

Questions and Answers About WWC Literature Searches Using ERIC

The purpose of this document is to provide answers to questions submitted before and during the What Works Clearinghouse (WWC) technical assistance webinar “WWC Literature Searches Using ERIC.” The webinar was hosted on September 29, 2021.

This document is meant to serve as a companion to the webinar slide deck and [webinar recording](#). We combined similar questions and rephrased other questions for clarity while preserving the meaning of the original questions. If additional questions arise, please contact the WWC Help Desk at <https://ies.ed.gov/ncee/wwc/help>.

WWC and General Searching

1. **Are there any go-to resources to identify specific best practices (as opposed to searching and reading articles in many journals or databases.)?**

WWC is designed to provide the public with summaries of evidence for programs, products, practices, and policies in education so that you do not have to do your own literature searches, which could be time consuming. WWC’s website, thus, is a good first stop if you are looking to identify best practices in a given topic area. You can access the main WWC website at whatworks.ed.gov.

2. **What is forward citation searching?**

Forward citation searching refers to the process of identifying research literature by systematically searching for records that cite a particular research study. For instance, if you locate a research study of interest within Google Scholar, you can use the “Cited by” link to review the citations of all subsequent articles that have since cited that original article of interest. This type of forward citation searching is available in many other databases, including Web of Science, and is a useful method for identifying gray literature.

3. **Does WWC use gray literature in synthesis products, and how can I find unpublished research to include in my meta-analysis?**

WWC searches for and includes gray literature in its research synthesis products, if that gray literature is publicly available—meaning it can be accessed on a public website or through a publication. There are many ways you can find gray literature to include in your own meta-analysis, but relevant sources for that gray literature will depend on your

research topic of interest. Many databases, such as ERIC, include gray literature. Other databases, such as ProQuest Dissertations and Theses Global, comprise entirely gray literature. Additional places to search for gray literature include websites of research firms or organizations, websites of research funders, or websites of other relevant academic research units. Still other options for identifying gray literature include conducting forward citation searches or reference list reviews of relevant articles, as well as reviewing the reference sections of prior reviews on the topic.

4. How should a researcher think about adding exclusion terms to one’s search strategy?

Many electronic databases offer functionality to include Boolean operators, such as “NOT,” which will exclude from the search results any records using that term. These exclusion operators can be useful when conducting searches that aim for a high degree of specificity—in other words, minimizing false positives. However, in systematic searches that aim for a high degree of sensitivity (i.e., searches that attempt to identify all potentially relevant research), exclusion terms should be used only when you are confident that they will not result in the inadvertent loss of potentially relevant research.

5. What is a controlled vocabulary?

Controlled vocabulary refers to the set of standardized subject headings used by database indexers to describe what a given record is about. Depending on the database, these subject headings might be called descriptors, system keywords, subject terms, or even preferred terms. Typically, there is a primary, preferred term represented in a database’s controlled vocabulary, which then includes a list of alternative phrases or synonyms that refer to the same concept. For instance, in the demonstration portion of this webinar, the term “early literacy” was found to be listed as a controlled vocabulary term under the preferred term of “emergent literacy” within the ERIC database.

6. Should the keyword search be conducted in one sitting, or can the search span a few days?

When conducting a systematic literature search, sometimes it will not be possible to search all relevant databases in a single sitting or on a single day. In those instances, it is acceptable for these searches to be conducted on different dates. However, in the interest of transparency and reproducibility, it will be important to document the search date for each source (whether the search dates are the same for all sources or different for different sources).

7. What type of reference management software should be used in a systematic search, and what software is most useful for handling duplicate records?

There are many different reference management software programs available for these purposes—some of these programs are free, and other programs require a subscription. Although WWC does not endorse a particular citation management software, Zotero and EndNote are commonly used tools that are easy to use and include functionality for maintaining group libraries for an entire research team to access, as well as functionality to easily import records from electronic bibliographic databases. Both reference management software programs also have built-in functionality to help manage the de-duplication process for identifying and merging duplicate records that may have been identified when searching multiple databases. Other reference management software that may be of interest, based on your unique needs, could include RefWorks, Papers, or Mendeley.

