Bibliographic Lesson Plan: Subject Term vs. Keyword, "deep Web", and Academic Search Premier

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Introduction:

Online indexes are an important component of a library's collection because they provide high-quality, scholarly and current event resources to the academic community. Moreover, they provide the perfect vehicle for a discussion of the "deep Web," and the content-rich information one can find far fom the province of search engines; "The Invisible web refers to the vast collection of information that is accessible via the worldwide web, but is not indexed by conventional search engines" (Ru and Horowitz, 2005, p. 249). The quality of information in online indexes is far higher than in general Web sites. Ru and Horowitz (2005) also note that "research conducted in March 2000 by BrightPlanet.com estimated that searchable online indexes contain about 400-550 times the amount of information found in the PIW [Publicly Indexable Web]" (p. 250).The search interface and retrieval system of online indexes are also unique from Web search engines.

Conducting research using online indexes might be complex to entering freshman as well as junior or senior students, but it is important they understand how to conduct academic research using online indexes. Online search skills are an important aspect of conducting a search using different online indexes. Although each database has its unique features, the search strategy and search skills are similar and can be applied to different online indexes.

In this lesson we will introduce online search strategies and search skills using Academic Search Premier, a popular online index. The search features of EBSCO's online indexes are similar and students will learn different search strategies and will be able to apply these learning experiences to search other online indexes subscribed to by the Rosenthal Library. Academic Search Premier was chosen because it provides a wide range of publications including magazines, scholarly periodicals, book reviews, and reports/documents in the discipline of humanities, sciences, and social sciences. Academic Search Premier provides a rich collection of resources and indexes almost totaling 8,000 titles (Cassell & Hiremath, 2006, p. 138).

Setting the Instruction and Facilities:

This lesson plan is designed for an academic library, much like the Benjamin S. Rosenthal Library at Queens College. The Rosenthal services a diverse student body comprised of an array of ethnicities. However, the library is also used by the community and local high school students. For this lesson, each student requires computer access; therefore, the class will take place in the library's computer lab classroom, or operating room. The classroom contains a smart board so that instructors can integrate the use of this visual tool to teach online index searches. The smart board will be "hooked up" to the instructor's computer which will be in the center of the room; the student computers will be organized in a "U" shape around the instructor's computer, so that instructors may monitor student screens and ensure every student is following along. The smart board should be the focal point of the classroom because of its size, but the instructional crux in reality is the instructor's computer.

Target Audience:

This lesson plan is designed to accompany the instruction that would transpire in an introductory, collegiate English class. Therefore, our audience is primarily between the ages of 17-20; they are freshmen students attending Queens College and registered for College Writing/English 110. The course's stated goal and teaching methods of research will contribute to this lesson's goal and objectives. As a whole, these students are computer literate but mistake the work done by search engines with the work done by online indexes. For the most part, these students are motivated to learn, despite requiring simulations and practice-heavy information literacy instructional sessions.

Needs Assessment:

Needs Assessment is an important step for the planning of information literacy instruction. According to Grassian & Kaplowitz(2001), "A Needs Assessment consists of two equally important parts –what needs to be done and what actually can be done" (p. 135). Instructors need to gather information about the target audience and their needs for the progress of academic research. In order to find out correct data about the student population we have looked at the course catalog and met with the faculty members in the English department.

It is only logical that faculty members feel that students should receive library instructions and to learn how to use online indexes to conduct research. At this point, we have decided that teaching online search strategies and search skills using Academic Search Premier would be the right choice for this lesson because it covers general areas of academic research and it is inter-disciplinary. As they learn online

search strategies from this instruction, they will be able to apply those skills to use other online indexes because other online indexes have similar search options and features. Instruction will be in-class and utilize methods of active learning. Each student will have computer access and will be engaged in group work, individual searching, and some worksheet activity.

Learning Goal:

The goal of this lesson is to teach students the difference between Subject Term and Keyword searches. Students will learn how to find Subject Terms in Academic Search Premier; they will also experience first-hand the advantages associated with Subject Term searching. In addition, we seek to familiarize students with basic search features like search limiters that will help narrow the volume of articles they retrieve. We have incorporated this goal and accompanying objectives according to the Association of College and Research Libraries' Information Literacy Competency Standards for Higher Education.

