Taking on a Research Project

Learning Objectives

Students will be able to…

- Understand the different steps involved in the research process
- Differentiate between background research and in-depth research
- Locate useful sources for conducting background research
- Utilize background research to help refine a paper topic
- Recognize how to begin a search
- Demonstrate ways to narrow a research topic
- Evaluate a topic and formulate a question
- Construct a strong thesis statement by narrowing and focusing a topic
- Formulate a thesis statement and develop a "working thesis"
- Develop an inquiry-based approach to solving problems
- Take an active role in their own learning
- Examine, deconstruct or parse the research question
- Find alternative keywords
- Understand research is a cyclical process, or iterative

Discussion Topics

Assignment Requirements

Using either a real assignment or an imaginary assignment, have the students discuss the assignment requirements. Have them brainstorm in small groups about potential "unwritten" requirements, such as the time spent on various assignment activities, preparation, background research for unfamiliar concepts, etc.

Focus on Learning New Skills

Information literacy requires us to learn new skills and technologies in order to access and share information. What technologies have students encountered or would like to learn more about when it comes to access, evaluation, and sharing information?

Activity Ideas

Information Log

Ask the student to record any piece of information he/she looked up (or wanted to look up) over the course of the day. Examples: What is being served at the cafeteria or café, how much something costs, when the next bus is scheduled to depart, or the due date of an assignment.

Alternatively, ask students to keep a log of questions asked by others. How do they respond to others' questions? How do they help others find information? These activities can also lead to research topics and discussions on the social nature of information. You can make concept map in large or small groups.

Research Project Plan

Have students create an overall plan and timeline for a research project. Have students outline the project and research process in a similar way as they would for a paper. Have students work in teams or small groups to choose and develop their topics, thesis statements, and research focus. Have students look at topic areas, subjects, aspects, etc. Have team members review topics and

brainstorm ideas, ways to narrow or expand topics, and potential problems with the topics. It can help to have others look at your topic. This can also help students "see" the topic selection process from a different angle.

In groups, have students brainstorm topic keywords, synonyms, and related terms. This works well with just paper and a pen, but it can also work with whiteboards or virtual spaces. Students can create mind maps of terms, with multiple students adding interpretations and observations.

Assignment Requirements

Using either a real assignment or an imaginary assignment, have the students discuss the assignment requirements. Have them brainstorm in small groups about potential "unwritten" requirements, such as the time spent on various assignment activities, preparation, background research for unfamiliar concepts, etc.

Using and Understanding Resources

<u>Learning Objectives</u>

Students will be able to…

- Search library resources by choosing keywords and putting them together to get accurate results
- Use different advanced searching options, including full-text searching, fielded searching, subject and thesaurus searching, truncation/wildcard, and limiting a search
- Understand how Google responds to your search inquiry and breaks down the components of a search results page
- Articulate the differences between books, periodicals, and websites and how to use each when conducting research
- Ask objective questions to evaluate the reliability of a source
- Identify bias within a source

- Recognize the importance of using reliable sources
- Determine an assignment's information need
- Locate different types of library databases
- Identify specific features of a database to determine if it meets your information need
- Find government information on various topics
- Find specific government publications or products
- Define primary, secondary, and tertiary sources, and give examples of each
- Define visual literacy
- Search, select, and evaluate images
- Understand the rights and restrictions of image use

Discussion Topics

Search Strategies

Have students discuss/brainstorm search strategies they use now. Focus on non-academic searching, like Google searches or how they search for fun or trivia-type topics. Have they seen patterns, discovered shortcuts, etc.? Have students discuss how they find peer-reviewed or scholarly items outside of the library. What are hindrances to this process (ex: paywalls)? Why might the library resources be better to use in these cases?

Iterative Nature of the Research Process

As a researcher uncovers information, he/she may need to revise the topic or repeat searches with updated search terms. As the researcher outlines the argument, he/she may identify additional aspects for investigation and research. Within a database, have students work in pairs to explore Boolean operators, search strings, limiters, etc. Have them make use of any Help features available. What helps, what seems too complicated to be useful, when might they use certain features, etc.?

Evaluating Information

A real world conversation about evaluation: examples could include medical topics, large purchases, news sources, social media, mockumentaries, gossip, etc. Ask students how they would go about evaluating information they find on Twitter, Facebook, or other social media options. Have students ever encountered a documentary or mockumentary? How did they tell the difference? Do students question news sources? Do they look at multiple sources of information when encountering a news story that catches their interests?

Evaluation Criteria

Discuss what authority means. Why do credentials or academic/research associations matter? What about the author's background and/or publication history? Does the publisher matter? Why or why not? This might be a good place to take a look at predatory publishers.

Website Evaluation

Discuss the differences among .edu, .com, .gov, .org, etc. Many students take these URL designations for granted and don't understand the importance or usefulness of these designations.

