From Information Literacy to Inquiry: Implementing a holistic model of evidence-based practice in school libraries

Dr Ross J Todd

Director, Center for International Scholarship in School Libraries
Associate Professor, School of Communication & Information
Rutgers, The State University of New Jersey
rtodd@rutgers.edu
www.cissl.rutgers.edu
www.twitter.com/RossJTodd
Overview

- Brief overview of EBP in school librarianship
- Conceptions and conundrums
- Holistic approach to EBP in school librarianship
- CISSL research: Inquiry-based learning and empowering EBP
School Libraries, Now More than Ever - CISSL Position Paper
NJASL Phase 1 Report - One Common Goal: Student Learning
• EBP - short history in the professional discourse of school librarianship
• 2007: School Library Journal Leadership Summit focusing on EBP in school library arena
• 2009: EBLIP journal special issue on EBP in school libraries
• School librarianship: at the confluence of education and librarianship
"As we start a new school year, Mr. Smith, I just want you to know that I'm an Abstract-Sequential learner and trust that you'll conduct yourself accordingly!"
I think I need a book
that's ideologically sound
with a proper gender and
ethnic emphasis giving due
weight to appropriate societal,
familial and peer values
in a milieu that's iconoclastic,
avoids stereotyping or
violence yet remains
relatively unalarming
and won't cause
irreparable harm to
my emerging psyche
but if you don't have
one of those, how
about one that's
a rattling good read?

LIBRARY
Evidence-Based Librarianship: Booth

“An approach to information science that promotes the collection, interpretation, and integration of valid, important and applicable user-reported, librarian-observed, and research-derived evidence. The best-available evidence moderated by user needs and preferences, is applied to improve the quality of professional judgments”

The Institute of Education Science, in the US Department of Education defines evidence-based education as the:

“Integration of professional wisdom with the best available empirical evidence in making decisions about how to deliver instruction”
(Whitehurst, 2002, 3)
Evidence-based Education

Empirical Evidence

- Scientifically Based Research
  - Practices
  - Programs

Objective Measures

- Benchmarks
- Local Data

Professional Wisdom

- Personal Experience
- Consensus Views

Evidence-Based Education (USA)

(Whitehurst, 2002)
Gold Standard and Accountability

- “Gold Standard” of educational research in the USA: scientifically-valid knowledge about what works generated in randomized controlled trials (RCTs) (Institute of Education Sciences, 2003).

- Federal education legislation in USA centering on No Child Left Behind Act, and Education Sciences Reform Act (2002) not only using evidence to build practice, but also require state education systems to develop annual assessments to measure learning outcomes, school and student progress, and that educators use data to help improve the learning of all students. (Local)

- Impacts / accountability of outcomes
RCTs in education:

- Can there be distinct and standardized ‘treatments’ in education?
- Too simplistic to capture the complexity and multiplicity of teaching and learning; puts meaningful learning at risk.
- Presents educational practice as a-contextual
- Reductionist approach of isolating the effect of specific factors assumes that it works in isolation to other factors
- Tightly controlled instructional programs focusing on single intervention runs the risk of building a rigid packaged educational approach
- To establish fixed, universal causal patterns in teaching seems equally difficult, if not impossible
- “disservice to the very goals of education to turn policies and programs – as well as the life of the classroom – over to the strict dictates of a statistically significant difference achieved in experimental trials” (Willinsky, 2001, 6).
What Works Clearinghouse (USA)

- **What Works Clearinghouse** has been set up by the Department of Education (2002) to be a “central and trusted source of scientific evidence for what works in education”

- **http://ies.ed.gov/ncee/wwc**

- So rigorous that few studies meet the required level of scrutiny, resulting in the absence of enough evidence to make important instructional decisions
FIND WHAT WORKS

Find interventions (educational programs, practices, or policies) that address your school or district's needs and summarize their evidence of effectiveness.

Results. 33 Interventions found using these filters:

- Outcome Domains: Academic Achievement
- Effectiveness: Positive Effects, Potentially Positive Effects

### Results by Outcome Domain

#### General academic achievement

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Topic Area</th>
<th>Improvement Index</th>
<th>Effectiveness Rating</th>
<th>Extent Of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lessons in Character Education</td>
<td>Character Education</td>
<td>16</td>
<td></td>
<td>Small</td>
</tr>
<tr>
<td>Positive Action</td>
<td>Character Education</td>
<td>14</td>
<td></td>
<td>Medium to Large</td>
</tr>
</tbody>
</table>

---

© U.S. Department of Education 2023
What Works Clearinghouse

- Academic Achievement: Positive Interventions
- Academic Achievement (33)
  - General academic achievement (2)
  - Mathematics achievement (9)
  - Progressing in school (6)
  - Reading achievement (15) “Reading Recovery” (grade 1 students)
  - Writing achievement (1)

(Despite 120 years of educational research and hundreds of thousands of research studies)
• **Effectiveness**—rating based on: the quality of the research design, the statistical significance of the findings, the size of the difference between participants in the intervention and the comparison conditions, and the consistency in findings across studies.

