Fostering Effective and Appropriate Use of Online Resources:

(Or: How Do We Stop Students Copying their Essays from Wikipedia?)

Meriel Patrick

Intute, University of Oxford

The perceived problem

In certain educational circles today there is a widespread feeling that many students are relying too heavily on sub-standard Web resources for their academic work, and are consequently neglecting conventional print media. With this goes the worry that students are settling for quick or easily obtainable answers rather than thorough and rigorous ones: the use of Wikipedia and other sites of its ilk tends to be viewed as a particular problem. Students who are making the transition

Discourse: Learning and Teaching in Philosophical and Religious Studies,
Vol. 8, No. 1, Autumn 2008, pp. 99 - 111

between further and higher education may be seen as especially vulnerable, as the increased expectation that they will work independently brings with it a greater need to locate their own source materials, and hence a corresponding risk that what they elect to use will be unsuitable.

However, these concerns generally seem to have their roots in impressions and anecdotes rather than hard evidence. In an attempt to assess the true extent of the problem and determine what—if any—action might be appropriate, Intute: Arts and Humanities conducted a survey into the use of print and online resources among further and higher education students.

Survey details

The survey was targeted at students of philosophy, theology, and religious studies, and was publicised chiefly via emails sent to schools, sixth form colleges, and universities. It ran from 4th to 22nd June 2008. The survey took the form of an online questionnaire with twenty-three questions, most of which were multiple choice. Some questions were accompanied by optional free text fields to allow students to give additional information if they chose.

A total of 261 students completed the survey. 58 of these were in further education (studying for A-levels, Highers, or a similar qualification), 131 were undergraduates, and 72 were graduate students. However, this paper focuses chiefly on the answers given by the further education students and the undergraduates, giving an effective sample size of 189. Of this group, 44% were studying philosophy, and 60% religious studies and/or theology.

Students' use of print and online resources

After some opening demographic questions, the first major section of the survey focused on the sorts of resources students use in the course of their academic work. We asked two sets of questions: one about the resources used for a typical essay, and one about those they would

expect to use for researching an unfamiliar area within their discipline —when looking for background information, for example, or as part of an independent project.

We began by inviting students to select from a list all the types of resource they would expect to use in the course of writing a typical essay or assignment. The results were as follows:

	FE Students	Undergraduates
Handouts or other material provided directly by course teacher	90%	75%
Books, articles, or other print resources recommended by course teacher	78%	98%
Other print resources	29%	85%
No print resources	2%	0%

Table 1: Print resources used for a typical essay or assignment

	FE Students	Undergraduates
Google or other search engines	76%	69%
Wikipedia	55%	40%
Online resources recommended by course teacher	62%	79%
Other online resources	31%	69%
No online resources	14%	3%

Table 2: Online resources used for a typical essay or assignment

It seems plain from these figures that students are still making extensive use of print resources. The vast majority of students turn to material either provided or recommended by their teachers, with—as we would perhaps expect—something of a preference for handouts and similar material among further education students, and books, articles, and other print resources among undergraduates. Online resources are certainly also widely used, but have not yet achieved quite the same universality as print materials.

The most striking difference between students in further education and undergraduates lies in the prevalence of use of resources not specifically recommended by their teachers: undergraduates are nearly three times as likely to use print resources located by other means, and more than twice as likely to use online resources in this category. This information alone provides no way of assessing the type or quality of resources used, but it is encouraging to note that a large proportion of university students apparently routinely look beyond the prescribed reading for an assignment.

To determine which sorts of resource students rely on most heavily, we also asked three further questions: which of the listed categories of resources they would usually consult first, which category they would expect to make most use of, and whether they would expect to make more use of print resources or of online ones overall.

The bias towards printed resources was even more pronounced here. A significant majority of students (84%) said they would consult either handouts or recommended books and articles first—once again, further education students were significantly more likely to opt for handouts, and undergraduates for recommended books or articles. A similar proportion (82%) said they would be likely to make most use of one of these two types of resource. If other print resources are also included, that figure rises to 92%.

Almost two thirds (63.5%) would expect to use print resources more, and another 28% would expect to use print and online resources about equally, leaving only 8.5% who would expect to make more use of online resources.