Accuracy

Can the information be verified via cited sources? Does it agree with other sources? If not, do students conduct more research? Has information about methodology been included? How much time do students put into determining accuracy? Are there time constraints? Are there shortcuts?

Currency

Is currency important for your subject/topic? Can you determine when the information was produced/published? If the information is dated, but otherwise good for your project, look for more recent work from the same author. Does the information need to be examined from a historical or cultural perspective?

Coverage

Is the scope appropriate for your topic? What is the focus? What information is included/excluded? If it describes research, is there information about the sample used in the research? Is the sample representative of the population?

Objectivity

What is the purpose of the work? Does the work offer facts, opinions, or a combination? What is the tone of the work? What assumptions does it make?

Audience

Is this a scholarly publication? Trade information? General? If it is a web page, is it part of a larger site? Is there an expectation of prior knowledge or assumptions?

Evaluating Non-Scholarly Sources

The same principles apply as scholarly sources, but with less emphasis on scholarly information requirement. For non-scholarly resources, make sure to understand the motivation of the information provider. Ask

questions and verify information across multiple resources.

Review the Library Website – Databases and Research Tools

Have students work in small groups/teams to review the library website and develop strategies for choosing a database and learn where to locate research guides, discipline-specific sources, library policies and login information, available software/computer labs, interlibrary loan, help, librarians, outside library sources suggested by librarians, etc.

Government Documents

Discuss government information sources with students and online options for government information access. Ask students if they've ever used government information, and how they've gone about finding it. What did they use the information for?

Primary and Secondary Sources

Have students brainstorm definitions of primary, secondary, and tertiary sources, providing clarification/corrections along the way. You may want to have examples available for visuals. In a general course, you may want to discuss the differences in primary and secondary sources by discipline. In a discipline-specific class, you may want to focus only on how primary and secondary sources are defined/used in that field.

Activity Ideas

Databases

Have students identify two or more databases or related tools. Students should write out their thesis, keywords, and synonyms. Have students search in a library database, catalog, or discovery tool and share observations. Compare this to search engines like Google. Have students explore similarities and differences in these tools.

Have students search for the same topic/subject in two databases. How did searching in each database work? Differences? Similarities? Search results? Numbers? Relevance? Was one a subject

specific database? Does that make a difference in search results? Have students present or write up a short report on their findings.

Real-Life Boolean Operators

Pick a topic and have students organize themselves into groups using Boolean operators (for example: students who are freshman AND biology majors, students who live in the dorms OR are seniors, students who like English but are NOT English majors). Then once the students are broken into groups have them pick a topic to search. Once they have their topic, students will work together to choose a database, search for articles on their topic, refine their results using specific parameters (for example: only articles from the last five years, only peer-reviewed articles, etc….), then students will use the thesaurus to look for different ways of wording their original keyword search. They will then search with their new keywords using the same limiters as before to their search results, and then compare the results from the two different searches.

Thesis Statements and Keywords

Create a set of imaginary thesis statements. Have students pick out keywords, develop a list of synonyms and related terms, and select a few databases appropriate for the topic. Have them provide reasoning behind their selections.

Have students search various keywords and synonyms in a library database and in Google. What did they discover about the importance of synonyms and multiple keywords in the databases? How about spelling in databases vs. Google?

Have students work in pairs. Have partners swap thesis statements. Students should create a list of keywords and synonyms for their partners, select a few appropriate databases or other resources, and locate at least one source for their partner's project. Have the student utilize the Send/Share function in a search tool to send their partner a link or copy of the source.

Evaluating a Source

Ask students to find two unacceptable sources on a topic relevant to an academic assignment, and one acceptable source. Ask the students to write a paragraph or essay describing the evaluation process, their observations, and decision for each of the three sources. If time permits, have students share reasons for finding a site unacceptable for an academic assignment.

Scavenger Hunt

Use the library's website and/or open web search engines. This can include activities such as citation "hopping" or "linking" in order to trace back sources.

Scavenger hunts can also be set up within the library building space using a theme or narrative: students as explorers, themes related to class subject/discipline, school history, local interests, etc. Scavenger hunts can focus on one department or area of the library, such as reference or periodicals.

Government Information Scavenger Hunt

Find government websites for a health statistic, a labor statistic, the text of a new law, a map used for environmental studies, tax help, a government-funded scientific study, a description of a veteran benefit, name of a high-ranking official in the military, a database, resources for teachers, and the most surprising thing the student found while browsing a government website.

Explore two government websites from different levels of the same geographic area (e.g., a town and a county, a county and a province, a town and a state). Find two pieces of information that are only available at the lower level, two pieces that are only available at the higher level, and two pieces that are available at both levels.

