with information literacy in University of London Worldwide (UoLW) distance learning programmes. Over 100 programmes are studied by some 50,000 students across 180 countries.

However, the work and the report are written for a wider audience, because they have implications much more broadly, in two directions:

1. They are likely to be relevant to distance learning programmes offered by other universities.
2. As the difference between distance and face-to-face learning blurs – primarily through the increasing use of virtual learning environments (VLEs)[1] – some of the issues identified here may also be relevant in face-to-face education.

2.3 What are essential information capabilities?

The actual information capabilities that students need in order to succeed in their studies are highly dependent on the information environment – that is, on the ways in which the course variously makes information available to students or requires students to specify, locate, obtain and reference information for themselves.

If all the necessary information, and references to it, are provided to the students directly; literally or electronically "in the box"; then the only information capabilities that students need are the abilities to use the information provided, in assignments and in preparation for examination. These are of course vital information capabilities. Indeed they may be seen as core elements of studying any subject. But, with everything in the box, all the other information capabilities we consider here may fall away.

Under these conditions, the issues around information capabilities change. The problem is not that the students are failing to develop the information capabilities that they need in order to succeed on the course. Rather, the problem may be that courses are not making sufficient demands on the information capabilities of the students. By the same argument, courses may not be helping students to develop the information capabilities they need; for further study, for work, indeed for living in the world. We return to this issue in Section 4.

What would make it necessary for students to develop high-level information capabilities? The strongest and most direct driver would be some independent study. This could take the form of individual or small group assignments, or project or dissertation modules. Perhaps in part for reasons of perceived cost and complexity, the amount of independent study in distance learning

[1] The term VLE becomes increasingly problematic. The learning is, hopefully, real rather than virtual. We may feel that the online environment is every bit as real – providing access to learning resources, access to learning activities, contact with fellow learners and teachers through synchronous and asynchronous text, voice and sometimes face. We should perhaps consider dropping the 'V', and rather work with, enhance and celebrate the rich variety of Learning Environments available now and into the future.

programmes, certainly undergraduate level, is often low. There is much more independent study in postgraduate programmes.

2.4 Background, sponsorship and work

The work reported here was undertaken as a University of London Centre for Distance Education project "Integrating Information Literacy", aiming successfully to integrate information literacy skills into a wide range of international, including undergraduate, University of London programmes. See Appendix 1 for an outline of the project.

Sponsors: Dr Mary Stiasny, PVC (International) and Dr Sandra Tury, AD, UoLW Library Services.

Project staff: CDE Fellows Dr David Baume and Dr Benedetta Cappellini.

Literature on information literacy has been studied. Surveys and interviews have been undertaken with providers of information Services, and with UoLW Course Leaders by Benedetta Cappellini, previously of Royal Holloway University of London, now at the Durham University.

UoLW Course Leaders have been supported on course design, by the project and by UoL Worldwide Library Services.

2.5 The report

This report has been assembled and edited from working papers produced at various stages of the project. Some ideas appear more than once, and in evolving forms. This evolution will continue into the follow-on project, described in Section 6.

Papers and article on this work are in preparation.

2.6 Acknowledgements

We are very grateful to our project sponsors, Dr Mary Stiasny, PVC (International) and Dr Sandra Tury, AD, UoLW Library Services, and to CDE Director Dr Linda Amrane-Cooper, for their sustained support, commitment and encouragement; University of London Worldwide programme leaders for their engagement in the project; and CDE Fellows for generous feedback.

Also to participants in workshops about the work; with Sandra Tury, at Supporting Student Success October 2018 and Research Into Distance Education (RIDE), March 2019, both run by the Centre for Distance Education at the University of London; the European Distance Education Network, June 2019, in Bruges; and Jane Secker (City University of London) and Katy Woolfenden (University of Manchester), at LILAC, April 2019, in Nottingham.

2.7 Support on developing information capabilities at University of London Worldwide

During the project, support has been provided to programmes on the implementation of information literacy through work on learning outcomes, learning activities and assessment.

Support on implementation is available from UoLW Library – Sandra.Tury@london.ac.uk – and from the UoL Centre for Distance Education – cde@london.ac.uk and David Baume – david@davidbaume.com.

3 Information capabilities essential for studying, working and living in the world

3.1 Our starting points

We start from the Chartered Institute of Library and Information Professionals account of information literacy (CILIP, 2004):

> Knowing when[2] and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner.

We also note CILIP's later account (Secker, 2018):

> Information literacy is the ability to think critically and make balanced judgements about any information we find and use. It empowers us as citizens to reach and express informed views and to engage fully with society.

These; or perhaps a more active form, that describes doing rather than just knowing or thinking; are essential academic, disciplinary, professional and also personal capabilities. These capabilities, sometimes called literacies, take somewhat different forms in different disciplines and professions, as well as having features in common.

These information capabilities link and overlap with, for example, other capabilities and attributes including digital, employability, communication, numeracy, study / learning. Other literacies are considered briefly in Appendix 7, and by Baume (2019)

3.2 Four big questions about information capabilities

What particular capabilities in critically identifying, sourcing, obtaining, managing, using and citing / referencing Information do graduates of distance learning programmes:

- Have when they graduate?
- Need for what they will do next and beyond?

This report suggests that there is often a large gap between the answers to these two questions. That being so:

- How do / could / should we help them develop these information capabilities?
- How do / could / should we assess their information capabilities?

3.3 Information Capabilities

Starting from, and building a little on, CILIP's accounts above; and adding in what we consider to be the important skill of information management; six main, although of course overlapping, elements of information capability can be identified. These are the abilities critically to:

1. Define and specify the information required – "I need information about …"
2. Identify and source the information required – "I can find this information here …"
3. Obtain / access the information – "I have the information in front of me."
4. Manage information – "I can readily access my information and references."
5. Use the information for the intended purposes – "These sources … provide me with ways to make sense of these observations … in these ways … ."
6. Cite and reference the information – "e.g Citation - (Tury, Robinson and Bawden; Reference - 2015),;Tury, S., Robinson, L. and Bawden, D. (2015). The Information Seeking Behaviour of Distance Learners: A Case Study of the University of London International Programmes. *The Journal of Academic Librarianship*, 41(3), pp.312-321.)"

Also, to exercise critical judgement, and to justify information decisions, at each stage.

[2] 'When' may be less important than it was in 2004, given current methods for locating information.

