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Libraries: A Survey of Current Practice
and Tips for Marketing BI.

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A Survey of Current Practice and Tips for Marketing BI.

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Abstract: A survey of physics librarians reveals that undergraduate physics majors rarely receive formal bibliographic instruction, despite a perception that those students are using many kinds of library resources. In addition, less than half of the responding institutions gave any formal instruction to graduate students. Some institutions have been successful in creating library instruction programs in physics, however. The kinds of instruction given are described, and tips from respondents of how to maximize the chances of obtaining instruction opportunities from faculty are shared.

Keywords: Bibliographic Instruction—Surveys
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Introduction

Ever since I started working as a librarian specializing in the subject of physics, all I have heard is “Oh, the physics department never has library instruction sessions.” “Physicists are always hard sells for BI.” The assumption always seems to be that it is not worth the effort to try and get into the classroom and teach students about information literacy, general research skills, or even how to use library resources. This is despite my observations that just as many physics students as other students enter one-word searches, sift through 10,000 hits by hand, and think they are doing a good job. Institution specific surveys indicate that undergraduates (Leckie and Fullerton, 1999) and graduate students (Brown, 1999) in the physical sciences need to use information resources in their academic careers, and in the latter case, one-half of the respondents sought information daily.

As the proliferation of electronic resources, particularly those of an unrefereed nature, has given users an unprecedented number of choices in searching for information, the need for information literacy has increased markedly for this generation of scientists. Users are now required to make judgements of authority, relevance and accuracy on material that may not have undergone (and may never undergo) peer review. Information overload and information anxiety have become common terms to describe the feeling of there being too much information to process. Traditionally, students rely on peers and advisors to learn how to locate information (Hardesty, 1977), but in this rapidly changing information landscape, formal training in information literacy is essential. Glaser (1984) discusses the difference between the behaviors of experts and novices, including “a coherence of what is known” and “recognition of situations and conditions for using knowledge.” Whereas a novice searcher may limit their information gathering to tools already familiar to them or searches that worked in the past, a literate searcher can adapt new resources to improve their efficiency and enhance their retrieval. A literate searcher will be able to refine searches and critically sort through results to create a manageable pool of knowledge to work with.

Leckie and Fullerton (1999), in a survey of faculty at two Canadian universities, found that, while physics faculty were among the bottom of all science disciplines as far as perceiving a need for bibliographic instruction for their students, still two-thirds perceived that there was a need for BI in the upper level undergraduate years. This paper will investigate whether this perception of need has been translated into actual bibliographic instruction for undergraduates and looks at the bibliographic instruction provided to graduate students as well. Techniques that librarians have used to get bibliographic instruction sessions will also be shared.

Status Report of BI in Physics Libraries

In order to determine just what kind of BI physics majors and graduate students are being exposed to, and to figure out how to increase the presence of librarians in the physics curriculum, a survey was created to gauge librarian perceptions of BI. The survey was distributed to those members of the Physics, Astronomy, and Mathematics Division of

the Special Libraries Association who work at academic institutions and have responsibilities in the area of physics. To reach a larger audience, the survey was also posted on the Division's electronic discussion list, which has a readership twice the membership of the Division.

Of 60 mailed surveys, 31 were returned, with an additional 12 responses via email from the discussion list. The vast majority (81%) of responding institutions were PhD granting, mirroring the makeup of the Division. 43% of the institutions enrolled between 10,000-20,000 students, and equal number had more than 20,000 students. 53% of respondents had between 10-50 undergraduate majors, and 16% had more than 100 majors. For graduate students, 72% (of graduate degree offering institutions) had more than 50, and 33% had more than 100 students.

The survey then asked librarians to gauge what kinds of materials they perceived the students needed to use in their studies (see Table I). The Leckie and Fullerton (1999) column refers to science faculty expectations from their survey. Most of the results are similar, suggesting some universality of perception of need, although (not at a statistically significant level) librarians perceive students use more reference materials (encyclopedias, indexes, and handbooks) and less review articles, journals, and books, than the professors do. Naturally, graduate students are expected to use just about everything, including the preprint/eprint literature, and even ¼ of undergraduates are perceived to use preprint literature in their careers.

So, how are students getting an education in learning to use these resources? Many universities have a required bibliographic instruction component of their undergraduate curriculum. Sometimes it takes the form of a stand-alone information literacy course, but often it is merely a how to find books and journal articles session as part of an English or Communications required course. One third of respondents (see Table 2) have a required university wide program at their institution, and another third have the same kind of course, only where the bibliographic instruction part of the course is at the discretion of the teaching faculty member (thus, not all students are exposed to BI). In addition a small fraction of students had physics specific bibliographic instruction (by the physics librarian, and covering at least some physics specific resources). However, when multiplied by the percentage of students that received the physics specific instruction, only 7% of undergraduates and 23% of graduate students actually receive bibliographic instruction specific to physics.

