Welcome to the Advanced Research in Education presentation.

This library tutorial is aligned with the curriculum for ILD 625 and MAT 640 and meets the National University Library Information Literacy Standards for advanced research skills.

Some instructors require students to take the Advanced Research in Education Library Quiz. Skills tested there are covered by this presentation.
Thesis Organization

- **Chapter 1**: Introduction & Background
- **Chapter 2**: Review of the Literature
- **Chapter 3**: Methodology
- **Chapter 4**: Results
- **Chapter 5**: Conclusions & Recommendations

Theses and dissertations are traditionally organized into five chapters. This presentation focuses on the chapters that are supported by library research: Chapters 1 and 2.

Disclaimer: The terminology used in this presentation may vary slightly from that of your textbook and instructors, since there are often different ways to say the same thing. Your instructor is, of course, the expert and correct person to model your project after! Always check with them to verify you are on the right track.
The Library presentation is divided into 3 sections:

- **Background**—finding historical overview of your topic and definitions
- **Problem Statement**—identifying evidence for importance of the topic and developing research questions
- **Literature Review**—an analysis of research published in peer-reviewed journals for the answers to the research questions you’ve developed
Much of the introduction and first section of your project (or Chapter 1 in a thesis) is an overview of the topic based on its treatment within the discipline of education. This is the only portion of your paper that resembles a traditional term paper.

Terms are defined and the topic is explored in resources that provide an overview of the topic, such as handbooks and encyclopedias written for professionals in the field of education.

In the historical review, you will identify the beginning date of your topic and the historical trends and how the discipline has treated it. The historical chronology will be a major part of this section of your paper. It will identify research trends and issues. These issues become the questions that you identify as part of your problem statement. We will talk more about this in the next section of the presentation.

You will also discuss the various educational theories that relate to your topic and their influence in its development.

Your thesis statement and research questions are introduced and explored within the assumptions, limits and delimitations of your research plan.
When defining terms, it is best to use subject related dictionaries and handbooks so that your definitions are those of academicians and researchers in the field rather than general definitions for a lay person. Dictionaries are usually found in library reference collections. Remember, that some education terms overlap with other fields and their treatment of your topic might add additional insight into your research.

National University has a collection of education dictionaries in our print collections at the National University Library in San Diego. We also have been expanding our collection of online reference materials. The titles of all our electronic resources are listed in the Library Catalog, but it is often useful to browse the different e-book reference collections so that you may search for your terms rather than the more global search of “education and dictionary”.

When you look at the Library’s homepage and open E-BOOKS, you will see many different vendors listed. Here are some of the ones that focus on reference materials.
In most of this presentation, we will be using ADHD or attention-deficit/hyperactivity disorder, as our practice topic. Here is a definition from the *Dictionary of Psychology* which is part of the Oxford Reference online collection. I now have the “official” name of the disorder and a family of related disorders (hyperkinetic disorders).

Note the number of cross references provided to related terms.

This resource also provides information on how to cite the definition...

THINK ABOUT IT — Is this proper APA style formatting for a reference?

No, unfortunately not. You can tell because the author’s full name is spelled out and the publication date is not the second item. However, you do have all of the elements that you need to make a good APA style reference.
Dictionaries are great for definitions and very brief amounts of content. However, when you need to find historical information beyond a dictionary or your textbook, use subject-related handbooks and encyclopedias designed for practitioners in the field. This is my favorite way to capture the best overview of my topic.

National University Library in San Diego has a rich collection of print encyclopedias and handbooks for educators, as well as the growing collection of online reference materials. Here is a sampling of some of the titles.
This is a brief look at the entry (a full chapter) on “Attention Deficit” from the *Handbook of Clinical Child Psychology*. Not all reference works break out the content with headers like this one, but when they do, you have a real treasure to work with. Note the section on history of the topic.

The value of educational handbooks and specialized encyclopedias is that they concisely present trends and issues and chronology of how your topic is perceived within the field of education (psychology in this case). This is also a great way to begin to identify the key individuals who played an important role in the research on the topic. You will see their names over and over in your research as you begin your review of the literature.
This example shows that some reference sources focus on theories. I found this title by searching “(education or psychology) AND theories” in the Library Catalog. This source, does not include any theories that are a direct match with “attention deficit”; however, I was able to find a variety of theories that encompass my topic by looking at larger issues that surround it. Some of these theories shown here were suggested from article searches or as cross references once I began to look deeper.
When I was not finding theories that were specific to my topic in the reference source, I brainstormed some ideas in the article databases.

I tried a keyword search for **attention deficit hyperactivity disorder AND theor***

Note the use of the asterisk that allows variant forms of the root word: theory or theories or theoretical by using the asterisk after the first initial root of the word: theor.