We refer to this cluster of information capabilities as Critical Information Fluency. Not because we are keen to create yet another term, but rather because we are trying to avoid matters of definition, in particular of what is and is not information literacy.

It is less important to achieve an agreed overall definition, whether of information capabilities, information literacy or critical information fluency. It is more important to be able to specify the particular information capabilities required in particular educational setting – university, programme, discipline, academic level, learning and teaching environment, etc. We seek to offer a framework within which locally appropriate accounts can be devised and used.

Analysing this list a little, item by item:

1. Defining the information required can be anywhere from a basic to a high-level academic and professional skill.
2. Searching for, identifying and sourcing the information required is perhaps a more technical activity, though still requiring some judgement and expertise, or access to expertise.
3. Obtaining or accessing the information is substantially a technical skill, depending heavily on the particular library and database systems to be accessed.
4. Managing information is also substantially a technical skill, although it also requires academic / professional judgement, particularly in relation to tagging/labelling of items and devising appropriate categories for this.
5. Using the information is at the heart of the practice of the discipline or profession.
6. Citing and referencing the information is again substantially a technical skill, although difficult cases require some judgement.

Being critical, and justifying information decisions at each stage, are perhaps meta-abilities. They are necessary elements of high-level information capabilities. They are also necessary for the continuing development of information capabilities.

But even this account of information capabilities is incomplete:

- It still offers a linear account. It does not capture the dynamic, iterative nature of real information searches, for example the process of successively refining search terms when too many, or too few, or inappropriate, results are returned.
- Nor does it include the full range of types of search, from “I know exactly what I’m looking for” through to, perhaps, “I wonder if there’s anything out there that may help me with this?” or even “I have this vague memory…”.
- Also important, but harder to define, may be a more diffuse ability and predisposition. This is, perhaps, to scan as well as to search, without a particular goal or need in mind. An intention to see what is out there that might; perhaps in unexpected ways; be interesting or even useful, now or later. We may feel that this also an important element of critical information fluency. At least peering over the edge of our silo, outside the box.

Work on a fuller framework account of necessary information capabilities continues.

3.4 Information capabilities in context

Students may study quite successfully without being able to do items 1, 2, 3, possibly 4, and also 6.

How?

When the course provides direct access, and references, to all of the necessary information and sources.

Context – specifically, the design, operation and assessment of the course – determines which information capabilities are currently essential for student success. We return to this in section 3.

3.5 Values and Principles

Values and principles should inform information capabilities. These include fairness, legality, ethicality, accuracy and efficiency; more broadly, good academic and professional practice. Disciplines and professions may have their own associated values and principles.

3.6 Discipline- and task-specificity

The information capabilities should be undertaken in ways that are appropriate to the discipline or profession being studied, and to the particular task being undertaken.

3.7 From Information Literacy to Critical Information Fluency

The idea of literacies in higher education can bring a difficulty. "Literacy" can sound a little low-level, for higher education. It may often be considered as just a set of technical skills, however important.

We hope that our evolving account of Critical Information Fluency better represents the necessary information capabilities and actions for students and staff, in HE and in the world beyond.

'Critical' has long been essential in the way we approach information and sources. At a minimum, students need to consider the Word Wide Web as a portal rather than as a source. Beyond that, students need both to use, and then later to develop and extend, criteria for judging the credibility of sources. They must adopt critical stances to the work that they find, read, and then produce.

'Fluency' is intended to suggest a certain grace, ease, flexibility; a product of repeated thoughtful practice.

Critical Information Fluency is more than a set of capabilities. It is more than something that we <u>can</u> do. It is something that we just, as a normal, embedded, and always reflective, part of our practice, <u>do</u>. It is part of our academic, professional, academic practice. Indeed perhaps part of our identity. It is something that; deliberately using a double negative; we cannot not do.

4 Course design and pedagogy: approaches to developing information capabilities

Three main structural approaches to the teaching, learning and assessment of information literacy can be identified; separate, included or co-operative.

4.1 In a separate IL module, course or class:

Advantage – The module designers, teachers and assessors will be experts in their particular literacies.

Disadvantages – Students may take these literacies less seriously than they take their main discipline of study.

These literacies may remain somewhat separate from course design, teaching and assessment of the main discipline of study.

4.2 Included in the course, and taught and assessed by subject specialists:

Advantage – These literacies will be planned, taught and assessed as part of the students' main discipline of study, rather than as an adjunct, and so will be seen by students as core.

Disadvantage – Those teaching these literacies may not be completely up-to-date with recent developments in these literacies and the teaching of them.

4.3 Co-operative:

Advantages – Subject specialists and literacies experts can collaborate in the design of courses, and in teaching and assessing discipline-appropriate accounts of the literacies, integrated in the disciplinary courses. The academic and disciplinary credibility of literacies is thus enhanced; they are treated as part of disciplinary practice, and all relevant expertise is applied.

Within these three structural approaches, three main broad pedagogic approaches can be identified; linear, spiral or subject-focussed.

4.4 Linear

A linear approach to learning typically starts with technical skills – perhaps, from the list under Abilities in Section 2 above:

- Item 2 – Identifying and sourcing the information required (if this is indeed required – it often isn't, as described in 2.4 above);
- Item 3 – Obtaining / accessing the information; and
- Item 6 - Referencing the information.

Perhaps, once the student had some information to manage, also:

- Item 4 – Managing their information.

During a programme of study, perhaps in later years, where some degree of independent research is required:

- Item 1 – Defining and specify the information required

may be introduced, after the core technical skills of obtaining / accessing information, managing it, and proper referencing have been embedded into practice.

- Item 5 – Using the information – is not considered further here, as we consider it to be a fundamental part of the practice of the discipline being studied.

4.5 Spiral

A spiral approach (Bruner, 2003), by contrast, has students undertaking each of these six steps, with steadily increasing complexity, through the programme of study. An advantage of the spiral approach is that students can, from the start of their studies, locate the technical information capabilities they are developing in the broader context of essential academic and professional skills. They can see why information literacy matters, beyond finding the information specified for particular assignments and avoiding plagiarism.

Combinations of linear and spiral approaches are of course possible.

4.6 Subject-focussed

What we here call a subject-focussed approach begins by ignoring information capabilities completely. It follows the standard processes of good course design – specifying learning outcomes, and then developing a sequence of learning activities with associated inputs. Once the learning activities have been drafted, then the information capabilities that each learning activity requires or develops can be made explicit.