8. Can the Boolean operator logic for searching for literature be applied in some of the new preprint databases where researchers are archiving their preprints?

Preprint databases are excellent sources for identifying gray literature and other publicly available research that might not otherwise be located in an electronic bibliographic database. Some of these preprint databases will permit complex search strings using Boolean operators, but other databases may not. As noted in the webinar, it is important to check the documentation and/or users guide for any electronic database prior to searching, to ensure any Boolean operators included in your search terms are implemented as intended.

ERIC

9. What are the advantages of using ERIC compared to other databases?

ERIC is a large, well-known, and heavily searched database of education research sponsored by the Institute of Education Sciences (IES). With 1.8 million resources to select from, ERIC continuously adds new research to the collection at a rate of about 4,000 new records per month. There are more than 450,000 free, full-text resources in ERIC. Access to full text is not only convenient for users but also beneficial to users who may not have access to other databases or funds to pay for on-demand articles. One of the hallmarks of ERIC is its collection of gray literature, such as government documents, white papers, conference papers, and other research materials that are not found in most other databases. ERIC also includes a collection of historical records dating back as far as 1907 from the U.S. Department of Education's predecessor agencies (e.g., Bureau of Education, Department of the Interior) for users conducting historical research.

In addition, third-party vendors, for example, EBSCO, ProQuest, and OCLC, provide access to the ERIC database. The federally funded version of the database at <https://eric.ed.gov> is free, whereas access to some third-party databases is subscription based. Additionally, ERIC provides the most up-to-date version of the database, and other providers obtain the ERIC metadata from the federally funded website on a periodic basis. IES is not involved with the download schedules of third-party providers, and some providers may update their ERIC data more frequently than other providers.

The ERIC search feature provides a variety of useful tools, including the ERIC thesaurus and an application programming interface (API) to support online research. ERIC search is designed to support all users, which means that it is easy to understand for new users but also includes advanced search options that more experienced researchers may need.

For more information, see the video *How Is the IES Version of ERIC Different From Other Access Options* in the ERIC Multimedia area: <https://eric.ed.gov/?multimedia-basics>.

10. How can I count the number of duplicate articles identified in my ERIC search?

There should be only one type of duplicate record in ERIC, which is grantee research that is indexed from a journal and is available as a Grantee Submission. Grantees are required to make their full text available in ERIC per the IES Public Access Policy. If the journal does not agree to release the full text of the article for the author, then the journal record displays in ERIC as a bibliographic record, and the grantee must submit its manuscript to ERIC to be indexed as a Grantee Submission. Grantee submissions provided to ERIC through the online submission system are indexed, but the full text is under a one-year embargo, after which it is made available in ERIC. The records would have the same title and different ERIC numbers. In the source field, you would see “Grantee Submission” for the non-journal version of the record and the journal name for the journal article.

With that said, there still could be an occasional duplicate in ERIC caused by nuances in the title. Such a duplication would be a rare occurrence, but it is still possible. To find these records, export the search results to a spreadsheet, sort on title, and look for the same title with a minor variation.

One other instance when you may have duplicate articles is if you are running multiple searches in ERIC and exporting the results from all those searches to a spreadsheet or other software for analysis. If you pick up some of the same records from multiple searches, you can identify them by sorting your spreadsheet entries by ERIC number. Then you can identify the duplicates and eliminate all but one of them. You might also

consider using a reference management software program to assist in de-duplication (as noted in question 7 of this Questions and Answers document).

11. How can I find documents in ERIC in languages other than English?

ERIC is an English language database, but it does include some records that have text in both English and another language. Some, if not most, of these records have an English translation, with the original text in a language other than English. It is possible to search using the language field. To find records in French, for example, search language “French,” then click on the Publication Type “Bilingual/Multilingual” to limit your results to only materials available in multiple languages. You can see in the language field of the records that the material is written in French and English.

12. What is the advantage of using the ERIC API versus the standard search functionality? Does either interface allow combining sets or lines of searches?

