WWC Systematic Literature Searches Using ERIC

Emily Tanner-Smith, Ph.D.
Thomson Professor, University of Oregon
What Works Clearinghouse

Bridget Thomas, Ph.D.
Quality Information Partners
ERIC
What Works Clearinghouse

Jeffrey Valentine, Ph.D.
Professor, University of Louisville
What Works Clearinghouse

IES Institute of Education Sciences

Presenters

Emily Tanner-Smith, Ph.D.
University of Oregon
What Works Clearinghouse

Bridget Thomas, Ph.D.
Quality Information Partners
ERIC
What Works Clearinghouse

Learning goals for this webinar

After this webinar, you will be able to do the following:

- Understand the principles underlying a systematic literature search.
- Describe the role of bibliographic databases when performing a systematic literature search.
- Understand the functionality and coverage of the ERIC database.
- Summarize how to use ERIC effectively for systematic literature searches.

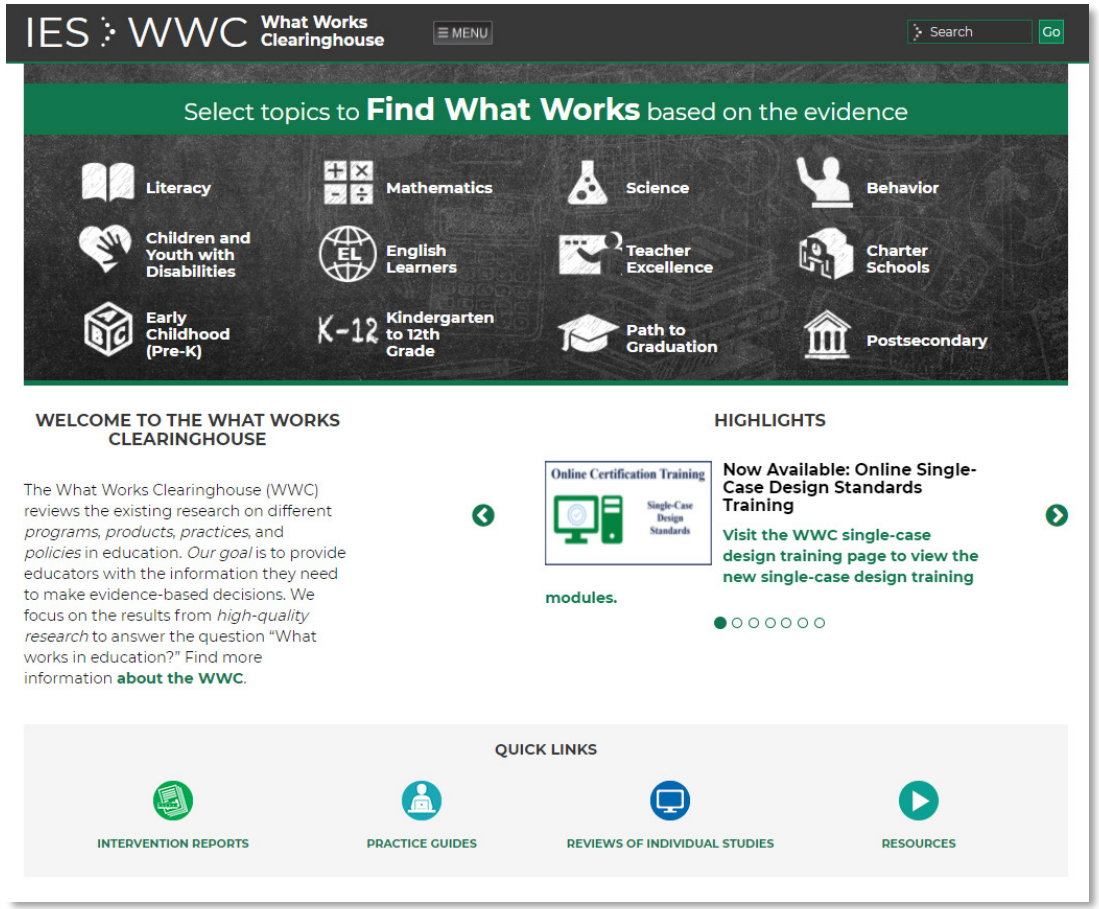
Systematic Literature Searching

Evidence-based decisionmaking in education

- Evidence-based decisionmaking in education requires knowledge of the best available research about the effectiveness of education products, programs, policies, and practices.
- Decisionmakers rarely have the time or resources to conduct their own reviews of the rapidly expanding and voluminous research literature.