"Can be" is important here. Seemingly small changes to a learning activity, or to the conditions under which it is undertaken – most obviously, what information is provided, linked, suggested or referred to – have major impacts on the information capabilities required and developed by the task, alongside the subject dimensions of the task.

Making these information capabilities explicit, and then checking that they form an appropriate developmental sequence – whether linear, spiral or some other, as above – will ensure that students are developing information capabilities alongside, and closely integrated with, the capabilities in the discipline or profession that they are studying. Section 3.8 below on progression says more about this

4.7 A dilemma about developing information capabilities

We want to help and guide our students, in particular in their first year of study, to access the particular resources that we have selected for them to enable them to produce good answers to the assignments that we set for them. To be helpful, we typically give them ready access; including references, hyperlinks, PDFs or printed copies; to some, most or even all of the required reading, indeed also sometimes to the optional reading.

This is particularly understandable in distance education, especially global distance education, where we cannot make the same assumptions about ready access to a physical, or even an online, library as we can with institution-based students.

So we want to develop their technical skills in information literacy – obtaining, and referencing. We often want them to study, so to speak, inside a box of our own devising.

This is understandable. The University of London online library offers access to (currently) approaching 100 million items. It would be unreasonable to say to students, in week one, "Here's the assignment, go forth and find, select and use appropriate sources."

However, for example, to gain a 2(i), QAA (n.d.) says that "The student has conducted thorough background investigation, analysis, research, enquiry and/or study using established techniques accurately, and possesses a well-developed ability to critically appraise a wide range of sources." This surely requires the student to undertake some work outside the box.

The dilemma is that, by pointing students at the resources they need, we fail to help them to develop the wider information capabilities they will need.

The core resolution of this dilemma may be to treat the move from working wholly in the box to basic and then more advanced information capabilities explicitly as a developmental process, to be undertaken throughout the programme of study. This will require coordination, across modules and across years of study. Elements of this approach might include:

1. From an early stage, requiring students to use an increasing number of sources which were not on the reading list. To avoid inappropriate cooperation, students could be required to locate and log on the VLE a source which they intended to use, one that had not previously been logged by another student.
2. Including, as assignments, the requirement to make critical reviews of sources, to help students to develop the essential capability of being their own referee, articulating and justifying their judgements on published sources.
3. Asking students to generate their own criteria for good sources.
4. Giving marks for information capabilities in the subject.

One overall approach might be to produce general accounts of information literacy and critical information fluency to be attained at the end of first, second and third years of study and then for the award of a Master's degree. This would ease course design and coordination.

4.8 Progression – repeated small steps

Whether a separate, included or integrated structural approach; whether a linear or spiral model is adopted; and further addressing the dilemma described above; each successive assignment can develop and require a small advance in information capabilities. For example:

- Find an additional unspecified source,
- Find an ill-defined source,
- Find some information without a source being given,
- Take a more critical approach,
- Compare and contrast what 2 or 3 or more different sources say,
- Specify the kind of information being sought,
- Rate different sources,
- Develop and use criteria for rating different sources,
- Reference using a different style

Using this model of slow steady progression, of increasing sophistication, throughout the programme, a relatively high level of Information Literacy, indeed Critical Information Fluency, can be attained by the end of the programme, without any individual step being too demanding.

This is a staircase rather than an escalator. The student has to do the work, to climb; with support and guidance at each step. But this continued high-frequency low-intensity attention to the enhancement of Information Literacy and Critical Information Fluency, just as to the enhancement of other academic and professional capabilities and expertise, will encourage and support steady progress.

5 Implementing and integrating information literacy in worldwide distance learning programmes – some issues and opportunities

> *Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations,*
>
> *UNESCO, 2005 – The Alexandra Proclamation*
>
> *Author's note – Information Literacy may be a basic human obligation, as well as a basic human right.*

5.1 Access to Information

Most students on face-to-face courses or distance learning courses in the global North have almost constant and high-bandwidth access; to information and library sources, to course resources, to fellow students, and to the wider Internet. This is not the case for all students in the global South. Most have some access, although it may be intermittent and slow. Some online access may be a requirement of admission to the course, as may be access to some form of IT. This access grows by the year. But there is likely to be an access gap for several years to come.

So providers of worldwide distance learning programmes must provide as many as possible of the necessary resources and materials; ideally all. They should do this, either literally inside the box, or through the provision of PDFs, access to online editions of books, and links to Library and selected databases. Materials may be shipped on a USB stick or in print.

Such provision ensures that students on worldwide distance learning programmes all have access to the essential course materials and readings. But the access gap can make it harder to develop students' information capabilities even up to, let alone beyond, the basics suggested here. Similarly their capability to undertake online activities, and to interact online over any reasonable timescale, cannot be assumed. Educational and technical ingenuity can overcome these difficulties, if the will is there.

5.2 Levels of Information capability

It may be useful to distinguish between two main levels of information capability:

- Basic, which involves accessing, using and referencing various sources, e.g. library databases, print sources and freely available internet sources; and
- Advanced, which additionally involves, as a normal part of academic and professional practice, identifying and locating appropriate information sources in the most efficient manner. This includes, but is not limited to, selecting and using keywords or search terms; critically evaluating the sources for authority, currency and relevance to the task at hand; managing information; and justifying decisions about information.
  Both basic and advanced information capabilities also involve using and processing information in scholarly and professional ways, and communicating information to the intended audiences, including proper referencing.

  The abilities are for the most part generic across disciplines, although disciplines may also have particular sources and resources which students need to be able to access and reference correctly.

  The basic abilities may be mainly technical, but they are not trivial. Students need support to become, not just confident, but skilled and fluent in them. And even basic and technical skills involve levels of judgement.

5.3 Necessary information capabilities

Basic Information Literacy, as currently often defined and practised, is arguably inadequate to meet the needs of our graduates even when they graduate, let alone for 50 or 70 or more years of work and life. In this respect we may be severely under-ambitious for our graduates.

It would be difficult to overestimate the academic, professional and personal importance of high-level information capabilities. Some reasons:

- The amount of information in the world may currently be doubling every two or so years, acknowledging the serious difficulties of both defining and measuring 'information'.
- This information is of widely varying quality, which strengthens further the need to be a critical and selective user of information. We all need to be, to some extent at least, our own referees, of sources and of information.
- Growing proportions of what the student knows when they graduate become variously wrong and irrelevant each year after graduation. So students need to be critical of what they already know, as well as of new information and ideas.
- There is growing specialisation in much academic and professional practice.
- There is also a growing need for inter-disciplinary and inter-professional working, which requires students to develop some familiarity with a range of disciplines and professions beyond their own.