In the first set of terms I found ADHD and Theories of Causation linked together. In the second set of terms, I liked the broader concept of behavior disorders and social learning theory.

Remember to use the database aids when focusing your searches. In EBSCO, you may browse thesaurus terms to see if other words or phrases are more specific to your needs. You may also use the subject terms listed, to limit your results to only articles within the terms that you select as subjects.

Now I am equipped to return to my reference work and try to find other theories that relate to ADHD.
Now is time for you to explore your topic in the e-book reference collections.

Pause this presentation and open a new browser window or tab. Go to the Library website and select e-books. Have fun and explore. Remember that not all of the e-book collections are limited to reference titles.
Part 2: Problem Statement

- Analyze the Research Topic
- Identify Problems and Issues (narrow topic)
- Develop Questions to be Discussed
- Establish Thesis Statement
- Limits

Explains purpose of investigation
Properly limited
Clear & unambiguous
Research questions or hypotheses stated

Still looking at the first section of your paper (Chapter 1), the problem statement or thesis is the key to your research that follows. The background information you’ve collected to this point will help you identify specific questions you want to explore and focus your questions on. The thesis statement that emerges is one that identifies the problem and suggests measurable solutions. At this point, you will also let the reader know what you will and will not cover, and identify information you assume that they know.
Once we have set the stage with background and historical issues and trends and defined our key words, we can now make the transition from a topic (which is generally what you write in a research paper) to an issues-based or problem-based question (also known as the thesis).

In my question, we have attention-deficit/hyperactivity disorder as the topic... now I’m trying to consider what is the problem that we really want to research?
Test your topic in the article databases to verify the depth of scholarly writing on your topic. Observing what other authors identify as key questions often helps you define the topic in terms of your needs.

The Library has many fine education-related databases. I have also listed some psychology databases because the field of psychology provides some great research that overlaps with education: mind, learning/cognition, motivation, behavior, etc.

For my topic, I have decided to explore ADHD and medications (still not a very specific or problem-based topic... but, that will come).
From the Library homepage, select ARTICLES. The Articles page has many options: general article databases that search all topics, specialized databases, and vendors that provide the opportunity to search many databases at once. Also on this page is more information about how to verify if articles are peer-reviewed by searching journal titles in periodical lists, as well as shortcuts to the APA guide.

EBSCO is my favorite provider of education research databases:

- **Academic Search Premier** is a general database that provides a rich collection of full-text peer reviewed journals for all subject areas, including education
- **Education Research Complete** obviously specializes in educational research journals
- **ERIC** in the last couple of years has begun to provide full text to journal articles and allow you to limit to peer-reviewed. Previously, it only provided full text to its “document” collection which has been put on microfilm. These documents include anything not published as a journal: research reports, complete books (when copyright is granted), and even student papers. For this class, you will need to limit your search to just the EJ or journal portion of the database.
- If you keep browsing down the list of databases, you will see some psychology titles that are also available:
  - *PsycARTICLES*
  - *Psychology and Behavioral Sciences Collection*
  - *PsycINFO*
This BASIC search in EBSCO looks for all peer-reviewed articles on my topic: attention-deficit/hyperactivity disorder. Note, that the search does not include the hyphen or forward slash that you often see when this is in print.

The BASIC search is looking for my terms in the citation’s title or the abstract or subject terms. If I want to expand my search to look for words within the full text of the article as in ProQuest’s basic search, then I would need to use the ADVANCED search feature.

Note too, that when I searched ERIC, that I limited the search to peer-reviewed and to just the EJs (journal articles).
I usually begin my search with the “Quick and Dirty”... I throw out keywords and see what kinds of articles I get back. I will also use Google for this sometimes. In this search, I broke down my topic into smaller units to make sure that I did not leave anything out. I searched (attention deficit OR hyperactivity OR ADHD) AND disorder AND medication. Remember that any database search that mixes AND & OR together needs to “nest”, or put into parenthesis, the synonyms that are linked with OR.

My results are huge... over 2500 peer-reviewed articles were retrieved. Notice that the word ‘treatment’ is at the top of the subject box on the left side. This tells me that this is a subject term used in some of the articles. If I click on this term, then I will limit my results to just the subset of articles that uses ‘treatment’ as a subject term.

In the first results, full text is available in three of the top four articles:
1. Linked to full text... EBSCO does not have the contract for the full text, but is able to link us to the article (either another database or a publisher site) that does have access.
2. The next two articles MAY have access. Use ‘Article Linker’ to see if it can find the article. One of these does open the full text article and the other does not.
3. The last example is one in which the PDF of the article is provided by EBSCO. PDF equals the picture image of the print article.