The primary advantage of using the ERIC API is having the ability to export and manipulate the data from your search, as demonstrated during the webinar. The API allows users to export search results to XML, JSON, or CSV formats. You can also select the fields you wish to download or use the API default fields that include ERIC’s most frequently used fields. There are 12 frequently used fields that are described in the API documentation at https://eric.ed.gov/?api#/default/get_eric. API functionality can be expanded by using it in conjunction with a programming language that makes http calls, such as Python and other programming languages. You can also integrate the API with a tool, such as a Jupyter Notebook, that provides a description of your session, including a record of the code that was used. The API does not allow users to combine sets or lines of searches.

13. Within the ERIC database, can I use more than one descriptor at the same time within a search string? And if I select multiple descriptors to include, either as search terms via the thesaurus or by using them to filter after I do a keyword search, will the descriptors be searched as “OR” or as “AND”?

You can select more than one descriptor to use within a search string. The ERIC search feature automatically places AND between the individual descriptors (and other terms). The AND operator will return records with both descriptors (or terms) in the record, although the terms may not necessarily be together in the text. Using parentheses to denote a phrase can help. You can also manually change the default to OR, if preferred.

- 14. Can the search be restricted to identify records published or available within ERIC after a specific date, for example, any new records since October 10, 2021? Is there a way to sort the displayed results by publication date?**

At this time, there is no way to search for new records added to the collection after a specific date. It is possible to customize a publication date range search within ERIC using the `pubyearmin` and `pubyearmax` limiters. The filters work for publication year and not specific days or months. To sort results by publication date, use the ERIC API to search and then export the retrieved records to a spreadsheet and sort. See ERIC's Advanced Search Tips and API documentation for additional guidance:

<https://eric.ed.gov/?advanced> and <https://eric.ed.gov/?api>.

- 15. Is search history in ERIC available for documentation?**

At this time, there is no option for automatically gathering and collecting search histories in the ERIC search feature. To do so, you can manually copy each search string from the search box or copy the URL to a document to maintain your search history.

- 16. Within ERIC, do descriptors or limits explode, for example, does limiting to United States also include individual states, or does descriptor or limit need to be checked individually?**

At this time, we do not have any of the controlled vocabulary or limits set up to conduct exploded searches. However, in the example you gave, one way to conduct that search is to use the NOT feature to exclude records that have the descriptor "foreign country." This is the current best option for returning only records that are about content in the United States. See ERIC's Advanced Search Tips for information about using the NOT operator in a search: <https://eric.ed.gov/?advanced>.

- 17. What is a *dead term*? I saw it as an option in the thesaurus page of ERIC.**

A dead term is no longer used as a descriptor, but it remains in the thesaurus to aid in searching older records. There are currently 133 dead terms in the thesaurus. See the ERIC Thesaurus Purpose and Scope statement here: <https://eric.ed.gov/?ti=all>.

Related Resources

In addition to the webinar and this Questions and Answers document, the following resources, which include resources shared in the chat box during the webinar, provide guidance about WWC, literature searches, and ERIC.

- *WWC Standards Handbook, Version 4.1:*
<https://ies.ed.gov/ncee/wwc/Docs/referenceresources/WWC-Standards-Handbook-v4-1-508.pdf>
- *WWC Procedures Handbook, Version 4.1:*
<https://ies.ed.gov/ncee/wwc/Docs/referenceresources/WWC-Procedures-Handbook-v4-1-508.pdf>
- *WWC Review Protocols:*
<https://ies.ed.gov/ncee/wwc/StudyFindings>
- *WWC Help Desk:*
<https://ies.ed.gov/ncee/wwc/Help>
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- Giustini, D. (2019). Retrieving grey literature, information, and data in the digital age. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *Handbook of research synthesis and meta-analysis* (3rd ed., pp. 101-128). Russell Sage Foundation.
- Glanville, J. (2019). Searching bibliographic databases. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *Handbook of research synthesis and meta-analysis* (3rd ed., pp. 73-100). Russell Sage Foundation.