The boundary been between basic and advanced information skills is somewhat blurry, contestable. This does not reduce the value of the distinction. It just makes us less dogmatic about what is, and what should be, variously treated as basic and advanced.

The gap between students' needs for information capability and the information capabilities that we currently teach them is particularly evident at undergraduate level. This typically concentrates on what we have called basic information literacy – colloquially, studying within the box, sometimes literally studying the contents of a box. Programmes may not consistently or systematically teach or assess even Basic IL. Broken links and other difficulties accessing information may be contributing to student non-completion or failure students when cannot find information from references as well from links.

We see more advanced work on information literacy / critical information fluency in project and dissertation modules. More advanced information capabilities are required in some postgraduate programmes, where explicit attention to information capabilities is leading to greater student achievement, especially in dissertations. Examples are provided in Appendix 4.

The issue of project and dissertation modules at undergraduate as well as postgraduate level merits attention. Graduates surely need to be capable independent learners as well as having current disciplinary knowledge.

Students currently make limited use of the UoLW library. Work is underway to increase library use.

5.4 Implementing Basic Information Literacy

We suggest that undergraduate students should be required to develop, and to demonstrate through assessment, basic information literacy during their first semester of study. So should any postgraduate students who have not already achieved it. All students should continue to practise and develop information literacy throughout their studies.

The set of abilities we are here calling basic information literacy may be included as a separate learning outcome, or may be considered to be an assessment criterion for any student work that refers to published material.

For students to practise these basic abilities, they will need to be able to use Library information systems and a range of academic databases and sources as required by their discipline. There is perhaps no need to assess separately the skills to use such systems. These skills are essential

components of item 1 described above. Also, systems and required skills change, for example with the new University of London OpenAthens-LDAP system.

Library and online resources are available to support the development of basic information literacy. However sophisticated our information capabilities may become, as explored below, this basic information literacy remains essential.

An example of how a University of London Worldwide programme develops basic information literacy is provided in Appendix 4.

5.5 Implementing critical information fluency

Some issues in implementing critical information fluency:

- Students will not suddenly become critically information fluent. We should provide a staircase for them to climb, steps marked by new skills and by enhanced levels of each skill.
- Critical information fluency includes identifiable, discrete abilities. This simplifies the design of progression – each ability can sometimes be worked on separately, and not in any necessary sequence.

Where students are all studying the same content, using the same sources and undertaking the same assignments, basic information literacy is probably enough; although even here we might encourage them to use a wider range of sources, or even to find one or two sources themselves.

However, and acknowledging possible complexity and cost, there are strong educational arguments for greater individualisation of study, if possible starting on a small scale in the first year and steadily increasing through the degree:

- Encouraging students to follow their own interests and enthusiasms, within the course syllabus and learning outcomes, can use and increase students' motivation and engagement.
- Even a modest differentiation of student focus and student assignments can increase the quantity and value of student collaboration and peer learning.
- The scope for student-student plagiarism can be reduced.
- Project and dissertation modules are typically a feature of later years of a degree, although they are less present in distance learning programmes. Such modules are powerful and effective vehicles for the development of critical information fluency as an essential element of independent studies.
- Hopefully such independent studies are a feature of postgraduate programmes, particularly when these are taken by students who are already in employment and who bring both considerable expertise and particular interests and questions to their studies.

We might, in programme and module documents, say something like:

> Students will be supported, encouraged, and assessed on their ability to go beyond studying the core readings provided, and, critically, to:
>
> 1. Identify what information they need in order to complete a particular piece of work;
> 2. Identify why it is needed;
> 3. Locate and obtain it efficiently[3];
> 4. Evaluate it rigorously according to explicit and appropriate criteria;
> 5. Manage it;
> 6. Use / process it for their intended academic / professional purpose(s), and
> 7. Communicate it to intended audience(s) clearly, accurately, appropriately and ethically.

[3] Perhaps these should be two separate points. Locating it– establishing where it is – and obtaining it – making it available to read and use – may be separate abilities, although clearly closely linked.

Also, to justify their decisions and actions about information at each stage.

They should do all this, in increasingly sophisticated ways, at increasing academic levels, and in ways appropriate to their particular field of study.

They should do this in relation to their particular interest / assignment / project / dissertation.

Criteria and methods for doing each of these things will be explored as part of the course and with support from subject specialist information professionals.

Feedback can be given on students' work in respect of critical information fluency.

These abilities can be assessed.

5.6 Benchmarks, standards and quality

The QAA expects honours graduates to be able "to manage their own learning, and to make use of scholarly reviews and primary sources (for example, refereed research articles and/or original materials appropriate to the discipline)" (QAA, 2019).

This requirement probably goes beyond basic information literacy.

Individual QAA subject benchmark statements refer in some cases to required information capabilities, to a limited extent at undergraduate level and much more substantially at postgraduate level. As an example of the latter, for Masters degrees in Business and Management (QAA, 2015): "Using information and knowledge effectively in order to abstract meaning from information and to share knowledge..." They are strongly implicit at undergraduate level: "An appreciation of the uncertainty, ambiguity and limits of knowledge" and "The ability to manage their own learning, and to make use of scholarly reviews and primary sources (for example, refereed research articles and/or original materials appropriate to the discipline)."

Reflecting this expectation, quality assurance in relation to information capabilities would be likely to ask questions including:

- Is there a policy on the development and assessment of students' information capabilities?
- If so, is it being enacted?
- If so, is it being effective in developing students' information capabilities?

5.7 Responsibility for implementing basic information literacy / critical information fluency

The teaching, learning and assessment of basic information literacy / critical information fluency all need to be designed into courses, and included in learning outcomes or assessment criteria.

Students would probably welcome guidance and examples on how these abilities are interpreted and implemented in particular disciplines and programmes.

The teaching and learning of these abilities may best be achieved through cooperation between subject specialist academics and subject specialist information professionals.

An example of how a UoLW programme develops some more advanced information capabilities is provided at Appendix 4.2.

These abilities are fundamental parts of academic and professional practice.

Work on information capabilities will be more effective within a policy framework. Suggestions on policy are made in Appendix 5.

A checklist and toolkit are planned.

5.8 Libraries and information literacy

Libraries have taken an important lead on IL. Their expertise will remain essential for the foreseeable future. However, information literacy / fluency is much bigger than just a library issue, even when we properly consider libraries as services and as curating portals rather than as collections. Information is pretty much everywhere.