Learning Objectives:

1. Students should be able to use the Subject Terms function to locate the Subject Terms associated with their topic.
2. Students should be able to understand the difference between Keyword and Subject Term searching.
3. Students should be able to utilize limiters to narrow the volume of articles they retrieve.
4. Students should be able to define the "deep Web" and explain the advantages of using Subject Term searching when using online indexes.

Description of Learning Activity:

The impetus for our bibliographic lesson plan is attributable to our experiences facilitating synchronous bibliographic instruction at the collegiate level. In the fall of 2008, Zinnat and I worked as information assistants at the Rosenthal Library of Queens College. And, we are both still employed as information professionals, although I work at a different C.U.N.Y. library (Bronx CC instead of Queens College). In addition, we have worked as high school teachers as well; so, we chose goals and objectives that were elemental and modular so that we could readily adjust the difficulty and scope of our endeavors.

From our experiences, we have noticed that one of the largest obstacles that incoming students face is their ignorance of online indexes, and their overuse of search engines. 17-20 year olds run to Google or Yahoo for all their reference needs, despite the pedigree or origin of their queries. In high school general knowledge of a topic is acceptable, but once you become a collegiate scholar greater emphasis is placed on specific subject knowledge. A collegiate scholar is expected to plunge into research with great exuberance and little restraint, but if they rely on search engines to find information, almost instantly they become inundated with information.

The reality is that most college freshmen come to College without a proper foundation in research strategies from their high school classes. As a result, they believe that all their information needs can be satisfied by search engines and condition them selves to interact with online indexes sparingly, despite a bevy of access options. Colleges spend a great deal of their operating budgets on database subscriptions, so it is in the best interest of their academic libraries to condition students to utilize, engage

with, and rely on online indexes for all their information needs. Also, most academic libraries subscribe to an assortment of specialized online indexes like African-American History Online; these subject online indexes are extremely current and offer encyclopedia-style articles written by experts.

We thought having one bibliographic lessons would orient students (or at least surreptitiously condition them) and possibly entice their curiosity. We thought that having a 90 mins. lesson would be ideal; the lessons we designed don't take 90 mins to "teach," but the left-over time gives technologically-impaired and late students time to catch up. It was our primary aim for students to obtain a conceptual understanding of online indexes so that they can apply that knowledge and use any database that utilizes a controlled vocabulary. A secondary concern was introducing students to the concept of the "deep Web." We strove to make the correlation between the wealth of resources in the "deep Web" and the accuracy of online indexes; whether students understand that association has to do with how they answer question #7 on their exit assessment. Moreover, we sought to increase student familiarity with online indexes, and prove the utility of online indexes to students so that they may take full advantage of the service.

Timing and Explanation of Activity:

This lesson in online indexes was designed to take place in one 90 minute session. We strove to incorporate active learning techniques into our lesson and present students with ample opportunity to simulate the experience of conducting a search. The emphasis of this lesson is on the distinction between Subject Term searching and Keyword searching when using an online index. The lesson concludes with an article concerning the "deep Web" as a form of assessment; the article can be

followed up by an asynchronous, seven-question, fill-in-the-answer quiz that students take as part of their exit protocol. The important thing is that students realize the connection between the precision of Subject Term searching and the wealth of resources available beyond the surface Web.

As students enter the computer lab they notice there are approximately 25 computers. They should encounter four to five aims written on the board; these aims are expressed as questions and give students an idea of what is going to be discussed today. Then, the teacher asks them to open either an Internet Explorer or Mozilla Firefox internet browser window. The instructor then illustrates for students how to navigate through the Queens College homepage to the Library's website. Once there, the instructor shows students ho to access Academic Search Premier. Students are then prompted to read the description for this online index, and asked to ascertain the scope of an online index like A.S.P. Last, students are directed to double-click on the A.S.P. and "open" the online index.

Students are prompted to open a new tab on the browser they are running and asked to copy and paste the URL of the first tab into the URL box of the second tab. They are asked to do this with the Quick Key Commands, or taught if they have never used Quick Keys. In effect, students have two open A.S.P. online index homepages. This is all preparation for the main demonstration in which students conduct the same search (Tattoos) using different modes (Subject Term vs. Keyword). The objective is to illustrate to students that Subject Term searching is more precise and accurate, despite the reductions one can achieve with limiters.