• Positive Effects (6)
  Potentially Positive Effects (27)

**Extent of Evidence**—The WWC categorizes the extent of evidence in each outcome domain as “small” or “medium to large,” taking into account the number of studies and the total sample size across studies that meet standards.

• Small (24)
  Medium to Large (9)
• Topsy-turvy practice of collecting evidence for the express purpose of promoting school libraries as an effective educational intervention.

• “School librarianship has forsaken two central tenets of EBP.
  - Neglected the requirement for impartiality in the collection and interpretation of data.
  - Diverted the focus of the evidence based analysis away from client needs.

• EBP requires that the effectiveness of school libraries in meeting specific student needs be evaluated in comparison with relevant alternative educational interventions. Unfortunately, the importance of this type of comprehensive evaluation is missing from the “evidence based framework” which school librarianship has adopted.

• (Lyons: Evidence Based Library and Information Practice 2009, 4:3)
In Lean Times, Schools Squeeze Out Librarians
House Standing Committee on Education and Training

Committee activities (inquiries and reports)

Inquiry into school libraries and teacher librarians in Australian schools

On Wednesday 10 March 2010 the Minister for Education, Hon Julia Gillard MP, asked the Committee to inquire into and report on school libraries and teacher librarians in Australian schools.

The Committee invites interested persons and organisations to make submissions addressing the terms of reference by Friday 16 April 2010. Please refer to our brochure on a submission for more information.

In order to facilitate electronic publishing of submissions, the Committee would prefer them to be emailed to ee.reps@aph.gov.au or sent on disk or CD-ROM to the Committee in Microsoft Word® or Portable Document Format (PDF).

Terms of reference

Submissions

Public hearings

Media releases

Report
Potential of school libraries and teacher librarians to contribute to improved educational and community outcomes

Having access to electronic information can never replace the contributions to learning provided by teacher librarians. The role of school information services and teacher librarians are key factors in the improved delivery of curriculum outcomes,
Evidence-based practice

3.18 Dr Ross Todd of the Centre for International Scholarship in School Libraries described the importance of ‘evidence based practice (EBP)’ in influencing the recognition of teacher librarians. Dr Todd explained that EBP is the process of teacher librarians documenting how they make a difference to learning at their school and bringing it to the attention of principals, teaching colleagues and parents. More than just proving the worth of teacher librarians, EBP is about ‘demonstrating the vitality of our [teacher librarians’] contributions to learning.’

3.19 While there is no standard approach to evidence-based practice and strategies can vary from school to school, it is essentially about creating assignments that tie the library to the classroom curriculum.

3.20 Dr Todd suggests that a good starting point for teacher librarians is to focus on collaborative lessons with teaching colleagues, who, he says, can
students on how that lesson assisted them better find the resources they were searching for, ultimately being able to demonstrate that her lesson had improved the quality of their projects.24

3.22 ASLA referenced Ms Gillespie, a teacher librarian who worked to improve literacy levels across her whole school after receiving the school’s first NAPLAN test results. She assisted teaching colleagues to provide resources that would support classroom activities.25

3.23 The Committee appreciates that evidence-based practice takes time on the part of teacher librarians but agrees that documenting and highlighting examples of teacher librarians’ successes in improving educational and community outcomes is critical to illustrating the enormous potential of school libraries to help students achieve better results. The Committee will discuss further the need for teacher librarians’ self-promotion and marketing later in this chapter.
Professional practice that systematically uses:
- research-derived evidence
- teacher/school librarian-observed evidence meshed with experience and wisdom
- learner-reported evidence

👉 decision making, development & continuous improvement of school libraries
👉 program processes and impact on student achievement, reading/literacy outcomes
👉 advocacy/promotion
👉 informs ongoing research agenda