5.9 Course Design and information Literacy

There is an intimate connection between the design and operation of courses and the associated requirements for student information literacy. (In each of these cases, indeed in all conceivable cases, critical use and proper referencing of information are also required.)

Three examples:

- If complete PDFs or printed matter are provided, then few or no selection or search skills are needed, other of course than within the material.
- If links are provided, then references should also be provided, in case of broken links; students need the basic ability to locate and obtain sources from references.
- By contrast, if no guidance to sources is provided beyond the assignment itself, then students will need advanced skills of constructing, implementing, reviewing and revising searches.

This may suggest that we should start with the course as designed, and deduce from the course the information capabilities that are required.

However, if the arguments in Section 3, on necessary information capabilities, are accepted, then the picture changes. Courses and assignments also need to be designed to require and develop steadily more advanced information capabilities in students. In general, this shift will enrich the course and the learning.

5.10 Policy, strategy and collaboration on the development of information capabilities

Without institutional policy and strategy that requires information literacy / critical information fluency; perhaps as a graduate attribute; then provision will remain partial, and current local initiatives by enthusiasts are unlikely to come together to achieve the necessary synergies.

Information Literacy is part of institutional policy in many Higher Education Institutions.

Collaboration between academic leaders and information specialists will increase the effectiveness of the development of Information literacy / critical information fluency.

As ever, top-down (policy), bottom-up and middle-out (both achieved through sharing of practice) are required for maximum benefit.

Appendix 5 suggests an approach to policy.

5.11 What do we mean by "information" in our disciplines?

"Information" can take any form from raw data to accounts of sophisticated, complex, high level understanding, theories and models. It can include images and artefacts, as well as text and numbers. And it can doubtless also take many other forms.

Different kinds of information are likely to require different kinds of information capabilities.

5.12 Grey literature

There is much valuable information in the grey literature. And a lot that is less valuable. Essential real-world information capabilities therefore include the ability to judge the quality and the relevance of everything we come across that might be of use.

We each need to be our own referee.

5.13 Sipping from the waterfall

Some 100 million items are in or accessible through the University of London Worldwide Library alone.

The amount of knowledge / information may be doubling every two or so years.

The half-life of (true) (useful) knowledge is reducing, quickly.

A further essential information capability is sipping from the waterfall without drowning.

6 Further work

Integrating Information Literacy, Phase 2

The current project has suggested above all that:

- Information literacy is of great and increasing importance as a graduate capability;
- Practice on information literacy is varied across UoLW;
- Colleagues want help on IL;
- Libraries are willing and able to help,
- A discipline-centred approach is needed; and
- A lack of a policy framework may slow the development of information capabilities.

A further project, starting September 2019, further addresses these issues. The key elements and deliverables are:

1. The development of possible policy frameworks and guidance notes. Policy and recommendations will be tested on the UoL Global MBA programme.
2. A University of London Worldwide Information Literacy Implementation Group (working title). This will have roles both in guiding and disseminating the proposed project and more importantly in ensuring sustainability once the proposed project is complete. It will include library and information professionals; learning technologists; learning developers (who along with library and information professionals and lecturers are in close contact with the difficulties that students experience around information literacy); academic developers (who have a wider role in relation to educational change); and module and programme leaders. The group's further functions will include sharing expertise on the definition and implementation of information literacy; locating, reviewing and where necessary developing resources; and QA, monitoring and reviewing implementation. It will also inform future policy.
3. Reviews of current practice on information literacy. Some IL initiatives, including in the Masters in Global Diplomacy (SOAS, University of London and in Refugee Protection and Forced Migration Studies (University of London School of Advanced Studies) are now sufficiently well-established to make it possible to undertake a thorough review and draw implications for future evidence-based policy and practice.
4. Embedding IL into the new Global MBA Programme.
5. Impact on IL in early-adopter MAs (see 3 above) and the new policy-led MBA implementation will be compared.
6. Accounts of and guidance on implementing discipline-specific information literacy. Information literacy will only come fully to life within programmes when it is conceptualised and implemented in discipline-specific ways.

Appendix 1 – The Centre for Distance Education (CDE) integrating Information Literacies Project

Integrating Information Literacy (IL) skills into University of London Programmes

Project sponsors

Mary Stiasny, PVC (International), University of London

Sandra Tury, Associate Director-Online Library Services, University of London

Project goals

Successfully integrate information literacy (IL) skills into a wide range of University programmes.

In a little more detail, the project aims to provide programme teams with support on IL that is practical, evidence- and practice-based and scholarship-informed. This support should lead to enhancements in students' critical and informed use of a range of appropriate information sources.

Working definition of information Literacy (IL)

"Knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner" (CILIP, 2004)

Project objectives

1. To identify current policy and good practice in the development of information literacy across the curriculum in University of London Programmes.
2. To support the integration of IL skills into curricula at both postgraduate and undergraduate levels, through working with Programme Teams and delivering writing workshop(s) for Programme Teams to facilitate the integration of IL skills.
3. To establish evaluation processes and measures of the effectiveness / impact of IL skills instruction in University of London Programmes.

Timescale

March 2018 – Summer 2019

Issues to explore include:

Accounts of IL; responsibility for IL in course design, teaching, and library and information services; IL demands on students and support for student IL development; teaching institutions and IL; student approaches to IL; professional requirements for IL; relations with Digital Literacy; critical IL.

Outputs

Presentation to and discussions with programme leaders and teams; briefing notes and resources for staff, perhaps also students; CDE events; perhaps input to writing retreats for course teams; reports on CDE website; ODL and IL conferences and publications.

Project staff / contacts

Benedetta Cappellini, Programme Leader, RHUL and CDE Fellow, Benedetta.Cappellini@rhul.ac.uk

David Baume, CDE Fellow, david@davidbaume.com

Appendix 2 – Some accounts of information literacy

Knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner (CILIP, 2004)

Information literacy is the ability to think critically and make balanced judgements about any information we find and use. It empowers us as citizens to reach and express informed views and to engage fully with society (Secker 2018)

- Identify a personal need for information
- Assess current knowledge and identify gaps
- Construct strategies for locating information and data
- Locate and access needed information and data
- Review research process and compare and evaluate information and data
- Organise information professionally and ethically
- Apply the knowledge gained

(Adapted from SCONUL 7 pillars of information literacy)

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

(ALA 2000. Since rescinded but still of value.)

Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.