The questions about researching an unfamiliar topic featured a slightly different list of resource types (reflecting the fact that, for example, handouts are unlikely to be available for areas of the subject being studied independently). The results for the first question of this

set, in which students were invited to select all the types of resource they would expect to use, were as follows:

	FE Students	Undergraduates
Books, articles, or other print resources recommended by course teacher	81%	85%
Other print resources	53%	67%
Library catalogue	15%	69%
Google or other search engines	53%	69%
Wikipedia	38%	46%
Online resources recommended by course teacher	45%	57%
Other online resources	24%	43%
None of these	0%	0%

Table 3: Resources used when researching an unfamiliar topic

Most of the percentages here are lower than for the same categories of resources in the earlier questions about a typical assignment, indicating that in general students expect to use fewer types of resource when working on an unfamiliar topic. Print resources remain popular, with recommended books and articles topping the list. Google and other search engines take second place, but with other print resources very close behind. Those who favour traditional methods of gathering information may take some comfort from the fact that, at least among undergraduates, library catalogues remain more popular than Wikipedia.

As in the first set of questions, students were also asked which type of resource they would expect to consult first, and whether they

would expect to use print or online resources more overall. (Students were not asked which specific type of resource they would expect to use most, because of the difficulties in predicting this for an unfamiliar topic.) Print material retained the upper hand, but online resources proved significantly more popular here than in the questions about a typical assignment. 56% of students said they would consult some form of print resource first, while 16% favoured Google, and 12% Wikipedia. Just under half (46%) would expect to make more use of print resources, 27% would expect to use print and online resources about equally, and 23% would expect to make more use of online resources, leaving 4% who were uncertain.

Assuming that respondents were on the whole answering honestly, it appears that the impression that students are neglecting print resources and relying too heavily on online material is something of a myth. Print resources are still the core information source for the vast majority of students, and while it seems that students lean more towards using online resources when researching new topics, print material nevertheless remains important there. Widespread Internet access has undoubtedly increased the variety of information sources available to students, but this is surely no bad thing.

Space was provided for students to give further information about their use of print and online resources if they wished to do so, and while the comments expressed a wide range of opinions, some interesting trends emerged. A number of students said that they liked to use the Internet to get an overview of a subject, then turn to print resources for more detail; some also reported using online sources to identify additional print material which might be useful. Students liked the convenience of the Web: material can be found quickly and easily, and—unlike library books—used by multiple people at the same time. Online journals and encyclopaedias were particularly popular types of resource.

However, students' opinions of online material were not unanimously positive. A significant number expressed concerns about the reliability of Web resources, particularly Wikipedia. Although it is clear that many students do make use of the site, they generally seem well aware of its somewhat dubious reputation: comments typically stressed that while it was useful as a starting point or for gaining information quickly, what it said should always be verified using more academical-

ly rigorous sources. Other students mentioned more practical issues, complaining of slow or unreliable Internet connections, or commenting that they found it more pleasant to read printed texts than online ones.

Training and confidence

The next section asked students about the training they had received in finding suitable resources for academic use, and about how confident they felt in doing so.

Training in general appears to be rather sparse. About two thirds (66%) of students reported that they had received no or only a little training in finding print resources, and this figure goes up to just over three quarters (76%) for online resources. (Surprisingly, further education students reported slightly more training than undergraduates. There are a number of possible explanations for this discrepancy, but it seems probable the subjective nature of the scale used contributed: that is, that the two groups have different views about how much training constitutes a little, a moderate amount, or a lot.)

Nevertheless, despite the lack of formal instruction, students' confidence in their ability to find resources is high: 91% felt reasonably or very able to locate suitable print resources, and 88% for online resources. Undergraduates were a little more confident than further education students, particularly where print resources are concerned.

Knowledge of online resources

The final major section of the questionnaire was intended to assess students' knowledge of major Web resources in their disciplines, and hence test to what extent their confidence in their ability to locate resources was justified.

This was accomplished by presenting students with a list of twenty three key websites, and asking them to select one of four options for each one:

- Never heard of
- Heard of but haven't used

- Use occasionally
- Use regularly

The results were filtered according to subject group: that is, only philosophy students' answers were considered for philosophy sites, and only religious studies/theology students' answers for theological sites.