Evidence-based decisionmaking in education

The **What Works Clearinghouse (WWC)** addresses this need by conducting systematic reviews of the existing research on education interventions, assessing the quality of this research evidence, and synthesizing findings from the highest quality evidence.



What is a systematic review?

- Systematic reviews summarize research evidence by using explicit and reproducible methods to identify, extract information from, and analyze evidence from relevant research studies.
- The WWC uses **consistent, objective, and transparent standards and procedures** to conduct comprehensive systematic reviews, using the following general process:
  1. Developing the review protocol.
  2. **Identifying relevant literature.**
  3. Screening studies.
  4. Reviewing studies.
  5. Reporting on findings.

Key searching principles

- Comprehensive coverage.
- Structured search strategies.
- Transparency.

Key searching principle: Comprehensive coverage

- **Electronic databases** include, for example, Academic Search Premier, CINAHL, EconLit, Education Research Complete, ERIC, International Bibliography of the Social Sciences, ProQuest Dissertations & Theses Global, APA PsycInfo, PubMed, MEDLINE, other specialized databases.

- **Other sources** include websites, conference proceedings, government/funder websites, forward citation searches, “hand” searches, and reference harvesting.

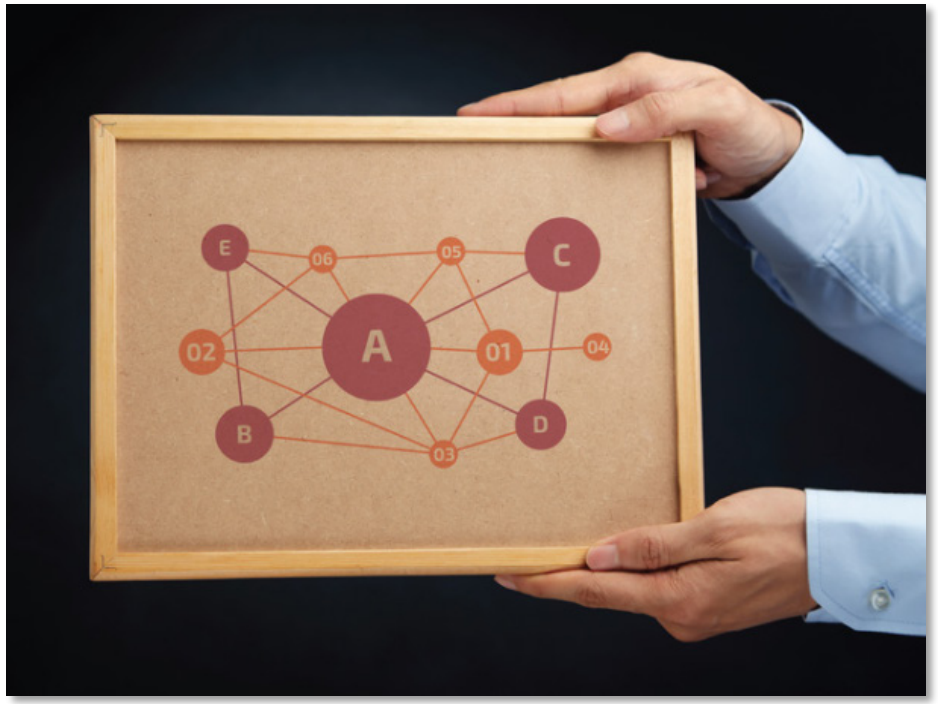
- Searches should be comprehensive, covering the wide range of databases, websites, and other sources where relevant research evidence may be reported.

Key searching principle: Structured search strategies

- Structured searches should be carefully constructed to facilitate the identification of all relevant research evidence.
- Most databases can be searched via specific fields (for example, the abstract, keywords, and/or controlled vocabulary terms).
- When developing search strings for databases, there is always a balance between specificity (narrow searches that minimize false positives) and sensitivity (broad searches that minimize false negatives).
- Many systematic reviews opt for more sensitive searches (i.e., broader searches), given the goal of identifying the entire body of research evidence relevant to the review question.

Identifying search terms

- The eligibility criteria specified in a systematic review protocol should define the key concepts relevant to the literature search.
- The goal is to identify the full range of synonyms for key concepts of interest.
  - How are similar concepts labeled differently in different disciplines?
  - How do the names of concepts change across time?
  - How do the names of concepts differ across states and regions?
  - Is the concept covered in a particular database by a controlled vocabulary. If so, what is the relevant descriptor?



Search string development

Compound search strings can be created by using operators and other special search characters that are database-specific (i.e., functionality varies across databases).