(Acrl.libguides.com, 2017))

Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations. (Ifla.org, 2005) – The Alexandra Declaration.

Appendix 3 - University of London perspectives on information capabilities

Summary

- Programme leaders mainly understand the core characteristics of IL
- Programme leaders agree that IL is essential for our students
- Programme leaders agree that more could and should be done, including incorporating IL into programme learning outcomes, assessing IL, and measuring the effectiveness of existing IL initiatives
- There are inconsistencies on IL across programmes with respect to learning outcomes, learning activities, assessment, and consideration of transferable skills
- IL (basic and advanced) is not always made explicit in programmes
- Support for improving / developing IL may come too late in programmes
- Support for improving / developing IL might, alas, be seen an ancillary or extracurricular activity, rather than as core

Methodology

Data were collected via semi-structured interviews and questionnaires with 14 Programme Directors, Deputy Programme Directors, Managers and Librarians involved in University of London Distance Learning programmes.

Quotations from respondents are *italicised*.

Findings – key themes

Considering the limited number responses, findings cannot be analysed statistically. Instead we provide a summary of the key themes emerged from interviews and questionnaires. Quotations from respondents are provide in italics.

1. *Defining Information Literacy*

There is a common understanding of Basic Information literacy (BIL), which is mainly understood as:

> *The ability to find and use information from a range of sources. What immediately springs to mind for me is the ability to effectively utilise online sources, whether this be the internet or databases or other platforms.*

If this definition could be more related to basic information literacy in the world outside higher education, there are also more advanced skills –perhaps Advanced Information Literacy (AIL) – related to HE. For example:

> *This means learning the skills associated with finding, using, storing and reporting good quality information from published sources such as journal articles, scientific papers, books and also grey literature such as reports, conference proceedings. This includes knowing how to use databases such as PubMed, to find papers, library tools such as Discover. The storage of this information in a reference management software and knowing how to quote, cite and reference properly and how to avoid plagiarism*
>
> *The emphasis for me here is on the researching element both as a user and for my students. I believe we have recently introduced Blackboard Collaborate Ultra which is a synchronous conferencing platform used for tutorials in many Universities. This can also be recorded for later playback (asynchronous).*

These two accounts show how IL is linked to other practices: archiving skills and specific writing practices including referencing, citing, paraphrasing and avoiding plagiarism. These accounts clearly show how AIL is essential for equipping students with skills and standards which are essential for HE. There is often an understanding that there might be a need to develop further IL skills, but what needs to be developed and how has not been clearly specified.

2. *Promoting Information Literacy*

Initiatives to promote IL (BIL and AIL) are varied across the programmes. IL has been included in the following activities/documents:

- Learning outcomes of the programme
- Library support and input
- Learning outcomes of some modules
- Student assignment
- Assessment criteria
- Library support and input
- Extracurricular activities on the VLE

In some programmes basic and advanced information literacy are included in some modules (for example Research methods) or final dissertations.

> *Project students must take part in the Intermediate Library information skills module (which includes group work, and librarian feedback) . Information literacy is vital to our students, and underpins the work they need to do for all assessed assignments and the project*

In others IL seems to be well-embedded across the curriculum: from LOs of the programme to assignments, as well as extracurricular activities on the VLE (usually optional). There are also *ad hoc* initiatives such as revisiting or introducing new extra-curricular activities and support for students. These are usually organised together with the UoL library. For example:

> *I am collaborating with Sandra Tury to integrate elements of information literacy into early activities on the core modules of the programme in response to low levels of student satisfaction, competence and competence in using the online library. I will also increase the number of links to valuable resources within UCL.*
>
> *We have information skills training provided by the library in the form of computer assisted learning modules. A foundation one covering basic information about accessing resources from the library*
>
> *https://ble.lshtm.ac.uk/pluginfile.php/163391/mod_resource/content/1/lib_found/index.html We have an intermediate level module for project students specifically around literature searching strategies.*
> *https://ble.lshtm.ac.uk/pluginfile.php/131795/mod_resource/content/1/index.html*
>
> *We also have a School document on academic writing which covers citation and referencing with other resources accessible via this link https://lshtm.sharepoint.com/Teaching-and-Support/Pages/study-skills-links.aspx*
>
> *The IT services department also make training for Endnote and Mendeley available via our LSHTM student communities area of Moodle*
> *https://ble.lshtm.ac.uk/course/view.php?id=1401*

Interestingly, programmes that have been revalidated recently or are under revalidation, are aiming at including IL more systematically.

> *We are in the process of updating all of our modules and module specifications. We are developing a new introductory module, Introduction to the study of divinity, for 2019-20 which will incorporate basic information literacy skills. Level 4 modules will provide direct access to the essential and further readings on the module page, but, at levels 5 and 6, students will be provided with a list of sources which are available via the online library, in addition to scanned chapters. They will have an opportunity to develop more advanced information literacy skills in the dissertation module at level 6.*
>
> *We are in the process of redeveloping the BBA programme and the induction/resource hub will feature specific content to guide students on using databases and navigating specific websites. This is still in the early development stages and will evolve over the next 9 months or so.*

3. Evaluating existing Information Literacy

Although we are not aware of any case in which an evaluation of IL has been conducted, respondents are confident that students somehow 'get it'. This might be simply because students do progress into further levels of study, pass the VLE test or a specific module. However there are also some negative evaluations of students' level of IL.

> *Our students, busy senior professionals, often approach information gathering on a 'need to know' basis. Also older on average, they are more likely to be discouraged by a small number of confusing or negative experiences in using the library*

The evaluation that 'we need to do more to be honest' seems to be common. For example:

> *In response to low levels of student satisfaction and competence in using the online library, I will also increase the number of links to valuable resources within the College."*
>
> *I think the IL course we have is a good start but it needs to be embedded into curricula if we expect students to actually engage with it.*
>
> *We are grateful for the developing provision of the online library which offers much improved study support for our students, but we are also aware that, in some respects, there will be greater challenges and we intend to meet these by means of the appropriate design of our redeveloped study materials.*

4. Supporting further development of Information Literacy

In terms of future support, respondents seem to aim at ad-hoc solutions. Some suggest the there is a need to incorporate IL more organically and are working closely with the library to create ad-hoc support for students. In evaluating these initiatives, it seems that localised responses are activated without broader and coherent guidelines. In some cases, these localised responses go almost in opposite directions. The example below shows two different responses: from channelling IL skills into the curriculum to, perhaps, spoon-feeding students.