Of the physics-specific courses that were taught, all involved both handouts and a demonstration or hands-on presentation of specific resources. In addition 80% of undergraduate sessions, and 75% of graduate sessions also involved a tour of the library. 18% of sessions actually involved some theory of information literacy mixed in with the more applied resource demonstrations. 15% of sessions had automated tutorials, and several write-in comments expressed that the librarians were going to explore this option as a way to reach students at a point-of-need, albeit impersonally, since it was hard to connect with students in a group setting when they actually needed the instruction. For example, many of the graduate student instruction sessions are included as part of new

student orientation, presumably when the students are already overwhelmed with first year coursework and all the other things they need to know in order to be employees of the university. Research is usually the farthest thing from their minds at the time they are getting a tour/lecture.

Setting up and Marketing Bibliographic Instruction

So, things aren't looking very rosy for physics librarians. It appears that BI only reaches 7% of undergraduates and 23% of graduate students despite library usage by these populations. However, some librarians have made headway and created library instruction programs for their physics users.

There are several good background resources that address setting up a bibliographic instruction program from an organizational point of view (e.g., Grassian, 1993; Roberts and Blandy, 1989). Hardesty (1977) articulates the need for multi-level instruction, from orientation to the library system, through introductory search strategies, subject specific resources, and "the nature of a particular discipline and the nature of the structure or organization of the literature of that discipline." (pg. 16)

The research literature indicates that the optimal time and place for instruction is at a "point-of-need." For undergraduates, this point-of-need is predominantly in direct response to the need for assignments to be completed (Cheuk, 1999). Individual help at the reference desk is one method of filling these acute needs, but many students are inhibited from taking advantage of this resource. The traditional method of reaching a wider audience is the "one-shot" bibliographic instruction session. In that situation, the librarian addresses the needs of the students for a particular assigned research project. Others advocate an even more aggressive approach of integrating instruction throughout a course and working with faculty to design more effective research projects (Carlson and Miller, 1984; Arp and Wilson, 1984).

Since, based on the survey, it appears that physics faculty in general are reluctant to include BI components in their courses, physics librarians need to make a concerted and determined effort to convince faculty of the need for this type of instruction. Based on comments from survey respondents, the following suggestions for "marketing" bibliographic instruction to physicists have been culled. For the purposes of this paper, marketing is defined to be a logical, thoughtful appraisal of what opportunities there are for giving instruction, and how best to convince faculty of the usefulness of BI.

Appraisal of Markets

The first step in marketing bibliographic instruction is to find out who really needs instruction, in a point-of-need sense. For students, this involves finding the specific courses or professors that integrate research projects into their curriculum. Collecting syllabi and keeping track at the reference desk should indicate the existence of such classes. If there are no such classes, one can consult the department's curriculum

committee and see about creating such a component. Ideally every student would have some formal training in information literacy, so one has to look for required courses and find opportunities to implement instruction there. By segmenting the market of all students into more manageable chunks that have more uniform needs (e.g., graduate students, 3rd and 4th year and 1st and 2nd year undergraduates) one can meet those needs effectively and efficiently. For example, beginning graduate students often take a seminar course, wherein they are introduced to the institution's research groups. This would be a natural place to introduce research skills, and perhaps have the students do a literature search on a particular research group. At the undergraduate level, physicists are attempting to make their course material more relevant and seem less like material that is 100 years old. A research assignment that highlights how optics, quantum mechanics, etc., are still being actively investigated will help to bring life to the material.

Persuasion

By understanding how people are moved to do something different from normal, librarians can more effectively get them to do so. Rogers (1971) and Kotler (1982) identify five steps people go through in accepting new ideas: awareness, interest, evaluation, trial, and adoption.

Awareness

Librarians often have an awareness program for soliciting bibliographic instruction. Emails and/or flyers are sent out at the beginning of a semester, letting the faculty know instruction is available. Flyers may be posted in the library announcing drop-in classes to teach users specific skills. Some librarians even get themselves invited to a department meeting to make a face-to-face plea for instruction. These activities do serve to alert most faculty of the existence of bibliographic instruction. But, often the librarian's effort stops there. Hardesty (1977) states that "print materials, such as pamphlets, tend to work only at the first stage, the awareness stage. They seem to do little to convince individuals to try an innovation."(pg. 24) For the most part it appears that faculty have to progress to the interest and evaluation stages all by themselves, based on the awareness content they have been given.

Interest

How does one engender interest then? Once an appraisal of the potential markets has been determined, one has to target those markets. By concentrating on those candidate courses instead of trying to persuade everyone to include instruction, a strong, detailed case can be laid out for instruction in those particular courses. One can find out what the specific assignments are, and then figure out how to do them better. For example, one professor had an assignment for his students to trace the history of a concept they found in a recent journal article. Since our university had recently acquired the Web of Science (the online version of Science Citation Index), I could show him how easy it was to take an article and follow links back in time, as well as go forward in time to see what kind of

parallel evolution of ideas has occurred. Not only do I have a new lifelong user of Web of Science, I also got the opportunity to show his students this valuable resource.

