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“Triples” for information research skills: a multi-disciplinary approach

Introduction

This paper outlines a new approach to teaching reference/research skills. It was developed for PhD students but has been used successfully for teaching reference and search skills to students on a Masters in Library and Information Studies. It uses example search subjects in groups of three (“triples”), coming from the domains of arts/social sciences, the sciences and engineering, intended to inculcate multi-domain search skills to support cross-domain research. It is supported by a four-stage structured search strategy, summarised on a web page, which begins with quick reference and progresses through general Internet academic and other sources, then general academic databases and finally specialised academic databases/sources.

Project ULISES

In 2009, myself and a colleague, David McMenemy, were funded by the Science Faculty at our university, Strathclyde, to develop “ULISES” (Utilizing Library and Information Services for Effective Scholarship), a deep research skills course, whose target audience were postgraduate researchers beginning their studies at MPhil, MRes and PhD levels. The aim were to make researchers efficient and thorough information searchers not only in their own domain but across all subjects, since the then new Principal had made cross-domain research an institutional priority.

Four sessions were designed. The first explained a basic search strategy: analyse the question, define what is needed and then retrieve it. This basic strategy was deepened and refined in the following sessions e.g. by the addition of seed searching. The starting level was general reference questions, as this was the level that a newcomer to a field would need to start with. CREDO was used and students had to find answers for, and write down their search strategy, for triples like the following:

Q: What was the pseudonym of the French writer Baronne Dudevant (1804-76), who had a ten-year relationship with Chopin?

Q: Who became the first president of the United Republic of Tanzania?

Q: What was the name of the first programmable computer, designed by Alan Turing and Tommy Flowers in 1943 for code-breaking in World War II?

The second session was on Internet information, with a strong bias towards trusted academic resources. A ‘trust’ methodology was proposed for Internet sources, which consisted of recognizing suitable domains (e.g. strath.ac.uk) and using the Internet Archive as a check on the authority of a resource. Other academics were also proposed as vital

sources as well as specialised media (e.g University lectures on YouTubeEDU). At this point, students were given PhD 'triples', from past PhDs, to search for, e.g.:

Visual transduction proteins and their involvement in retinal disease.

Exploring the government of, and accountability, for water in Scotland

The behaviour of geotextiles and geogrids following environmental conditioning in Kuwait.

The same PhD triples were used for the third session, which covered general academic databases (e.g. Compendex, Inspec, Ovid, British Humanities Index, CSA, Ingenta, Connect, ISI Web of Knowledge, JSTOR) and others. As well, special types of material were explained (i.e. newspapers, government publications, standards, maps, theses etc). Using national and union catalogues and obtaining inter-library loans was also covered. Finally, students were introduced to EndNote, citation manager software, to help them manage the many items they were finding.

In the final session, students did not use a triple, but now focused on applying their new searching knowledge to their own PhD topic. Specialised resource lists were compiled for each Department and these were explained to students on an individual basis. Overall, PhD students really enjoyed the idea of triples as they added a new challenge to what might have been a routine searching exercise for known materials.

Teaching using 'triples'

After the success of ULISSES it was decided to re-engineer the course as a module for use on our Masters in Information and Library Studies. The materials on searching and information resources were re-usable, but an assessment was needed. In the past, giving students the same topic (or even three topics as a triple) could mean that there might be collaboration between students, since references found could be expected to be similar. The obvious approach was eschewed for a novel one: every student would get a unique triple!

Two canonical sources of new research, one in science and engineering, another in arts and social sciences were chosen at a point in time as sources for triples. Since both sources only reported on the best research, the topics gleaned from them could all be assumed 'equal' in being both new and notable. The only topics dropped were those in arts/social sciences set in the UK. It seemed likely that a student getting a 'home' topic might have an easier time than another student getting a 'foreign' topic.

One other problem remained. If each student got a totally individual triple, then how could their performances be compared? The solution was to keep triples unique to each student but share their elements with other students. Each student would share each triple element with three different students. Thus, for four students, A, B, C and D, their assessed triples might be:

Student A: *Is Belgium really two nations?*

Solitons in ultracold gases

Multi-modal ear and face modelling for facial recognition

Student B: *Is Belgium really two nations?*

Carbon dioxide effects on ocean acoustics

Fabrication of three-dimensional, single-crystalline silicon structures from thin films by coupling photolithography and a self-folding process driven by capillary interactions

Student C: What sources of evidence led Copernicus to his new theory of the cosmos?

Solitons in ultracold gases

Controlled nuclear fusion reactions

Student D: What was Louis Armstrong's most important achievement?

Time-lagged interactions between plants

Multi-modal ear and face modelling for facial recognition

This process and rationale have been explained to students and no complaints have been raised. Students are told in the Assessment specification:

“Assume you are an Information Services Librarian working in an academic library and that the topic enquiries come from newly arrived PhD students, whose background in the topics is unknown to you and thus may be minimal.

For **each topic** you must:

1. Provide **between 20 and 50 references**, using a wide range of sources and material types. The Harvard referencing system must be used.

2. Write a 500 word essay which:

Gives the enquirer an up to date, accurate summary of a topic, and recommends canonical source(s) for more information

Critiques the search strategy employed to create the summary and the bibliography, showing strengths and weaknesses”

The above requirements give students a clear, realistic context and encourage them to get into the habit of critiquing and improving their search knowledge continuously.

Student feedback from the course has been extremely positive. One past student said:

“This class is what I imagined the Librarianship course would be all about”.

Alan Poulter

1103 words.