Then, the instructor finds the Subject Term button at the top of the Advanced Search page and prompts the Subject Term function to find the Subject Terms for tattoos. The instructor higlights the term suggested, Tattooing, and copies it by pressing Ctrl and C; then, the instructor scrolls up the page and finds the Advanced Search function and clicks it. The instructor then pastes the term, Tattooing, in the first box and selects Subject Term from the drop-down menu. Students should be following the instructor's actions, but remind them that the first A.S.P. tab conducts a Subject Terms search, and that they have to select Subject Term from the drop-down menu limiter the Advanced. Using Tattooing as a Subject Term retrieves about 953 results.

Students are prompted to open the second tab and click on the Advanced Search link. Then, the instructor finds the Advanced Search function and clicks it. The instructor then types the term, Tattoos, in the first box and leaves the default setting in the drop-down menu and presses Enter. Using Tattooing as a Keyword retrieves about 2891 results. If things are running smoothly, the instructor may want to ask students to calculate how long checking 2891 results would take if it took on average a minute to determine that an article was relevant. Last, the instructor will direct students to hit the back button once and fill in certain boxes in the Limit Your Results section. Students will restrict the date range (2008-2009 only), check the option that gives them only full-text articles, and select articles which are 5 pages or less long. Students will enter these criteria, press Enter and retrieve 112 articles.

We recommend the instructor engage in a dialogue here with students about limiters, and how they have allowed us to narrow our search from 2891 articles to 112. Then, the instructor will direct students to open their first tab and replicate the limiters

for the Subject Term search. After the class enters the same limiters that were applied to the Keyword search, they should retrieve 60 articles. Again, we recommend the instructor engage in a dialogue here with students about the fact that even though we narrowed the results of our Keyword search with limiters to 112, we retrieved almost half of that (60 articles) by narrowing our Subject Term search instead. This should instill enough confidence in students to conduct searches of their own.

Last, the instructor divides the class in half, having one half conduct Keyword searches and the other half conduct a Subject Term search; the objective of the practice will be to retrieve the least amount of articles. That is, students, working in pairs, must manipulate their search interfaces to obtain the least amount of articles. The instructor only facilitates this process and reminds the students doing the Subject Term search that they have to put the term through the Subject Term function to attain how A.P.S. has indexed that term. Students have 20 minutes, and the winners can be given nominal prizes like $5 Starbucks' gift cards. The students are then given an article by Reid Goldsborough titled "going beyond the Web's surface" and asked to read the article with their pens. Finally, students are asked to fill in the answers on the back of the article.

Assessment

As students read with their pens, tell them they should place emphasis on passages that talk about hidden or secret information. The instructor should give students a good ten minutes to read the article with their pens, especially if they are encouraging students to make text-to-self comments in the margins of the article. Then,

students will take a seven-question, fill-in-the-answer quiz. Our primary concern with the assessment was enlightening students about the Invisible Web; our secondary concern was having them correlate the wealth of resources in the "deep Web" and the accuracy of online indexes. Whether students understand that association has to do with how they answer question #7 on their exit assessment; therefore, we suggest that instructors assessing students on the content they have learned start with question #7 and then answer question #1, question #2, etc.

Conclusion:

Designing bibliographic lesson plan and delivering the instruction requires critical thinking, preparation, efforts, and collaboration with faculty members and library staff. Knowing the target audience and student learning needs are an essential part of delivering this instruction. Other pivotal elements for the bibliographic lesson plan are defined by goals and objectives; the interplay of these elements, along with an enthusiastic instructor, exemplifies how a successful bibliographic lesson can revolutionize the way a student thinks about their library and the retrieval of information.

Instructors need to be knowledgeable of teaching methodologies and students' learning styles. Since students learn better through active participation, we have designed this lesson plan accordingly. It is also important to assess student's learning outcomes. We have included a fill-in-the-blank worksheet activity to ensure we achieve this goal. We believe that students will greatly benefit from learning

search strategies associated with online indexes and effective retrieval techniques

from Academic Search Premier.

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Aim: What is an online index? What is the difference between Keyword and Subject Term searching? What are limiters? How do we use limiters to narrow research results? What is the deep Web? Is Academic Search Premier part of the surface Web or the deep Web?