Despite this, however, the results were somewhat disappointing. Only two sites had near universal recognition and a high level of use for academic purposes, and these were the two sites on the list with perhaps least claim to be academic resources—Google[1] and Wikipedia.[2] 82% reported using the former regularly, and another 15% occasionally. Wikipedia is used regularly by 45%, and occasionally by 44%.

Only three other sites were known to over half the students from the relevant discipline: Bible Gateway[3], the Stanford Encyclopedia of Philosophy[4], and the Routledge Encyclopedia of Philosophy[5]. Roughly one in three (33%) had heard of or used Oxford Scholarship Online[6]. Just over half (58%) of religious studies/theology undergraduates were aware of New Advent / The Catholic Encyclopedia[7], and a substantial proportion of these used it at least occasionally, but a large majority (88%) of further education students had never heard of the site. Similarly, about a third (34%) of undergraduates at least knew of the Christian Classics Ethereal Library[8], but under 10% of further education students. The Internet Sacred Text Archive[9], Adherents.com[10], Religious Tolerance.org[11], and the Perseus Digital Library[12] were all known to around 10 to 15% of students.

---

[1] **http://www.google.co.uk/**
[2] **http://en.wikipedia.org/**
[3] **http://www.biblegateway.com/**
[4] **http://plato.stanford.edu/**
[5] **http://www.rep.routledge.com/**
[6] **http://www.oxfordscholarship.com/**
[7] **http://www.newadvent.org/**
[8] **http://www.ccel.org/**
[9] **http://www.sacred-texts.com/**
[10] **http://www.adherents.com/**
[11] **http://www.religioustolerance.org/**
[12] **http://www.perseus.tufts.edu/**

Somewhat alarmingly, around three quarters of students had never heard of the major bibliographic databases in their fields—77% for the Philosopher's Index[13], and 76% for the ATLA Religion Database[14], although the figure for the latter drops to 64% for undergraduates.

However, perhaps the most striking statistic was the lack of recognition of scholarly gateways. The survey asked about the following: Intute[15]; the Virtual Religion Index[16]; the Wabash Center Internet Guide[17]; the New Testament Gateway[18]; EpistemeLinks[19]; Peter Suber's Guide to Philosophy[20]; Peter King's Philosophy Around the Web[21]; Philosophy at Large[22]; and Noesis[23] (the last of these is a philosophy search engine rather than a gateway proper, but as a specialist tool for locating sites relating to a particular academic area, it seems appropriate to consider it under the same heading).

Typically, name recognition for gateways was under 10%, with only one or two students actually using them. EpistemeLinks and the New Testament Gateway fared somewhat better than the rest, with 19% having at least heard of the former, and 41% of the latter (however, given the comparative popularity of the similarly named Bible Gateway website, it is possible that some students simply confused the two sites).

This section of the survey also included a separate question asking students if they made use of gateway sites in the course of their academic work. Gateways were defined as 'websites offering lists of links to other sites on a particular topic', but no examples were given, as part of the purpose of the question was to determine which sites students associated with this term. Just over a quarter (28%) answered

---

13 **http://www.philinfo.org/**

14 **http://www.atla.com/products/catalogs/catalogs_rdb.html**

15 **http://www.intute.ac.uk/**

16 **http://virtualreligion.net/**

17 **http://www.wabashcenter.wabash.edu/resources/guide_headings.aspx**

18 **http://ntgateway.com/**

19 **http://www.epistemelinks.com/**

20 **http://www.earlham.edu/~peters/philinks.htm**

21 **http://users.ox.ac.uk/~worc0337/phil_index.html**

22 **http://www.liv.ac.uk/pal/**

23 **http://noesis.evansville.edu/**

in the affirmative, but when asked to list the ones they used, many students named search engines, bibliographic databases, and other sites not usually classed as gateways: in fact, the concept seems to be one with which students are generally unfamiliar.

Conclusions

The majority of students have received little training in finding academic resources, but are nevertheless confident of their ability to do so. However, their lack of recognition of key websites suggests this confidence may be misplaced. Anecdotal evidence suggests students are often unaware even of the electronic resources their own institutions offer, but students are unlikely to seek assistance if they don't think they need it: a significant part of the problem is that they are unaware of how much there is that they do not know.