> *We have recently incorporated the foundation module into an elective module on the programme, and some optional study group tasks in a core module, to develop IL. The Intermediate module is now compulsory for project students. One other possibility could be to make the foundation module compulsory in the Core... This year we piloted a pre-enrolment course which did flag up the foundation module and recommended students complete it.*

> *Until now, students have been provided with reading lists in subject guides, with a few chapters/articles available online. Redeveloped versions of our modules will focus entirely on sources available online, either through the online library or by providing scanned chapters. This should mean that students will no longer struggle to find key resources, as they so often have in the past. We will, however, provide a supplementary reading list for each module and encourage students to seek additional resources from these, or via JSTOR, and this will demand higher-level information literacy skills.*

Interestingly many programme directors were not aware of the existence of policy/guidelines for IL in their colleges or UoL Worldwide programmes.

> *I'm not sure we have a specific policy, more that it information literacy is flagged up at many stages in both DL, F2F MSc teaching and doctoral teaching. And 2 modules are offered by the library to ALL students*

Lack of consistency across programmes might be due to the lack of a framework/guideline/policy that directors can refer to.

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>
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> *https://ble.lshtm.ac.uk/pluginfile.php/131795/mod_resource/content/1/index.html*
>
> *WE also have a School document on academic writing which covers citation and referencing with other resources accessible via this link https://lshtm.sharepoint.com/Teaching-and-Support/Pages/study-skills-links.aspx*
>
> *The IT services department also make training for Endnote and Mendeley available via our LSHTM student communities area of Moodle*
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> *I'm not sure we have a specific policy, more that it information literacy is flagged up at many stages in both DL, F2F MSc teaching and doctoral teaching. And 2 modules are offered by the library to ALL students*

Conclusions

- Support for students on basic information literacy is patchy.
- We are not sufficiently developing students' critical information fluency.
- Developing information literacy and (especially) critical information fluency in distance education is hard, but possible.
- There are examples of good work being done.
- Information literacy and critical information fluency are fundamental parts of academic practice, not add-ons.
- Information literacy and critical information fluency need to be embedded in course and curricula.
- A policy framework would help.
- UoLW Library and CDE offer joined-up support on the development of information literacy and critical information fluency.

Appendix 4 Case studies: Course design and pedagogy

4.1 Developing basic information literacy – School of Advanced Study

Sarah Singer, School of Advanced Studies

MA Refugee Protection

Within the MA Refugee Protection and Forced Migration Studies, core modules include an Information literacy activity (E-tivity) in which students are provided with an online tutorial on how to use the e-library, the databases and primary source materials it has access to.

For core module 1 the E-tivity is geared towards accessing materials on international law, while for core module 2 it focuses on accessing materials related to Forced Migration Studies.

The E-tivity itself focuses on retrieving a journal article, which it is expected will be students' primary use of the E-library.

E-tivity 2 – 5% Information retrieval (Weeks 1 and 2)

In this E-tivity students are asked to retrieve a piece of academic commentary from UoL's e-Library. To facilitate this activity, students are provided with an online tutorial on how to use the e-library, the databases and primary source materials it has access to. This not only helps students fulfil the E-tivity but also provides the necessary research skills to fulfil the module requirements.

Purpose: To retrieve this piece of recommended reading for Week 1 from the e-Library: [*journal article*]
Task: Please follow the following link [UoL E-Link] which will lead you to the library online tutorial. Complete the online tutorial and use the skills you have learned to access the above piece of academic commentary. In the E-tivity 2 forum, comment on any difficulties you found in accessing this item and any interesting or useful resources you encountered in using the E-Library, particularly in relation to accessing reading materials for Week 1. Please post your comments by Monday of Week 2.
Respond: In the E-tivity 2 forum please post comments on your peer's E-tivity task by way of sharing your own experiences, between Monday of Week 2 and Sunday of Week 2.

4.2 Elements of an advanced / critical approach – School of Oriental and African Studies

J Simon Rofe, SOAS

Global Diplomacy Example: E-tivity 1

Purpose: To access e-resources and use a bibliographic database to find articles from an academic journal through the online library.

Task: Watch the tutorial on retrieving information from the online library. Using an appropriate database search for articles relating to 'Diplomacy'.

Produce a bibliography containing two articles chosen by you. One that is available through the University of London's online library, the other through the SOAS library.

Write a short paragraph of no more than 200 words to accompany your bibliography telling your colleagues why these particular articles are worth reading and what they will gain from using your bibliography.

Post the bibliography and its rationale in the e-tivity 2 Forum.

Respond: Return to the e-tivity 2 Forum and explore a bibliography recommended by one of your colleagues.

Post a reply under this entry giving your thoughts on the selection of articles that were recommended to you. How useful and interesting did you find this selection? Could you recommend an article to add to this bibliography?

Submit both forum entries to TurnItIn no later than 11.59pm (London time) on the date of the submission. E-tivity submission dates are detailed in the Study Calendar.

Outcome: You will be able to search the University's databases, identify and access and evaluate appropriate academic journal articles, and present the required bibliographic information accurately.

We recommend you spend a minimum of 2 hours on this e-tivity, and as much time as you are able participating in the forum.

This Rofe Model draws on the work of HEA National Teaching Fellow, Professor Gilly Salmon. Her work in 2002 established the of value of E-tivities as the “frameworks for online active and interactive learning” http://www.atimod.com/e-tivities/intro.shtml and the five stage model of implementation http://www.atimod.com/e-tivities/5stage.shtml

Appendix 5 Policy for information capabilities

Policy development

From a starting point, anywhere, of energy and enthusiasm, the process of policy development is likely to be more effective, the greater the number of stakeholders involved in the process.

Experience of those who have developed policy suggests that few if any stakeholders will be actively opposed to the idea of information capabilities. The problem is more likely to lie with getting sufficient attention and priority accorded to information capabilities, in amongst other competing pressures.

Policy could be developed at almost any level in a University – Programme, Department, School, Faculty, and / or University.

Stakeholders include:

- Students
- Academic units - schools, faculties, departments, programmes
- Programme leaders and lecturers
- Staff / educational / academic development units and developers
- Library and information services and staff
- Learning development units and learning developers
- Learning technologists
- Careers and employment services
- QA / QE
- Senior academic management

Possible elements of a policy / strategy for information capabilities

It may be most productive, and also most accurate, to treat for Information Capabilities as part of the discipline or profession, part of disciplinary or professional practice, rather than as separate and adjunct to the disciplines and professions.