Central focus: student’s information-to-knowledge experience enabled though school library initiatives, and adding value to the school’s goals. **Local focus**
<table>
<thead>
<tr>
<th>Evidence FOR Practice</th>
<th>FOUNDATION INFORMATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing formal research provides the essential building blocks for professional practice</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence IN Practice Applications / Actions</th>
<th>PROCESS TRANSFORMATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Planning practices</td>
</tr>
<tr>
<td></td>
<td>Librarian expertise meshed with research-based evidence to provide a dynamic decision-making and learning environment: Librarian’s evidence / thinking / wisdom</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence OF Practice Results – impacts &amp; outcomes</th>
<th>OUTCOMES FORMATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>user-reported evidence</td>
</tr>
<tr>
<td></td>
<td>learner changes as result of inputs, interventions, activities, processes</td>
</tr>
</tbody>
</table>
• When I was working on a project about science I had no idea what I was doing I asked my library teachers for help they helped and by the end of the day I felt so much better!!! And from that day on I knew what I was doing on that project and I got a A I was so proud of myself and my confidence went up a whole lot and now when ever I do a project I know I have a lot of power now to do well on projects!!! (Respondent 777 )

• I needed to write a paper and I went to the Library where I was ultimately able to write a paper successfully. My ideas were a mess and talking to the librarian gave me a way to organize my ideas and present the argument. I did really well!! I’ve never forgotten that – used it to do many other assignments. (Respondent 66)

• It helped me find info on racism for a 10th grade project, and made me really think about that, especially I didn’t realize how racist some of my ideas were. (Respondent 433)
• Dealing with the “topsy-turvey” research and building professional practice on available research

• Documenting evidence

• Information Literacy as an example

• IL important construct in school librarianship and higher education, and range of social contexts
Complexity and contradictions in information literacy

- Terminological confusion: Plethora of terminology, understandings, definitions, descriptions: overlaid by an territorial battleground for intellectual possession

- Multiple models of information literacy: Competing / Conflicting

- Many models either not built on research, on small-sample research, nor tested and validated as authoritative models across diverse contexts and population

- Little exploration of what constitutes meaningful pedagogy for information literacy instruction / interventions

- Limited substantive articulation of the impacts / benefits of information literacy agendas, beyond mastery of a range of information literacy skills
Information Literacy Models

• Information Skills Process
• Information Fluency
• Big 6
• The Seven Pillars Model
• The 8 Ws: (Watching, Wondering Webbing, Wiggling, Weaving, Wrapping Waving, Wishing)
• 10 step Research process
• Action Learning Model
• SAUCE model (Set scene, Acquire, Use, Communicate, Evaluate)
• PLUS Model (Purpose, Location, Use, Self-evaluation)

http://ictnz.com/infolitmodels.htm
Moving forward

- Critique and debate of the information literacy agenda

- Meta-analysis of existing information literacy research: cumulation and aggregation of existing findings

- Establish claims / hypotheses that enable further theorizing and establishing practice principles

- A theory of information literacy as information handling / generic skills
  Proposition 1: .....................
  Proposition n: .....................

- Metatheory of Information Literacy?
Key Challenge

- Librarians engaging in practices which enable them to gather evidence of impacts
- State claims of learning outcomes: IL capabilities, knowledge outcomes
- Large studies Ohio, Delaware, New Jersey (2003-2010)
- School librarians and teachers asked to identify impacts of IL instruction.
  - limited articulation of outcomes
  - focus on describing “what I do” - outcomes are implicit, mysterious

Tools for charting outcomes of school library practices
• 10 New Jersey public schools

• Experienced and expert school librarians

• Diverse public schools

• 10 school librarians working on curriculum projects with 17 classroom teachers

• 574 students in Grades 6 – 12; range of disciplines

• Key question: “did they learn anything”
Do they learn anything?

- What knowledge outcomes, if any, does the school library enable as students make use of diverse digital and print information sources?

- How might these knowledge outcomes be identified, measured, and embedded into professional practice?

- Develop a learning impacts measure for use by school-based teams. (SLIM Toolkit: Student Learning Through Inquiry Measure)

Data Collection

- Student Learning through Inquiry Measure (SLIM): to chart processes, affective dimensions and outcomes in terms of knowledge and skills
  - SLIM Handbook
  - SLIM Reflection Instruments and Scoring Guidelines
    - SLIM Scoring Sheets
- Applied at initiation, midpoint and conclusion of the instructional program
- http://cissl.rutgers.edu/impact_studies.html
Two distinctive approaches to knowledge construction:

-- Additive (Transportive)

-- Integrative (Transformative)