Consequently, there is a significant chance that students are not using the best online resources available to them. Although print material remains the major source of information for many students, online resources are undeniably important, and are likely to become even more so in the future. If students lack awareness of the range of resources available, it is almost inevitable that they will fall back on whatever is easiest to find. For those students who use online resources as a starting point for learning about a new subject, there is a risk that using inappropriate Web resources may also have an impact on their subsequent use of print material. Biased or inaccurate introductions to a topic may mean students move on to the more scholarly literature with a warped view of the subject which may colour their interpretation, and as non-scholarly sources are less likely to point students in the direction of the key academic works in a given area, they may also miss out on important references.

Steps towards a solution

It seems plain that it is desirable for students to receive more training in finding resources suitable for academic use. Ideally, this training should start as early as possible in a student's educational career. A

2008 report on the UCL 'Google generation' study, commissioned by JISC and the British Library, stressed the importance of developing information literacy skills early in life: with regard to students in the US (who have thus far received more attention in this respect than their UK cousins), the report comments that 'the research finds that intervention at university age is too late: these students have already developed an ingrained coping behaviour: they have learnt to 'get by' with Google.'[24] Mirroring the survey results reported above, the report continues: 'The problem here is that they simply do not recognize that they have a problem: there is a big gap between their actual performance in information literacy tests and their self-estimates of information skill'[25].

It also seems necessary for training to be an ongoing process. Too many students report being offered only a brief induction session at the beginning of their course, at a time when they are already likely to be suffering from information overload, and consequently do not retain much of what they are told. If there is little or no subsequent input, it is hardly surprising that students find themselves lacking the relevant knowledge. Additionally, the rate at which electronic resources (and the technology used to access them) develop is by itself sufficient to make regular updates indispensable.

However, while adequate training is vital, it can also be—unfortunately—costly and time consuming, and as a result it may not always be a straightforward matter for departments to meet students' needs in this area. It is therefore important to find efficient methods of guiding students to appropriate material.

The questionnaire answers detailed above suggest that there is a key resource which is currently being largely overlooked: academic gateway sites. These offer hand-picked selections of links to quality websites, and as such, can serve a purpose similar to that of a university library. The books in a university library are selected by experts—usually librarians or members of the university staff—as

---

[24] UCL CIBER Group, *Information Behaviour of the Researcher of the Future*, 11 January 2008,
http://www.jisc.ac.uk/media/documents/programmes/reppres/gg_final_keynote_11012008.pdf, retrieved on 8 September 2008, p. 23.
[25] Ibid., p. 24.

works that are useful for academic purposes. Not every book is useful for every purpose, but libraries provide students with a framework for research on any given topic, and in the same way, a good academically orientated gateway will provide students with a solid starting point for Web-based research.

Gateways are frequently neglected because students don't see the need for them: a common reaction is 'Why not just Google it?' However, gateways offer several advantages over search engines. Quality control of the listed sites has already been mentioned; speed and efficiency are also significant factors. A Google search for a popular term will not infrequently produce several million hits. Sifting through all of these is clearly impractical, so results that appear after the first few pages will usually be ignored. But even searching through the top hits may be a laborious process: many may be unscholarly (very probably including an oh-so-tempting Wikipedia article near the top of the list) or simply irrelevant. Searching a gateway for a popular topic, however, typically produces links to a few dozen of the most relevant academic sites, saving the searcher time and effort.

Some gateways offer even more than this. Links may be annotated, to provide further information about what's likely to be useful before you even start clicking. Intute[26], a free UK-based service with a database of over 120,000 websites suitable for use in further and higher education and research, gives a descriptive review of each site catalogued. The site also has a variety of additional features, including Limelight articles (which draw together collections of links on topics of interest), a conferences and events database, and the Virtual Training Suite[27]—a collection of over sixty interactive online tutorials covering most academic disciplines, providing a tour of key websites in a particular subject area, plus advice on finding and evaluating further resources.

Directing students to gateways is not the whole solution, but it is a fast and efficient way to guide their use of the Internet. The survey suggests that educators are right to have some worries about students' use of online resources, but that it is not the extent of use that they should be chiefly concerned about, but rather the lack of awareness—

---

[26] **http://www.intute.ac.uk/**

[27] **http://www.vts.intute.ac.uk/**

and consequent lack of use—of the most appropriate sites. As part of a wider package of measures designed to improve information literacy skills, gateways are one way to tackle this problem.