Given an account of for Information Capabilities, a policy might suggest working towards these two goals:

a. Any course or programme; in its design, its provision of learning resources, its teaching, feedback on student work and assessment; supports students to develop and demonstrate the necessary for Information Capabilities; and
b. Other University systems and services; for example, student support managers and Library and information services, QA and QE; should support students to develop and enact the necessary capabilities, and assure that this is happening effectively.

Success

What will success look like? Perhaps, every graduate:

a. Has developed the necessary information capabilities, as considered above;
b. Feels supported by their educational experience in achieving the necessary information capabilities, and
c. Values, maintains and extends their information capabilities into the future.

Policy and embedding in practice

As with any policy, it will be important, first to support the embedding of the policy into practice, and second to ensure that QA processes themselves ensure that the policy is being implemented effectively.

Some of the stakeholders listed above – perhaps, in particular, perhaps, academic development, libraries, learning development and employment / careers – will have a strong and effective role in supporting the implementation of policy into the design and operation of courses, and in providing the necessary expertise in monitoring and evaluation. The institution's normal QA processes can also help to ensure that the policies are being implemented, and are achieving what they are intended to achieve.

A complementary approach is to treat Information Literacy as one element of good academic practice. By including attention to proper sourcing and referencing, Information Literacy makes it less likely that students will engage in such bad practices as plagiarism.

A sketch of a possible policy

Rationale for a policy and strategy on Information Literacy: The ever-accelerating growth and turnover, both of information / knowledge and of sources, require graduates to practice an increasingly sophisticated, critical and questioning approach to sources, knowledge and information.

Purpose: Essential graduate qualities; alongside and as part of their other academic, disciplinary and professional capabilities and knowledge; include the commitment and the critical capabilities to specify, identify, locate, obtain, use and reference appropriately, information, in work, research, study and life

The primary purpose of a possible policy / strategy on Information Literacy would be to ensure that graduates of the University have developed and demonstrated such essential qualities.

More colloquially, such policy / strategy can ensure that University graduates are, and have the passion and the ability to remain, full members of the global knowledge and information society.

Enhanced student satisfaction, retention, performance and employability, and enhanced University reputation and finances, would be additional benefits.

Possible core of a policy: Through course design, teaching, learning and assessment, students will develop and demonstrate; in ways appropriate to the discipline or profession they are studying; the commitment and the capability critically to specify, identify, locate, obtain, use and reference appropriately, information, in ways that build on and go beyond subject benchmark requirements.

Considerations for Implementation: Information Literacy, as considered here, should be included; in discipline-appropriate terms; in programme and core module learning outcomes. Courses should provide opportunity, teaching, support and resources for students to develop the necessary capabilities and commitments. Attainment of Information Literacy should be assessed as a part of module / programme assessment.

Implementation may best be achieved by co-operation between discipline and information specialists.

Considerations for audit: QA processes would audit, report, and as required make recommendations, on practice and attainment in information literacy.

Case Study Developing policy at QMUL

(Based on an interview with Martin Beeson, Teaching and Learning Support Manager, Mile End Library, Queen Mary University of London)

The IL Policy at QMUL originated with the Library. (The library includes a teaching and learning support function and a research support function.) The IL Policy it was derived in part from QMUL employability and graduate attributes policies.

Policy is a great start, but it's not enough. Every new course and every course review requires continued attention to IL. Subject librarian membership of course teams aids this process. But it doesn't work every time.

To help effective and credible library involvement with courses, faculty liaison librarians at QMUL are gaining HEA accreditation.

QMUL prefers the embedding of information literacy rather than bolt-on or optional provision.

A library-based and a subject-specific approach can work productively together. Embedding requires at least some academic ownership of IL.

IL skills are academically necessary, but also necessary for wider personal and professional life and indeed citizenship.

It is important to evaluate the impact on student learning of the teaching of IL.

Constant marketing of IL is required. Arguments for IL include:

1. The critical / evaluative / academic nature of IL
2. The essential role of IL in independent learning and research
3. Theoretical bases for IL, including threshold concepts and the nature of scholarly practice

Not all academics are fully up-to-date with recent developments in information sources and information search methods. Tactful support from subject specialist librarians can help.

The total set of IL skills required by a student or an academic is substantial but not overwhelming. It is readily learnable within a course. Academics' fear that Information Literacy means turning students into librarians is not well founded!

Appendix 6 - Managing information – using reference management software

Students can usefully be encouraged and supported to use reference management software. Of course, they should use it critically. Their use of it should be founded on sound knowledge and understanding of referencing conventions, and of the purposes of referencing. This knowledge and understanding will enable them to check what the reference management software produces, and to produce a defensible reference when the software misbehaves or does not deliver.

However, with these precautions, and used properly and intelligently, good reference management software:

- Increases the accuracy of referencing;
- Reduces the need to memorise referencing systems, although the need to be able to reference manually is not removed;
- Increases student versatility, because good reference management software can generate references in a wide variety of referencing systems; and
- Helps each student to build their own bank of references in the discipline, as well as developing into good information management habits.

Appendix 7 – Briefly Considering Literacies

The meaning of 'literacy' has expanded (Baume, 2019). It used to mean something like 'being able to read and write', maybe also 'listen and speak'. Now literacy (sometimes, literacies) caries a much broader meaning, something like 'being competent or capable', at – what?

We already have several (often overlapping) proposed literacies – assessment literacy, digital literacy, information literacy, library literacy, cultural literacy, academic literacies, research literacy. (References to numerical literacy – otherwise known as numeracy – suggest the attraction and perceived value of the label 'literacy'.) So there may be other literacies to come.

Employability can be recast as a literacy – careers literacy. So could the (surely misleadingly named) soft skills or attributes – for example, communication, teamwork, leadership, problem solving, strong and appropriate values, adaptability …

What all these literacies have in common is they are capabilities, perhaps with an admixture of personal qualities. They are not knowledge, although their practice usually requires knowledge, or perhaps access to knowledge, and hopefully also critical engagement with and use of knowledge.

Further work is underway at CDE to explore relationships and possible overlaps / synergies among the various literacies.

A larger question explores the potential value of considering academic and professional disciplines as fields of practice as well as fields of knowledge; as, in part at least, literacies. Associated work could explore the relations between practice and knowledge in disciplines.

A larger question still considers the potential value of exploring what capabilities, qualities, literacies are variously common and distinct across the wide range of academic and professional disciplines and practices.

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