**LEVERAGING LARGE LANGUAGE MODELS for Research Synthesis Search String Development**

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**THE BASICS**

Large Language Models (LLMs) are CUTTING-EDGE ARTIFICIAL INTELLIGENCE MODELS designed to process vast amounts of text and then rapidly generate human-like responses.¹

LLM Output

1. Equal Education
2. Universal Design for Learning
3. Accessible Learning
4. Diverse Learning Environment
5. Non-Discriminatory Education
6. Differentiated Instruction
7. Educational Equity
8. Individualized Instruction

**How Can LLMs Enhance Searching?**

- **SCANNING**
  - LLMs scan vast amounts of literature.

- **CONNECTING**
  - LLMs look for relationships between terms.

- **TRANSLATING**
  - LLMs work with a large array of languages.

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**How to Design an LLM Search String Prompt**

Use this “few shot” prompt in ChatGPT or Google Bard to develop your search string.

You are an information specialist who develops Boolean queries for systematic reviews. You have extensive experience developing highly effective queries for searching the (example_literature).

Your specialty is developing queries that retrieve as few irrelevant documents as possible and retrieve all relevant documents for your information need.

You are able to take in information need such as (example_review_title) and generate valid (research_database) queries such as (example_review_query).

Using this information, please generate a highly effective systematic review Boolean query for the information need.

**Prompt Modifications**

- **EXPANSION**
  - Ask the LLM for additional terms or synonyms of a single term.

- **REDUCTION**
  - Ask the LLM to identify terms that produce irrelevant citations.

- **COMPARISON**
  - Ask the LLM to conduct the search across multiple databases and estimate citation overlap.

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¹ Want to learn more about LLMs? Get Started with Machine Learning by Google is a great resource.


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User Input (i.e., Prompt)

```
“Return 8 synonyms or terms related to ‘INCLUSIVE EDUCATION.’”
```

LLM Analysis

```
LLMs should not replace conversations with research librarians; LLMs should supplement them.
```

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