Sometimes finding the full text can be complicated, contact refdesk@nu.edu for help.
Using ‘treatment’ as a subject term, I now have 263 articles instead of the 2526 on the previous page. By looking at the thesaurus terms on the left, I again have other options that I might wish to add to my growing list of search synonyms. The next couple of slides will talk about other ways to track down relevant synonyms.

Two other ways to identify good synonyms for your topic are to:

- Browse the brief view of the articles to see how an article you like was indexed, or
- Use the SUBJECTS box at the top of the page to search thesauri available for each database you are searching.

By using the “language” of the database, you are able to focus your topic so that the articles you retrieve are more relevant.
In these examples, you can use thesaurus subject terms and the author suggested search terms to enhance your keyword searching. Again, you are using the language of the database mixed with the keywords that the author has provided.
Use the SUBJECT drop-down box at the top of the EBSCO search bar to pick a thesaurus and explore what search terms are most relevant for your topic. In this search, we’re able to see ‘BEHAVIOR disorders in children’, as well as ‘ATTENTION deficit’. It also tells you the terms that are not used as search terms, such as ‘ADHD’.
Okay, we’re ready to take a moment and practice. Pause this presentation and open a new browser window or tab.

Go to the Library website and search *Education Research Complete*. Open the thesaurus and browse for your topic. Now, begin an *ERIC* search and open the ERIC thesaurus. Compare the terms used in these two different tools.

Let us know if you hit a stumbling block.
Using the ADVANCED search feature helps to organize my terms. I now am able to incorporate some of the synonyms that looked promising from the thesaurus:

- In the first box—main topic: \textbf{(attention deficit OR hyperactivity OR ADHD) AND disorder}
- In the second box—secondary topic: \textbf{medication OR treatment OR drug therapy OR drugs} [Note: I am not using parentheses here because the box itself acts like a set of parenthesis and in this case, I am not mixing AND/OR as above]
- In the third box—population: \textbf{child* OR adolesc* OR teen* OR youth} [Note: asterisk is used to look for alternate endings to the root, thus expanding words I am willing to include. Child* becomes child, or children; adolesc* becomes adolescent or adolescence and so forth...]
- In the final box, I am asking that I retrieve articles that are specific to some to some of the more detailed areas related to questions I am developing as part of my thesis.

Notice that on the ADVANCED screen I can leave my terms in the basic “Select a Field” mode (title, abstract, subject terms) or pick a different field. For the first two sets, I already searched the thesaurus, so I know my words are subject terms... a very focused search.

In summary, start with the big picture then narrow your topic to more specific questions that you want answered.
Here are some of the questions that I have come up with that relate to my topic: attention-deficit/hyperactivity disorder and the treatment or medication.

• Is there a difference between children or adolescents and treatment?
• Is there a difference between boys and girls?
• How does medication effect classroom behavior?
• How does medication effect academic achievement?

With some research behind me, I can focus on these more specific research questions that I want my thesis/research project to address.

We all want to believe that our research will only take one brief search (if not in Google, then in one or two databases) to identify all of the key articles needed for a project. It’s a lovely fantasy!
Now that I have background information, have some searching done to get a feel for the research that’s been done already on my topic, and have some questions identified on how I want to focus my research, I can now formulate the first draft of my thesis statement. It should identify a problem (or issue) and an outcome that can be measured or critically analyzed using metacognition.

Here is my initial draft... Studies of drug therapy to treat ADHD in children and adolescents showed marked improvement in classroom behavior but indicated little improvement in overall academic achievement.
The last thing we will touch on in Chapter 1 of the thesis are the limits and parameters of the research your project will cover. These will be reflected in your thesis statement and research questions. The limits help keep your project focused when you move on to the review of the literature. If the articles you find do not directly answer your research questions or fit within the parameters you have set, then you’ll need to let them rest for other projects. Walk away from the article!

In my experience, it is this shift to analyzing a problem-based topic in terms of results and outcome-based thinking that moves your project from a typical “tell all” term paper to a true thesis with a defined focus and measurable outcomes.
The final section of this presentation focuses on the review of the literature or a Chapter 2 of a thesis or dissertation.

Basically, the literature review is an analysis or critique of key articles published in peer reviewed journals in which the author discusses his/her research. Any other articles you find (secondary or non-research-based) need to be used elsewhere, not in this section of the paper.
Begin your article database research by limiting the results to peer reviewed.
Peer reviewed (or sometimes referred to as refereed) articles are ones that go through a review process prior to being accepted for publication. The “peers” are the experts, scholars and researchers actively involved in the discipline. The backside of the library flyer shown here gives examples from two reference sources that give detailed publishing information for journals:

- **Serials Directory** is available on the EBSCO list of databases and includes all titles they index.
- **Ulrich’s Periodical Directory** is an international directory of journals and magazines. Look for the “refereed” icon that looks like an referee’s shirt as a quick visual clue for whether the title is peer-reviewed or not.
When looking for research-based articles that are specific to your research questions, use the language of research to retrieve the level of article you want as one of your search concepts.