Did they learn anything?
Factors contributing to differences across Schools

• No significant variations across the age, grade, and gender groups

• Nature of task you set: collection of facts or transformation of facts

• Engagement and ownership

• Nature of I. L. interventions: Development of skills to construct knowledge rather than finding information
<table>
<thead>
<tr>
<th>Evidence FOR Practice</th>
<th>FOUNDATION INFORMATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kuhlthau’s model</td>
</tr>
<tr>
<td></td>
<td>Information Search Process</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence IN Practice</th>
<th>PROCESS TRANSFORMATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications / Actions</td>
<td>Planning instructional interventions and processes for evidence</td>
</tr>
<tr>
<td></td>
<td>(Student Learning Through Inquiry) Measure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence OF Practice</th>
<th>OUTCOMES FORMATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results – impacts &amp; outcomes</td>
<td>Claims of learning outcomes – local schools</td>
</tr>
<tr>
<td>Aggregation of evidence</td>
<td></td>
</tr>
</tbody>
</table>
1. Qualitative exploration of search process of high school seniors (1983)
2. Qualitative study of original sample after 4 years of college (1988)
4. Qualitative and quantitative study of high, middle and low achieving high school seniors (1989)

50+ studies 1990-2010

**Information Search Process**  Carol Kuhlthau

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Initiation</th>
<th>Selection</th>
<th>Exploration</th>
<th>Formulation</th>
<th>Collection</th>
<th>Presentation</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feelings</td>
<td>uncertainly</td>
<td>optimism</td>
<td>confusion</td>
<td>clarity</td>
<td>sense of direction</td>
<td>satisfaction or disappointment</td>
<td></td>
</tr>
<tr>
<td>(affective)</td>
<td>frustration</td>
<td>doubt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thoughts</td>
<td>vague</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(cognitive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actions</td>
<td>seeking relevant information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(physical)</td>
<td>exploring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Information-to-Knowledge Journey**

**Zone of Intervention:** the critical point / need for instruction
Australia: Inquiry Learning Project

- Understand the dynamics of developing and implementing collaborative inquiry units, based on the Information Search Process model

- Track and understand how students build on their existing knowledge of a curriculum topic and how their knowledge of a topic changes, if at all

- Examine the transformation and integration of found information into existing knowledge, and the creation of new personal knowing, and reflective processes

- Use some school-based tools for measuring and charting knowledge development
The Participating Schools

- 12 Independent schools  Grades 4 -12
- 34 teachers, 18 teacher-librarians &  935 students
- Inquiry units structured on stages of ISP (Kuhlthau)
- Curriculum areas of History, English, Health, Science, Geography
- Involved an area of inquiry which allowed students freedom to develop their own topic choice, focus questions, and representing their new knowledge
- Involved planning of instructional interventions to progress the information-to-knowledge journey
- All focused on presence of teachers and teacher librarians at each stage of the process to guide and intervene, both in planned ways, and in unplanned ways
- Gathered data from students at three points of the Information Search Process - at Initiation, at Collection, and at Assessment
Focus of Instructional Interventions

- **Resource-based capabilities**: These are abilities and dispositions related to seeking, accessing and evaluating resources in a variety of formats, including people and cultural artefacts as sources. They also include using information technology tools to seek out, access and evaluate these sources, and the development of digital and print-based literacies.

- **Thinking-based capabilities**: These are abilities and dispositions that focus on substantive engagement with data and information, the processes of higher order thinking and critical analysis that lead to the creation of representations/products that demonstrate deep knowledge and deep understanding.

- **Knowledge-based capabilities**: These are the abilities and dispositions that focus on the creation, construction and sharing the products of knowledge that demonstrate deep knowledge and understanding.

- **Developed from Ohio, Delaware and Australia studies (25,000 students)**
Focus of Instructional Interventions

• **Reading to learn capabilities:** These are the abilities and dispositions related to the transformation, communication and dissemination of text in its multiple forms and modes to enable the development of meaning and understanding.

• **Personal and interpersonal capabilities:** These are the abilities and dispositions related to the social and personal aspects of learning about self as a learner, and the social and cultural participation in inquiry learning.

• **Learning management capabilities:** These are the abilities and dispositions that enable students to prepare for, plan and successfully undertake a curriculum-based inquiry unit.
Australian Government Quality Teacher Program
Welcome to the wikispace for the NSW AIS/CEC funded research into Guided Inquiry

Final report - This is a summary of all our schools' findings.

This is a powerpoint presentation used at Loreto Kirribilli to show our findings, and implications.