Another way to engender interest is to point to programs in other departments in your institution or other institutions that have achieved success in their BI efforts. Build on the successes of others **shamelessly**. Ideally, if you have contacts among “teaching faculty” in other departments, use them as references to sell library services. Teaching classes in associated disciplines, e.g., biology or chemistry, where library instruction is more entrenched can yield valuable references to use when recruiting in physics. Faculty are usually happy to talk about something they believe in, and teaching faculty are often more receptive to comments from their peers than from a librarian whose job is largely a mystery to them. Ohio State University (Tiefel, 1984) sponsored colloquia where teaching faculty talk to other teaching faculty, recruiting BI across disciplines, with huge success. Hardesty (1977) mentions that “one of the more successful things I have done [to promote BI] is to take two of our Biology faculty to visit Earlham for a day.” Werrell and Wesley (1990) also found success in presenting their own workshop to their faculty.

One of the most important ways to kindle interest in BI is to offer as vivid and complete a description of the proposed instruction as possible. Research the opportunity you have found and figure out how you will meet the users’ needs *before* you approach the faculty member (Warnken, 1986). If you can concretely show how the students and professor will benefit, you have almost closed the deal.

Evaluation

After the faculty member has heard all the skills and concepts students can learn from instruction, they need to evaluate if it is in their best interest to implement it. Faculty may be responsive for different reasons. From an altruistic perspective, they can see that BI is helping to create lifelong learners and savvy information users. Information literacy can only make their students’ perspectives more sophisticated and well balanced. From a selfish perspective, if the faculty member has to read research projects, they will want to make the experience as painless as possible. The more coherent, diverse, and well-developed papers that come from students that have a better grasp of the background literature may even make reading the papers an enjoyable experience.

Trial

This stage of the acceptance process involves the faculty member actually trying the service out. This is where the ideas have to be actualized. In many ways this is a very important event, and it could either greatly increase or decrease the credibility of library instruction. It is thus very important to prepare well. When selling the class to the faculty all the major concepts and ideas were articulated, so the only thing left is to get all the details in order. Prepare for contingencies, and have backup plans for if things go wrong. Since these classes are so important, it is also imperative that you don’t overextend resources. Allow enough time to adequately prepare for the class, and don’t

commit to too many classes so that you cannot do a quality job on any one of them. In the end, more harm than good is done.

This step is not finished with the actual class. Follow up afterwards and show an interest in how you did. This forces the faculty member to think about and evaluate the performance, rather than just passively let it happen and forget about it. Ask for reviews from students, so the professor hears their opinions as well. Did the professor notice a difference in the final product?

If the class did not go well, all is not lost. Let the faculty know there were problems and you were disappointed with the performance. But, tell them your ideas for making it better the next time. All faculty were new teachers at one point, and they should understand that things don't always go the way they were planned. If you can articulate how to solve the problems, you can get another chance.

Adoption

If the class goes well, and the faculty member is convinced of its usefulness, they may decide to do it every year. This is not the time to rest, however. The class needs to be constantly evolving so that it stays indispensable to the students and the faculty. This may also be the time to branch out into a new market segment and start the process over. For example, if the graduate students have been reached, the undergraduates may be the next target. Point to your previous success as a springboard to get the new market segment interested. It should get easier and easier as you build on your successes, until you have covered your entire market.

Conclusion

Although both faculty and librarians perceive that undergraduate students use a wide variety of library materials, little formal library instruction is actually done in physics. Indeed, less than one quarter of graduate students receive any form of physics specific library instruction, and instruction involving an information literacy component is almost nonexistent. Despite this low incidence of instruction, there are some successful BI programs in existence. A conceptual framework has been introduced to help in the process of marketing BI to physics faculty, and the tips given will hopefully lead to success for other libraries in reaching their graduate and undergraduate physics users.

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Table I

Percentages of respondents that perceive students in the above class levels use the indicated materials. The L&F column refers to Leckie and Fullerton's (1999) survey of faculty perceptions of student use of materials.

	1-2 yr	3-4 yr	Graduate	L&F
Book	61	75	100	83
Journal	61	75	100	90
Review Article	18	43	93	67
Index	54	68	100	53
Handbook	54	61	96	40
Encyclopedia	57	46	54	25
Popular Literature	36	14	14	19
Preprints	7	25	86	N/A
Web	57	68	93	N/A
OPAC	75	75	96	N/A

Table II

Percentages of respondents who indicated students in the selected class levels received instruction in the indicated manner. Physics specific instruction is that given by a physics librarian or involving physics related resources. University optional and required instruction are BI classes that are part of the general curriculum (e.g., English composition).

	1-2 yr	3-4 yr	Graduate
Physics Specific	14	12	37
University Required	33	0	0
University Optional	30	47	28
None	23	37	26