Common operators	Search for documents that . . .
AND	Contain all words or phrases
OR	Contain any of the words or phrases
NOT	Do not contain the word or phrases
NEAR/n	Contain both search terms located within *n* words apart
PRE/n	Contain one search term that appears within *n* words before a second search term

Common characters	Search for documents that . . .
?	Contain any character in search term (wildcard)
*	Contain any variation of the search term (truncation)
" "	Contain exact phrase within quotation marks

Search string development

Compound search strings can be created by using Boolean logic operators to combine relevant search terms derived from the review protocol or research question.

- Combine synonyms within a column with OR operator.
- Combine column block with AND operator.

Population	Intervention	Outcome	Study design

OR

AND

Search string example

Population	Intervention	Outcome	Study design
high school	summer bridge		random
grade 12	summer program		RCT
senior			

(“high school” OR “grade 12” OR senior) AND
(“summer bridge” OR “summer program”) AND
(random OR RCT)

Key searching principle: Transparency

Search details should be documented and reported on in a transparent manner to ensure reproducibility.

- Names of each database/source searched, and the host/platform used for access.
- Names of any study registries or supplemental sources searched.
- Date of last search for each source.
- Full search strategies for each literature source.
- Any limits or restrictions applied for each source (such as date or time period).
- Total number of records identified for each source.
- Process and software used to deduplicate records across multiple sources.

Using ERIC for Systematic Literature Searches

The ERIC database: More than 1.8 million resources

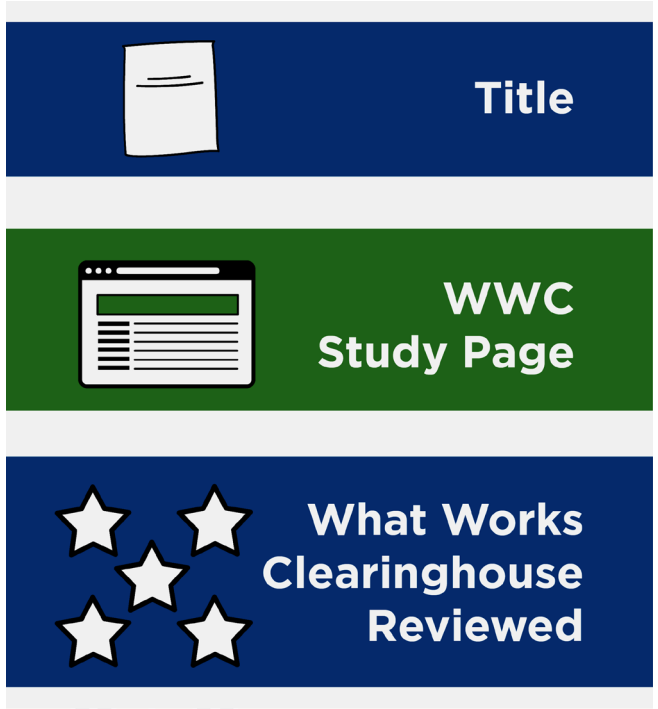
- 1,282 academic journals (1,271 peer reviewed).
- 740 nonjournal sources (98 peer reviewed).
  - Government documents.
  - White papers.
  - Conference papers.
  - Other research materials.

Overview of ERIC Search

- ERIC's intuitive search engine supports all users - advanced as well as novice
- Thesaurus descriptors help to zero in on relevant content
- Search filters narrow results (publication date, publication type, peer reviewed, etc.)
- ERIC provides options for advanced search techniques (e.g., searching specific fields, Boolean operators, etc.)

Records connect to What Works Clearinghouse information

- Relevant records are tagged with WWC ratings and linked to study pages on the WWC website



Using ERIC for systematic searches

https://eric.ed.gov/?q=early+literacy

ERIC

Notes FAQ Contact Us

Collection | Thesaurus

early literacy | Search | Advanced Search Tips

☐ Peer reviewed only ☐ Full text available on ERIC

Showing 1 to 15 of 10,475 results Save | Export

PUBLICATION DATE

In 2021	207
Since 2020	646
Since 2017 (last 5 years)	2086
Since 2012 (last 10 years)	4231
Since 2002 (last 20 years)	7446

DESCRIPTOR

Emergent Literacy	3682
Early Childhood Education	2649
Foreign Countries	2646
Literacy	2264
Teaching Methods	1814
Literacy Education	1739
Preschool Children	1646
Young Children	1625
Reading Instruction	1532
Kindergarten	1198
Reading Skills	1180

More ▼

SOURCE

ProQuest LLC	449
Journal of Early Childhood...	307
Early Child Development and...	242
Early Childhood Education	234

