i-Spy: an information skills framework for the University of Hertfordshire

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This article describes how learning and information services (LIS) consultants at the University of Hertfordshire set about developing and implementing an information skills (i-skills) framework for the university. Our aim was to promote and support the development of student information skills for the modern knowledge society within a coherent structured framework and to enhance the contribution of LIS consultants to student i-skills development.

BACKGROUND

'People use the internet and new technologies every day – for finding information, communicating, and seeking entertainment, goods and services. Learners are bringing new expectations of the power of technology into higher education … Our goal is to help the sector use new technology as effectively as they can, so that it becomes a "normal" or embedded part of their activities.'[1]

At the University of Hertfordshire we decided that it was time to review and revise our i-skills support arrangements to meet future student needs and expectations in the light of a number of factors:

- the impact of our 24x7 and self-help culture
- the success of our managed learning environment (StudyNet)
- the establishment of the digital study environment as the norm
- the introduction of the university's personal development planning arrangements for students
- the adoption of a more robust quality assurance and enhancement regime.

A project team was established, with an LIS consultant taking a lead role in managing the project, aided by two other LIS consultants.

Project aims

These were:

- to promote and support the development of student information skills (i-skills) for the modern knowledge society within a coherent, structured framework.
- to enhance the contribution of LIS consultants to student i-skills development.

Project bid

Hertfordshire's blended learning unit is a CETL (centre for excellence in teaching and learning) and has funds available for blended learning projects. A successful bid by LIS funded the assistance of external consultants with the project. David Streatfield (Information Management Associates (IMA)) and Sharon Markless (IMA and King's College, London) were commissioned to survey staff and students about their information needs and to conduct research to develop a framework for i-skills.

Consultation

Consultation with students showed that the skills that were felt to be most important were:

- choosing the right information
- taking good notes in lectures
- judging information quality
- organising the information found
- finding information in books

- combining information from more than one source
- finding out how reliable information is.

The areas where students most wanted help were:

- seeking/finding information
- presenting information
- all information skills
- learning resources centre resources
- self-organization
- evaluating information
- referencing.

i-Spy framework

IMA reviewed the most recent literature on information literacy along with existing i-skills frameworks, such as the Sconul 7 Pillars model[2] and the Big Blue Project.[3] They then produced a framework adapted from two earlier models developed by Foster[4] and Todd.[5] The new i-Spy framework is non-linear and based on new understanding of students' information-seeking behaviour, reflecting how learners move back and forth between different processes when working with information. The non-sequential framework is designed to encourage use by students by focusing on learning rather than teaching. It is iterative and is based on three main categories, all of which are underpinned by reflection:

- Connecting with information
- Interacting with information
- Making use of information.

i-Spy Framework : full diagram
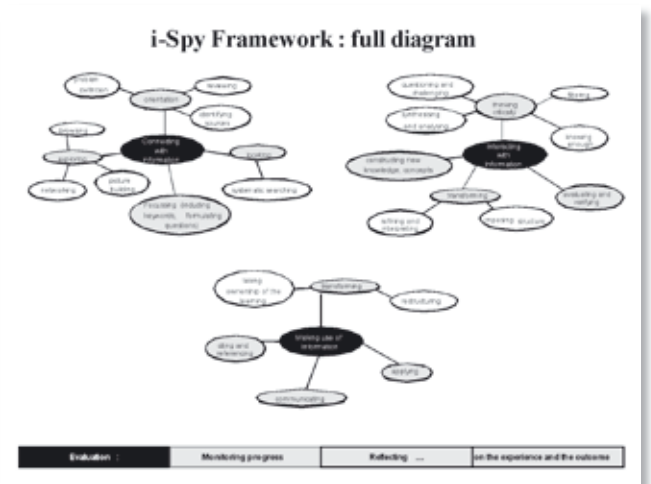
A checklist of criteria for good practice in designing i-skills materials was also produced. The checklist encourages developers to consider the amount of interactivity and active learning offered by the materials, and whether they address different learning styles and create real-life contexts for learning.

Aims and learning outcomes

We needed a coherent set of aims and learning outcomes for each of the main areas in the framework. In order to do this we mapped the overarching principles of the Australian and New Zealand information literacy framework[6] to the top-level aims for each of the three main categories of the i-Spy framework: connecting with information, interacting with information and making use of information. A fourth aim, under the heading of 'evaluation, monitoring and reflecting', was introduced to represent the iterative and reflective nature of working with information.

The Association of College and Research Libraries information literacy competency standards for higher education[7] were used to map learning outcomes to the twelve key areas of the framework. We also mapped levels of ability to the learning outcomes, based on different levels of thinking skills. This was cross-referenced with the vocabulary of Bloom's Taxonomy[8] and the Southern England Consortium (SEEC) for Credit Accumulation and Transfer Credit Level Descriptors for Further and Higher Education,[9] to make the levels of the tutorials clear.

Quality assurance and enhancement

Further work developed a quality assurance and enhancement strategy, with transparent and rigorous procedures. This is in line with the university's academic quality and enhancement strategy for systematic monitoring and evaluation and to sustain the future value of i-Spy for supporting student i-skills development. We set up a 'buddy' scheme with each of the three project team members responsible for one of the main categories in the framework. Each new tutorial is peer-reviewed against the checklist of criteria for good practice and the comments of the reviewer and student feedback are logged before the tutorial can be signed off and made live. This procedure will also be followed for subsequent revision of the tutorials so that the whole life-cycle of each tutorial is documented and logged.

