Beyond Basic Database Searching: Advanced Platform Mastery

KLISC 2026 BIENNIAL WORKSHOP

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Theme: Making E-Resources Work: Tools, Skills, and Best Practices

This session is designed to strengthen the ability of librarians and academic staff to support evidence-based research practices within universities, positioning librarians as research partners, not just service providers.

Objectives

By the end of this session, participants will be equipped to support postgraduate students and researchers in constructing precise, efficient search strategies reducing time spent on irrelevant materials and improving research quality.

1

Advanced Search Strategies

Apply Boolean logic, phrase searching, truncation, and nested queries to retrieve high-quality, peer-reviewed literature.

2

Database Navigation

Navigate Databases with confidence, using filters, subject headings, and advanced search fields.

3

Research Workflows

Integrate search skills with reference management tools (Zotero, Mendeley) to reduce duplication and citation errors.

4

E-Resource Maximisation

Promote effective use of subscribed platforms, ensuring return on institutional investment and enhanced research outputs.

The Problem with Basic Searching

Key Impacts on Research Effectiveness and E-Resource Utilization

- ***Underutilization of subscribed databases****: Limited search skills lead researchers to avoid academic databases, reducing usage despite high institutional investment.*
- ***Information overload and superficial retrieval****: Basic search approaches produce excessive irrelevant results, causing reliance on only top-ranked sources.*
- ***Reduced research efficiency and quality****: Lack of advanced search techniques slows retrieval and weakens the depth and rigor of research outputs.*

Research into information literacy and search behavior reveals widespread competency gaps across various educational levels:

- *Low e-resource utilization and search skill gaps (Iguehi & Solomon, 2024).*
- *Over-reliance on basic search strategies (Watson et al., 2025).*
- *Persistent training and skills gaps in information literacy (Kim et al., 2024).*

The Problem with Basic Searching cont.

Basic searching in academic databases creates significant gaps in literature reviews. Research reveals that a staggering 92.7% of search strategies used in systematic reviews contain errors. Relying on simple queries or single databases often misses critical evidence, compromising study validity and increasing false-negative finding
(Salvador-Oliván, J. A., Marco-Cuenca, G., & Arquero-Avilés, R. , 2019)

Only 30% of primary sources found: Early studies highlighted that a predefined simple electronic search strategy only located 30% of primary sources, requiring extensive manual citation tracking to find the rest.

78.1% recall errors: The most frequent errors related to recall, where searchers missed natural language synonyms, controlled vocabulary, or Medical Subject Headings (MeSH)

48.6% of database searches require expert knowledge: Less than 10% of generically designed searches were fully reproducible, meaning basic single-line searches failed to replicate the exact results.

Boolean Logic: The Core Foundation

Boolean operators define relationships between concepts and form the backbone of structured searching. They help postgraduate students avoid overly broad or unfocused literature reviews.

AND — Narrows

Combines concepts, requiring both to appear.

Example: Artificial Intelligence AND Academic Libraries

OR — Broadens

Includes synonyms or related terms. Useful where terminology varies across disciplines.

Example: (AI OR "Artificial Intelligence")

NOT — Excludes

Removes unwanted concepts from results.

Example: Libraries NOT Public Libraries

Structured Query Example: *("information literacy" OR "digital literacy") AND (universit* OR "higher education") AND Kenya*

Keyword Structuring, Phrase Searching & Truncation

Keyword Structuring

Identify core concepts, synonyms, and variations by breaking down research questions before searching. This ensures comprehensive retrieval and reduces missed key literature.

- *Identify core concepts from the research question*
- *List synonyms and disciplinary variations*
- *Account for multiple grammatical forms*

Phrase Searching (" ")

Quotation marks treat words as a single conceptual unit, improving precision especially in disciplines with standardised terminology.

"information literacy" without quotes retrieves information AND literacy in possibly unrelated contexts.

Truncation (*)

Retrieves multiple word variations from a single root: educat → education, educating, educational, educator.*

⚠ ***Caution:*** *Over-truncation introduces noise e.g., cat* retrieves cat, cattle, catastrophe.*

Nested Queries & Proximity Operators

Advanced search structuring ensures databases process logic correctly and retrieves contextually relevant results which is essential for postgraduate-level research where topics are rarely linear.

Nested Queries (Parentheses)

Databases process search logic sequentially. Nesting ensures correct grouping of concepts in multi-dimensional or interdisciplinary research.

Example: *(AI OR "machine learning") AND (education OR "higher education")*

Proximity Operators (NEAR, WITHIN)

Specify how close terms should appear to each other, improving contextual accuracy without over-restricting results.

Examples: *AI NEAR/5 education · "digital literacy" WITHIN 3 universities*

Platform note: *EBSCOhost uses N (Near); ProQuest uses NEAR/n*

Controlled Vocabulary & Filters

Controlled Vocabulary & Subject Terms

Controlled vocabularies are standardised indexing terms assigned by database curators. Using them reduces ambiguity and aligns searches with how databases are indexed — critical for dissertations requiring methodological rigour.

- *Use the Thesaurus in EBSCOhost*
- *Apply subject filters in ProQuest*
- *Essential when keyword searches give inconsistent results*

Filters & Limiters

Apply these filters to increase precision and reduce irrelevant results:

- ***Date range** — limit to recent or relevant publication years*
- ***Peer-reviewed** — ensure scholarly quality*
- ***Subject / category** — focus on relevant disciplines*
- ***Language** — restrict to accessible content*

What next?