Early Literacy Research, 2006-2015: A Decade of Measured Progress
Teale, William H.; Whittingham, Colleen E.; Hoffman, Emily Brown – Journal of Early Childhood Literacy, 2020
This review examines patterns found in early (preschool-grade 3) literacy research appearing in English-language publications during the period from 2006 through 2015. It focuses on studies related to early literacy learning and teaching in home and school/school-like environments. The review sought to answer two questions: (1) What has early...
Descriptors: Early Reading, Emergent Literacy, Educational Research, Phonics
Peer reviewed
Direct link

Systematic Review of English Early Literacy Interventions for Children Who Are Dual Language Learners
Hur, Jin Hee; Snyder, Patricia; Reichow, Brian – Topics in Early Childhood Special Education, 2020
Children who are dual language learners (DLLs) often have more difficulty acquiring English early literacy skills than their English monolingual peers. Much remains to be learned about efficacious early literacy instructional interventions and their effects on English early literacy skills of DLLs. The purposes of this systematic review were to...
Descriptors: Early Intervention, Bilingualism, English Language Learners, Literacy
Peer reviewed
Direct link

Comprehensive Early Literacy: Model Policy, ExcelinEd Policy Toolkit - 2020
Foundation for Excellence in Education, 2020
This model policy creates a comprehensive early literacy reading policy to ensure all students receive the support and interventions necessary to enter fourth grade as proficient readers.
Descriptors: Emergent Literacy, Educational Policy, Models, Reading Instruction
Download full text

Early Literacy Materials and Teacher Practices in Preschool Classrooms = Okul öncesi siniflarindaki erken okuryazarlik materyalleri ve öğretmen uygulamalari

ERIC Thesaurus descriptors help find relevant content

DESCRIPTOR	
Emergent Literacy	3711
Foreign Countries	2677
Early Childhood Education	2671
Literacy	2277
Teaching Methods	1835
Literacy Education	1768
Preschool Children	1670
Young Children	1634
Reading Instruction	1539
Kindergarten	1213
Preschool Education	1188
More ▼	

https://eric.ed.gov/?qt=emergent+literacy&ti=Emergent+Literacy

ERIC

Collection | Thesaurus

emergent literacy | Search | Browse Thesaurus

Include Synonyms | Include Dead terms

Notes | FAQ | Contact Us

Back to Search Results

Emergent Literacy

Scope Note: The early stages of learning to read and write -- an increasing awareness of the print world, usually associated with young learners observing and experimenting with reading and writing processes (Note: In the 1980s, the emergent literacy perspective was a departure from the more traditional stage view of reading/writing readiness followed by formal learning)

Category: Reading

Search collection using this descriptor

Broader Terms
Literacy

Narrower Terms
N/A

Use this term instead of
Early Literacy

Related Terms
Beginning Reading
Beginning Writing
Childrens Writing
Early Reading
Family Literacy
Invented Spelling
Reading Instruction
Writing Instruction

Added to ERIC: 3/29/1996

ED.gov | ies INSTITUTE OF EDUCATION SCIENCES

Privacy | Copyright | Contact Us | Selection Policy | API
Journals | Non-Journals | Download | Submit | Multimedia | Widget

Narrowing your results with search limiters

- Initial Limiters
  - Publication date: Within the last ten years
  - Publication type: Journal articles
  - Peer review: Peer reviewed only

Other key limiters

SOURCE	
Journal of Early Childhood...	199
Early Childhood Education...	115
Early Child Development and...	114
Early Education and...	102
Reading and Writing: An...	76
Reading Teacher	55
Grantee Submission	43
International Journal of...	32
Journal of Research in...	32
European Early Childhood...	31
Journal of Educational...	30
More ▼	

AUTHOR	
Justice, Laura M.	36
Neumann, Michelle M.	22
Lonigan, Christopher J.	20
Piasta, Shayne B.	18
Hulme, Charles	15
Aram, Dorit	14
Goldstein, Howard	13
McConnell, Scott R.	13
Wackerle-Hollman, Alisha K.	13
Kim, So Jung	12
Neumann, David L.	12
More ▼	

Additional features: ERIC identifiers

LOCATION	
Australia	184
Canada	114
United Kingdom (England)	81
United Kingdom	66
New Zealand	61
South Africa	49
Turkey	48
Texas	44
United States	42
California	40
Germany	40
More ▼	