It is always helpful to see if someone has published a review of the literature as a starting point for your own literature review. It saves you time to build on what has been done before.

Think about it: Can you include a literature review in your own literature review? Yes???? No???? Well, it depends.

If the literature review in itself is a qualitative meta-analysis, then it might qualify as an author’s original research. However, most of the time, the published literature review is considered secondary and you need to find the research articles discussed and use the original sources for your own literature review.

If you have questions whether something may be used, discuss it with your instructor.
Here is the citation and abstract of a literature review from my search. In the abstract, I find some great clues: narrowed focus, theoretical models, future research. Anytime you can find articles that show gaps in research or notes for future research, they are a great indicator of how you may wish to narrow your focus to find a fresh niche for your ideas.
ProQuest’s Dissertations and Theses database is a collection of dissertations and theses submitted to universities. The value of searching this rich collection of research is that every document you find will have a Chapter 2 Literature Review.

Analyzing your search results and the Chapter 2 references will:
1. Help you quickly see research trends in the field
2. Help you identify top researchers and authors for you to track down

Check with your instructor to see if dissertations may be used in your own literature review. There is no peer review process, but dissertations go through a very thorough committee process before a dissertation is approved.
I like to look for visual clues when I look at an article to help me quickly decide if it might be peer reviewed.

- Does the abstract talk about how the author gathered and analyzed the research?
- Is the article organized in APA style with headers? If so, do you see METHODS, DATA, or RESULTS?
- Does the article contain a robust bibliography or reference list?

If the answer is yes to the above, then the chances are good that you have a peer reviewed journal. To verify, use one of the periodical directories or ask your instructor.
This example uses snippets from the article to show the various headers you can expect to see in a peer reviewed journal.

Use the articles listed in the REFERENCE list to find other research focused on your topic. This trailing of used references often helps you to find articles that research similar threads of thought or perspectives.
This reference is from the search results that we just looked at. How do you know if the National University Library contains the article needed from the author’s reference list? In this case, the *Journal of Abnormal Psychology*.

Use the “Three Click Rule”.

By searching the journal title (not the article title) in the Library Catalog, you will see if the article is available (online, in our print collections, or from another library). Once you determine which database provides the full text:

1. Select the year of the article you need
2. Select the issue of the article you need (this may be an exercise in guessing since many journal citations do not include the issue number or the month)
3. From the table of contents, open the full text of the article

If the Library Catalog sends you to a publisher site or a secondary source besides our standard databases, you may have to look closely at the page to find the content you need for archival issues. ...Hence the RATS Rule: Read All The Screen
This is a sample of the same search showing the Catalog search box in the BROWSE mode and the notes that the article is available both in print/microform at the Library and available online.

If the date you want is not online, but owned in the Library, you have the option at the top of the Catalog page of clicking on “Journal Direct” to find the request form. We will process the request and send you an electronic copy in 24 hours free.

If this journal was not available full text online or in our print collections, you have the option at the top of the Catalog page of clicking on “Interlibrary Loan” to find the request form. We will send your request to other libraries that own the journal for the dates you need. We do not have control over how quickly they respond, so request early!
Even though we are not the Writing Center, I have thrown in a couple of writing style reminders about how thesis (or research project) language is more formal than usual term papers. Write in the third person using the past tense. And, be aware of APA and follow it carefully.
Use your critical thinking skills to make sure that you are using the best, most focused, most relevant sources... not just using the first 5 articles that popped up in your literature search:

• **Author**: What else has the author written? Where does he publish? Is he referenced by other researchers?

• **Currency**: Is the research current? If not, is it a seminal work or key to the development of research in the field?

• **Bias**: All articles have some bias. Is the bias of this article too blatant or distracting? Can you use it if you acknowledge the perspective from which the author is coming from?

• **Relevance** (my most troubling issue): Does the article clearly fit one of the research questions and your thesis? If not, save it for another time and don’t use in this paper. It may side track the focus you are trying to establish. I personally hate to give up articles that I find that are interesting, but I have keep the purpose of the paper in mind and only use articles that directly enhance the thesis.

• **Accuracy/Reliability**: If an articles feels “wrong” it may be. See what others in the field say about it. However, by using articles published in peer-reviewed journals, you have the satisfaction of knowing that it has already passed the judgment of experts in the field. This is not something available when searching for articles on the Internet.

• **Credit Sources**: Be careful to cite your references accurately so that you give credit to the intellectual property of others and make it easy for your readers to find your sources for themselves.
This completes our Advanced Research in Education presentation.

I am Barbara Stillwell, Liaison for the School of Education. Please let me know if I can help you with your research.