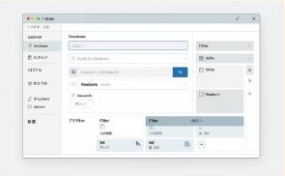
Over-reliance on simple keyword searches leads to low precision, irrelevant results, and missed scholarly content. Poor search skills result in weak literature reviews, missed research gaps, and increased research time. Advanced techniques address these challenges directly.

Research Challenge	*Technique Applied*	*Outcome*
Too many irrelevant results	*AND, Phrase Searching*	*Increased precision*
Missing key literature	*OR, Truncation*	*Improved recall*
Poorly structured searches	*Nested Queries*	*Logical clarity*
Weak conceptual linkage	*Proximity Operators*	*Contextual relevance*
Inconsistent terminology	*Controlled Vocabulary*	*Standardisation*

Searching is a strategic process, not a one-time activity. Strong search skills result in efficient discovery, higher-quality academic writing, and better research outcomes.

Database Mastery

Each platform has unique strengths. Understanding indexing, metadata, abstracts, and subject terms explains why results differ across platforms and enables cross-platform optimisation.



EBSCOhost

Advanced search fields (author, subject, abstract), filters and limiters, search history, and controlled vocabulary integration via the built-in Thesaurus.

ProQuest

Advanced search interface with refinement tools and document preview. Particular strength in theses, dissertations, and funded research projects.

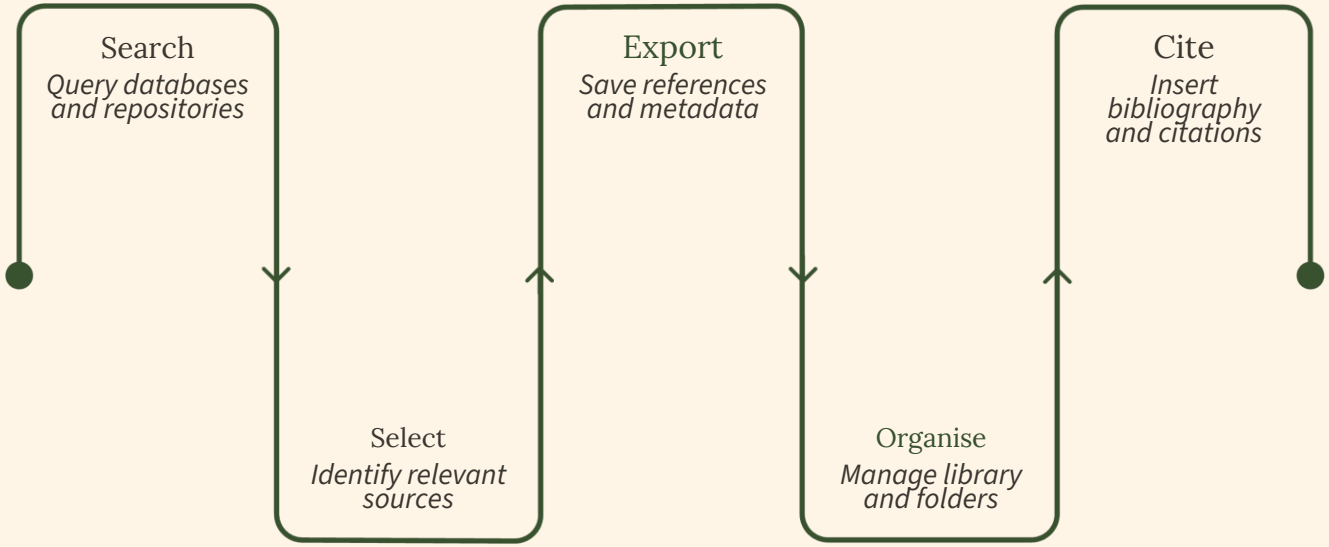
JSTOR

Archival content strength with robust search and filtering. Best for historical and foundational scholarly literature across disciplines.

Use field-specific searching (Author, DOI, Title) and compare results across databases to refine strategies. Skilled users perform more targeted searches, improving research outputs and reducing reliance on open web sources.

Research Workflow & Citation Management

*A structured research workflow — **Search → Select → Export → Organise → Cite** — integrates search skills with reference management, reducing duplication of effort and citation errors.*



This workflow supports postgraduate research by ensuring systematic, reproducible literature discovery and citation.

Zotero

Reference collection and organisation, browser integration, and automatic citation and bibliography generation.

Mendeley

PDF annotation, collaboration features, and social networking for researchers.

Export references in RIS or BibTeX formats. Avoid duplication and errors by maintaining consistent library organisation — essential for supporting postgraduate research.

Personalisation, E-Resource Utilisation & Key Takeaways

Alerts & Personal Accounts

- ***Search alerts*** *— notified when new content matches your query*
- ***Citation alerts*** *— track when papers are cited*
- ***Journal alerts*** *— stay updated on new issue releases*
- *Save searches and create database accounts to enhance research continuity*

Maximising Institutional Investment

Academic libraries invest significantly in databases, yet underutilisation remains persistent.

- *Monitor usage statistics and identify underutilised resources*
- *Conduct information literacy sessions and embedded librarian programmes*
- *Run awareness campaigns to promote subscribed content*
- *Position librarians as central to research support and training*

Advanced Search = Quality Research	Database Mastery is Essential
Tools Enhance Efficiency	Librarians are Research Enablers