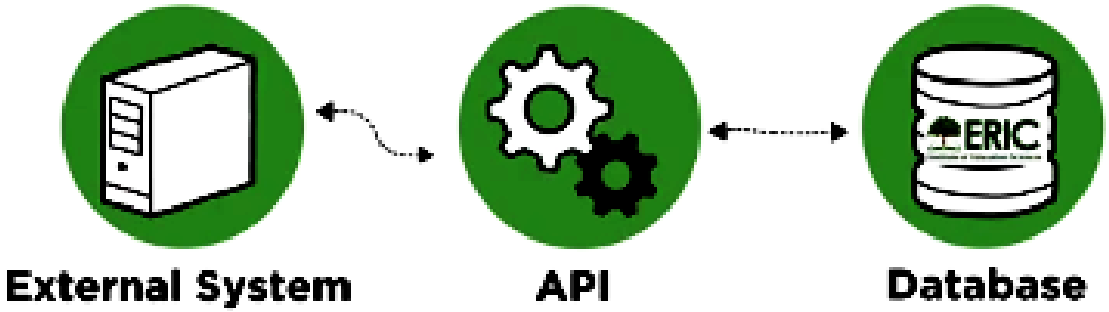
LAWS, POLICIES, & PROGRAMS	
No Child Left Behind Act 2001	7
Elementary and Secondary...	4
Race to the Top	4
Elementary and Secondary...	3
Individuals with Disabilities...	3
Individuals with Disabilities...	2
Brown v Board of Education	1
Civil Rights Act 1964	1
Education Reform Act 1988...	1
Every Student Succeeds Act...	1
Individuals with Disabilities...	1
More ▼	

ASSESSMENTS AND SURVEYS	
Peabody Picture Vocabulary...	140
Dynamic Indicators of Basic...	132
Woodcock Johnson Tests of...	70
Early Childhood Longitudinal...	41
Progress in International...	28
Clinical Evaluation of...	27
Woodcock Reading Mastery Test	25
Expressive One Word Picture...	23
Wechsler Preschool and...	20
Program for International...	19
Preschool Language Scale	17
More ▼	

Additional features: WWC ratings

WHAT WORKS CLEARINGHOUSE RATING	
Meets WWC Standards without Reservations	8
Meets WWC Standards with or without Reservations	11
Does not meet standards	3

The ERIC Application Programming Interface (API)



- Fields to be returned
- Select an output format
- Control the number of records to be returned from a query

Ease of exporting and displaying data

- Search results can be easily exported to programs for data analysis, such as MS Excel.
- For a walk-through of how to export from the API, please see the video at: https://www.youtube.com/watch?v=4iVbsld7WRA

Literature review demos in ERIC

- We now go the ERIC website at https://eric.ed.gov
- This live demo will show a brief literature review using ERIC search and the API.

ERIC tools enable systematic research

- ERIC provides powerful research tools that allow researchers to conduct systematic literature reviews with ease.
- See ERIC's Multimedia page for more information on searching ERIC and using the API: https://eric.ed.gov/?multimedia
- For a video walk-through of how to export search results using the API, please see: https://www.youtube.com/watch?v=4iVbsld7WRA
- For additional support, contact the ERIC Help Desk: https://eric.ed.gov/?contact

Questions?

Have questions? Contact us at https://ies.ed.gov/ncee/wwc/help (WWC) https://eric.ed.gov/?contact (ERIC)

Emily Tanner-Smith, Ph.D.
University of Oregon
What Works Clearinghouse

Bridget Thomas, Ph.D.
Quality Information Partners
ERIC
What Works Clearinghouse

Jeffrey Valentine, Ph.D.
University of Louisville
What Works Clearinghouse

References and further reading

- Glanville, J. (2019). Searching bibliographic databases. In H. Cooper, L. V. Hedges, and J. C. Valentine (Eds.), Handbook of Research Synthesis and Meta-Analysis, 3rd edition (pp. 73-100). Russell Sage Foundation.
- Giustini, D. (2019). Retrieving grey literature, information, and data in the digital age. In H. Cooper, L. V. Hedges, and J. C. Valentine (Eds.), Handbook of Research Synthesis and Meta-Analysis, 3rd edition (pp. 101-128). Russell Sage Foundation.
- Search ERIC at https://eric.ed.gov/
- See ERIC's Multimedia page for more information on searching ERIC and using the API: https://eric.ed.gov/?multimedia
- See the What Works Clearinghouse review protocols for examples of search strings used in prior literature searches at https://ies.ed.gov/ncee/wwc/handbooks#protocol
- What Works Clearinghouse, Institute of Education Sciences, U.S. Department of Education. (2021). *WWC version 4.1 standards and procedures handbooks*. Retrieved from https://ies.ed.gov/ncee/wwc/Handbooks