Have students look up statistics/census data about their hometown. What information is available via government sources? Have them compare their hometown information to their current/school residence.

Make students aware of really cool government sources by having them access and explore the USGS (explore local earthquake information, for example) site or NASA (Hubble). Have each student explore an interesting government source online and share their findings by presenting a brief demo/how-to to the class.

Primary and Secondary Sources Activities

One-minute writing assignment on common activity among the students (e.g., what students had for breakfast; campus or local event of which all the students would be aware) describing their experiences. Share the pieces with partners/small groups/class and then discuss how answers could be considered primary sources and how they could be converted into secondary sources.

Have students compare either two primary sources about the same event (Civil War diaries/letters, for example), or a primary and a secondary source about the same event. How did the student

determine if each piece was a primary or a secondary source? How do the pieces differ? What additional research questions does the student have after reading the pieces?

Have students look up statistics/census data about their hometown. What information is available via government sources? Have them compare their hometown information to their current/school residence.

Primary Research Activities

Has anyone done primary research? Have students share experiences about how experience was valuable and/or what they wish they knew at the beginning of the process. Students may have conducted interviews, created surveys, or worked in a lab. How do these experiences inform their assumptions about research? How do students view other research methods outside their chosen field?

Give students the same simple matrix of data and ask them to make up a story explaining the data. Have students compare their developed narratives and discuss any similarities or discrepancies in their understandings.

Visual Literacy Activities

Have students select, research, and present an image on a specific topic. Which search terms did the student use? Where did the student retrieve the image? What are the use restrictions associated with the image?

Have students evaluate their chosen image. Discuss the impact of image use rights on student's ability to use or share their chosen image.

Learning Objectives

Students will be able to…

- Identify why information literacy matters in the age of information
- Understand the new information landscape, and how it affects you during your academic, personal, and professional life
- Understand the importance of using citations, in order to write a successful research paper
- Define plagiarism and ethical behavior
- Recognize that acting with academic integrity stems from an understanding that information has value
- Appreciate scholarship an academic conversation
- Define copyright
- Understand the exceptions to copyright restrictions and know how to use different works ethically
- Understand what plagiarism is
- Understand the common types of plagiarism
- Understand how to avoid plagiarism
- Articulate what it means to be a digital citizen
- Develop an active membership in their own digital communities
- Demonstrate what it means to be a safe and responsible digital citizen
- Develop appropriate behavior online

Discussion Topics

Citations

Before discussing the nature of citations and references, ask the students to come up with definitions of these terms. What are their current views? Experiences? Assumptions?

Citations as puzzle pieces or clues in a mystery: If we view citations as part of the academic conversation, what part do they play?

How do citations/references help solve problems? How do they help when we're curious about a topic? How do citations help us prevent plagiarism? Is it just as simple as using in-text citations and reference lists, or is it more complex?

Why should we acknowledge others' work? Why is it important to forwarding research and various academic fields?

Citing Statistics: Why must statistics always have citations? Discuss the nature and creation of statistics. Citing statistics adds credibility and helps you avoid accusations of just making statistics up.

Citation generators and organization tools: Some professors don't allow use of these tools—why do you think that is? Why might some professors consider these tools cheating? How does this relate to technological literacy? What tools do students already use? What would they like to learn about or see in the future? Brainstorm the "perfect" citation tool. Discuss human and machine error when it comes to citations: the importance of double-checking!

Plagiarism

Begin your discussion by asking lead-in questions to gauge students' knowledge of plagiarism and its consequences. What do you think plagiarism is?

Can turning in previous work from another class be considered plagiarism? When is it okay to use other people's work without citing it? Is there a specific amount of work that can be used without recognition?

Take a minute to think about some examples or instances that could be considered plagiarism (e.g. copying work/paraphrasing ideas without giving credit, including switching around the order of words and arguments, to make the writing "differ" from the original work; taking individual credit for work

done by a group; using material quoted in one of the sources you found and citing it as if you read the entire work).

Academic Integrity

What is the University's policy on academic integrity? Take a moment to think about the five fundamental values (honesty, trust, fairness, respect, and responsibility). How do they fit into your academic career? What is academic dishonesty and what are the potential consequences?

Academic Dishonesty

What are some strategies that you find helpful to avoid committing plagiarism, even unintentionally? If you are ever in doubt about whether you should be citing a source or not, what is the best course of action to take? Do you know of any helpful resources to consult if this happens?

Activity Ideas

Citation Activities

Create a list of sources with improper citations. Have the students attempt to locate the sources. This should demonstrate to students how citations are used to track down sources and how frustrating it can be for their teachers and fellow researchers when they don't provide adequate citations. Examples to use here could include books with multiple editions or books with very generic titles.

Give students a few sources. Have them individually come up with a citation scheme for the items (how would they show someone else how to find the source). Have them work in a group or pairs comparing what they came up with. Do they notice patterns or lots of differences? Does this convey why standards are important?