Implementation

Our next task was to start populating the framework with i-skills content in 'bite-size chunks' relating to the skills levels and learning outcomes, with a key emphasis on ease of use by students.

We worked together with all our LIS consultant colleagues in multi-disciplinary teams to produce the first four tutorials, chosen as a result of the priorities identified in the student consultation exercise.

The first four tutorials we created were:

- Identifying sources
- Systematic searching
- Citing and referencing
- Evaluating and verifying.

One of our learning technology development consultants created StudyNet web pages to introduce the i-Spy framework and concepts, and to support navigation of the tutorials. These pages are available on StudyNet from our learning and information services pages and there are also links in the skills section of the students' personal development planning area on StudyNet.

We have since developed a further two tutorials, this time also working with members of academic staff:

- Essay and report writing
- Thinking critically.

Evaluation

We asked for student volunteers to test the tutorials for us and they gave us useful feedback. In general the students appreciated the materials and echoed a number of the points made in the checklist of criteria for good practice about effective e-learning materials; they welcomed choice in their pace and level of learning and enjoyed the high levels of interaction with the materials provided.

Together with IMA we will be running further workshops to obtain students' views on the existing tutorials and this, along with an online evaluation form and informal evaluation from

users and colleagues, will inform enhancements to existing tutorials and the development of future ones.

i-Spy is designed for use by students both in conjunction with timetabled skills sessions and their academic programmes, and also to support independent study.
Our LIS colleagues have started to embed i-Spy tutorials into their skills materials. The following case studies provide examples of how i-Spy tutorials are being used.

Case study 1: Common foundation programme for pre-registration nurses
The systematic searching tutorial is being used to replace what can amount to 13 identical face-to-face skills sessions across a cohort of over 600 nursing students.
The LIS consultant for health introduces a StudyNet online tutorial for health and human sciences (HHS) to the whole cohort at the start of their course and explains that they are requested to spend time on it because their assignments will be marked with this in mind.

The LIS consultant has made the generic 'systematic searching' tutorial relevant for health students by designing an additional subject-specific introduction and online workbooks for key health databases. Students can then practise principles introduced in the i-Spy tutorial using familiar resources. An online feedback form has been added and students are required to complete this once they have worked through the tutorial, allowing the consultant to monitor student engagement with the online tutorial.

The academic staff involved have been happy with the progress of students using the module. After initial discussions they came on board because it was felt that an online tutorial could provide a more 'blended learning' approach to their module delivery and students could repeat it if necessary when it came to researching their assignments. Originally staff felt that there might be a need for a face-to-face workshop for students who struggled with the online tutorial but this has not been necessary. As a result, one of the core modules, which all nursing students are required to take, has been rewritten so that the assessment more overtly relates to the online tutorial's content. It is hoped that this will encourage increased participation in information skills training in comparison to attendance at face-to-face sessions.

It is planned that another tutorial on 'Focusing' will be written and this can be used as a foundation for a more advanced online tutorial for health. This will cover thesaurus searching and controlled vocabulary, for example using medical subject headings (MESH) to search Pubmed Medline.

Case study 2: Level 3 advertising students
In this case study one of the LIS consultants supporting business worked with the advertising lecturer to identify the information skills students would require to complete an assignment, which could also be submitted to an external competition.

Due to the huge amount of information available, especially in digital format, the tutor wanted the students to be able to identify good-quality and reliable information in preparation for their research. Students were instructed to complete the i-Spy tutorial on evaluating and verifying information sources, and then complete a follow-up quiz devised by the LIS consultant. This quiz asked students to evaluate sources of information relevant to their assignment.

Feedback from students indicated that they found the tutorial useful. The lecturer was pleased with the standard of work for this specific assignment, and felt that the i-Spy tutorial helped reduce student panic in equipping them to produce a short business document from a wealth of industry-specific data. It was also an attempt to stop students limiting their research solely to a Google search.

The i-Spy tutorial provided a good introduction to evaluating information sources, and these skills were then extended and put into practice with a subsequent face-to-face session with the LIS consultant. During this the students completed a workbook which guided them in using secondary sources of information helpful for research for their assignment.

From the point of view of managing the project, the main project coordinator has spent a considerable amount of time maintaining the many project documents and progressing and disseminating the framework.

In terms of skills, we have all learnt a tremendous amount from our involvement with the project, from designing web-based skills materials, producing posters, finding out more about how our

students learn and working with colleagues from other areas of the university.

BENEFITS OF I-SPY

The tutorials will contribute to students' academic achievement through the development of i-skills, and will also contribute to the enhancement of graduate employability skills through links with the university's personal development planning system.

The generic nature of the materials means that tutorials can be applicable in a wide variety of contexts where development of student i-skills is important. The framework and materials also contribute a key element in fulfilling the LIS strategy of self-help provision and flexible learning support.

NEXT STEPS

We plan to carry on populating the framework with new tutorials and to further embed these into our skills materials. Academic staff have been invited to join the development teams for future tutorials and such collaborative partnerships with LIS consultants will be extended to ensure the continuing relevance to academic study priorities in the university.

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