Do Now (10 mins):

- Double click on the IE or Mozilla shortcuts on your desk top.

- Type in www.qc.cuny.edu in the URL box.

- Click on the **Library** tab on the left hand side of the page.

- Click on the **Find Databases** tab on the left hand side of the page.

- Scroll down to **Academic Search Premier** and read the description.

- Ask students to determine what kinds of articles they are going to find in this online index from the description they have read. (4 mins.)

- From what we have read, **what is the scope of A.S.P? What kinds of articles are you going to find in this online index?** (2 mins.)

Opening (7 mins.):

- Once in A.E.P., go to **File** and **Click on New Tab**

- Open a new browser tab.

- Click on the URL box so that the URL is highlighted (in blue)

- Press **Ctrl** first and then the letter **C** which will copy the URL

- Place the prompt in the URL box of the new tab

- Press **Ctrl** first and then the letter **V** which will paste the URL from the first tab into the URL box of the second tab

- We should now have exactly the same web page (A.E.P. home page) on two different tabs

Introduction (15 mins.)

- Using tab one's browser, proceed to the **Subject Terms button** in the top left-hand portion of the page and click it.

- Type in **tattoos** and press Enter

- The online index will inform you that there is no direct match; it will direct you to use **TATTOOING**; this is the **Subject Term**.

- Click on **Advanced Search**

- In the first box please type, Tattooing, and press Enter

- This should give you **953 results**.

- Using tab two's browser, proceed to the **Advanced Search button** under the main search box and click it

- Type in **Tattoos** and press Enter

- The online index will inform you that there are **2890 articles** when using the word **tattoos**; this is the default search mode which uses **Keyword searching**.

Why does Subject Term searching **retrieve less results** than Keyword searching? Is it more advantageous to use Subject Term searching **instead** of Keyword searching? What are the **advantages** of using **Subject Term** searching? (7 mins.)

Guided Practice (30 mins.):

- Now, let us concentrate on the tab that we asked to do the Keyword search **(tab two)**

- Hit the back button once so that we end up on the **Advanced Search screen**.

- Go to the **Published Date from** box and enter **2008** in one box and **2009** in the second box; this means that A.S.P. will only retrieve articles from 2008 to 2009.

- Click on **Full-Text** on the left-hand side; this means that A.S.P. will only retrieve articles in which you can read the whole article, etc.

- Go to the **Number of Pages** box and click on the drop-down menu

- Select appropriate choice (more than, **less than**) and the number of pages **(5);** this means that A.S.P. will only retrieve articles that are 5 pages or less. (7 mins.)

- After pressing Enter, students should retrieve 112 records. Discuss the ramifications of this in terms of saving time. (7 mins.)

- Ask students to proceed to tab one (Subject Term search) and carefully replicate the selection of limiters that they completed for the Keyword search. (2 mins.)

- After pressing Enter, students should retrieve 6o records. Discuss ramifications of this in terms of accuracy and relevancy. (7 mins.)

Independent Practice (30 mins.)

- I am going to assign you a number, **either #1 or #2**; the number that you have been assigned will determine which type of search you conduct.(2 mins.)

- The **#1s** are going to do **Keyword searching** and the **#2s** will be doing **Subject Term** searching.

- The objective is to retrieve the least amount of articles.

- The topic which you will be researching is **Immigration**

- You will need to use limiters and other features of A.S.P. to accomplish this task.

- You have 20 mins and may work in groups of two; if you are confused about how to start or need help, I will be circulating the room so please flag me down.

- The winner gets a $5 Starbucks' card.

Conclusion (20 mins):

- Please read article by Reid with your pen. As you read with your pen anytime there is a mention of secret information or hidden information I would like you to circle or underline the phrase or words.

- Please answer the questions on the back of the article.

Questions about Reid Goldsborough's article, "going beyond the Web's surface"

Name: _____Date:_____

1.) What is the deep Web?_____

_____

_____.

2.) Why can't search engines find info in databases?_____

_____

_____.

3.) How deeper is the deep Web than the surface Web?_____

_____

_____.

4.) What is an example of deep Web information?_____

_____

_____.

5.) What is Complete Planet?_____

_____

_____.

6.) What is infomine?_____

_____

_____.

7.) Is the information you encountered on Academic Search Premier part of the deep Web or the surface web?

_____

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_____.