Tracing sources: Give students a source and have them trace back the research using the source's references. Students can create a timeline as a visual representation. You can also have students trace back to a primary document.

Breaking citations down: Develop a list of citations. Break these citations down by components (author, date, publisher, title, etc). Type or write them down on larger pieces of construction paper, cardboard, etc. You can utilize a variety of colors, shapes, sizes. Have students work in groups to assemble the parts (you can use pinboards, a wall and tape, magnetic boards, etc). This can easily

be turned into a competitive game. It also leads to discussions on how/why students chose to assemble citations in a certain way and discussions on their reasoning for their mistakes.

Academic Integrity Activities

Ask students to search newspapers, online news outlets, or social media for an account of intentional or unintentional plagiarism. Ask students to share examples of particularly controversial cases or cases for which they have questions, and encourage class discussion about the consequences the students faced and plagiarism in general.

Present real-life scenarios where students might use work that is not their own. Discuss individually or in groups whether the particular instance constitutes plagiarism or is academically ethical.

Ask students what it means to be a digital citizen. Discuss strategies for respectful online communication and responsible dissemination of information.

Discuss the needs for education and free speech in regards to copyright. Have students imagine a scenario that they think might fit the fair use guidelines. Have them organize into teams or pairs and create a fair use checklist for their scenario. Meet back in a big group to present their findings and discuss.

Learning Objectives

Students will be able to…

- Identify the most common writing errors professors see, and avoid these errors in their own writing
- Demonstrate the benefits of organized note taking, and learn how to choose an effective and efficient note-taking style
- Successfully complete reading assignments
- Develop time management techniques that will help with academic success
- Define visual literacy
- Search, select, and evaluate images
- Understand the rights and restrictions of image use
- Identify the components of a pro/con debate
- Deliver arguments and counterarguments
- Present opinions while being respectful of other points of view

Discussion Topics

Student Study Habits

To begin your discussion, ask students questions about their current study habits:

- How much time before an exam should you begin studying?
- What do you think are good study habits? What about bad study habits?
- Why is recognizing and utilizing study skills important? What are the potential benefits?
- Are there any resources on campus that can help you develop your study skills?
- Take a minute to think about study strategies that you think could be beneficial to you.

Activity Ideas

Study Group Activity

Study groups can be an effective way for students to learn, but many students find them frustrating. Providing some guided practice and structure can help student study groups achieve success. Here are some tips to share with your students to help them study in groups.

- Provide organization by electing a group leader: This person's role is to keep the group focused, enforce the rules and expectations of the group, and monitor time.
- Set rules and expectations: The group should vote on a set of expectations for participation (e.g., group members who do not come prepared will be eliminated from the activity).
- Set goals for each study session: Group members should set an agenda for each study session to help them stay on track.
- Set time limits for each study session: A group study session should last no longer than 2 to 3 hours. Group members should minimize socializing during study time and stick to the agenda for that study session.
- Provide ideas for study group activities: Group members will take turns teaching each other topics from that session's agenda. Group members should come prepared with an outline and method of delivery: lecture, handouts, presentation, etc.

- Test your classmates: Group members will prepare questions that test the material. These questions can be drawn at random for other group members to answer. Instruct your students to go beyond just providing the correct answer, but explain why an answer is correct. The questions can be saved for a cumulative review or a "mock final" exam.
- Read your professor's mind: In this activity, group members can vote on the material they think is most likely to appear on an exam. This requires them to list and prioritize the material, and reinforces main ideas and concepts through discussion of what is most important.

Study Skills Assessment

Develop a study skills assessment for students that identifies their strengths and weaknesses in regards to studying. Student responses can be open ended, or graded on a rating scale to show an overall score. Asking questions related to the following categories may be useful to show students how they perform in certain areas of study skills.

- Class readings: I try to identify main ideas as I read: Always(3) Sometimes(2) Occasionally(1) Never(0)
- Note taking: I rewrite notes I took in class: Always(3) Sometimes(2) Occasionally(1) Never(0)
- Time management: I use "to-do lists" to keep track of everything I need to accomplish for my classes: Always(3) Sometimes(2) Occasionally(1) Never(0)
- Test preparation: I review homework and other assignments before a test: Always(3) Sometimes(2) Occasionally(1) Never(0)
- Concentration: I study in a quiet space with no distractions such as TV, music, or social diversions: Always(3) Sometimes(2) Occasionally(1) Never(0)

Pro/Con Debate Activity

Have students prepare for a mock debate by researching two sides of an issue. Ask students to draft their opening statements, a key argument, counterpoints, and a concluding statement. Giving students the chance to develop debate rules will help familiarize them with debate etiquette and actively participate in the process.