We will use this space to develop and carry out our research, under the guidance of Dr. Ross J. Todd, of Rutgers University, who is responsible with Dr. Carol Kuhlthau for the development of Guided Inquiry theory.

Guided Inquiry is "carefully planned, closely supervised targeted intervention of an instructional team of school librarians and teachers to guide students through curriculum based inquiry units that gradually lead towards independent learning." [http://cis1.sis.rutgers.edu/guided_inquiry/introduction.html](http://cis1.sis.rutgers.edu/guided_inquiry/introduction.html) The Guided Inquiry website is an excellent starting point for development of our understanding of the concepts.

The object of the research is for participating teacher librarians to work with teachers in their schools to develop and carry out an assignment using Guided Inquiry principles.
Scaffolds

- Guided Inquiry at work planning sheet - CISSL
- Research river PPT - Loreto/Barker
- The Research Clock – Queenwood
- Building background - Loreto/Ban the birds
- Developing Questions using Blooms and Goldilocks – Abbotsleigh
- Blooms and Goldilocks - Abbotsleigh
- Creating questions – Abbotsleigh
- Creating Questions with Blooms – Anderson and Krathwohl
- Question development – Queenwood
- Initial question development – Santa Sabina
- Building thinking questions – Santa Sabina
- Notetaking scaffold 1 – Loreto
- Notetaking scaffold 2 – Loreto
- Notetaking scaffold 3 – Loreto
- Notetaking scaffold 4 – Santa Sabina
- Notetaking practice – Santa Sabina
- Synthesis – Developing deep perspectives – Santa Sabina
- Synthesis – Analyse – Queenwood
- Synthesis – Assess – Queenwood
- Synthesis – Compare – Queenwood
- Synthesis – Critically analyse – Queenwood.
- Intext citation – Loreto
- Bibliographies - Loreto

Primary:
- Curiosity scaffold – Santa Sabina
- KWL chart – Santa Sabina
Data Collection

Initiation, Focus and Presentation stages  SLIM  Toolkit (Student Learning Through Inquiry)

1. Write the title that best describes your research project at this time.
2. Take some time to think about your research topic. Now write down what you know about this topic.
3. What interests you about this topic?
4. How much do you know about this topic? Check (✓) one box that best matches how much you know. Nothing, Not much, Some, Quite a bit and A great deal
5. Write down what you think is EASY about researching your topic.
6. Write down what you think is DIFFICULT about researching your topic.
7. Write down how you are FEELING now about your project. Check (✓) only the boxes that apply to you. Confident, Disappointed, Relieved, Frustrated, Confused, Optimistic, Uncertain, Satisfied, Anxious or Other.
8. Task 3: easy, difficult, reflections on learning
• Initial representations were lists of unrelated concepts, and generalities, language associations

• Statements were primarily property (is a), manner (describe how something happens)

• Random representation: unstructured, no clear sequence or organization; guess work “I think that…”, or at best chronological / historical

• Some indication of inaccuracy / misrepresentation

• Acknowledge that students knew very little

• Motivated to learn: personal experiences, personal connections, intriguing facts about topic, curiosity, teacher/librarian recommendation
• Dramatic increase in number of propositional statements

• Focus on Properties: describes characteristics; Manner: describe processes, styles, actions; Reason: explanations of how and why

• Some evidence of organizational structure of ideas; some attempt to develop conceptual groupings

• Cognitive intents: From initiation to formulation: getting a bigger picture (building background) getting a changed picture (correcting misinformation); getting a clearer picture
Conclusion

• Clear and precise listing of properties, manner and increasing use of set membership;

• Final representations also stronger on reasons, outcomes, causality, implications, predictive, reflective (increased complexity)

• For some students, decrease in number of statements reflect higher levels of synthesis: coalescing lists of properties and manners into conceptual categories

• Higher levels of structural centrality and conceptual coherence - ie. overall integrated and interlinked structure, yet subgroups of ideas

• Cognitive intents: From formulation to presentation: getting a bigger picture, getting a clearer picture, getting a position in a picture (ie still getting more facts, clarifying aspects in process of sorting and writing, developing a personal perspective)

• Reflective, comparative, positional: personal ownership
Contributions

• Information Search Process: research-based framework for fostering inquiry through the school library - empowering

• SLIM Toolkit: time consuming: team approach necessary, tool for building local evidence and nurturing improvement in way teachers and school librarians design and implement research tasks / inquiry based learning through school library

• Evidence of local impact
“If living is seeing
I’m holding my breath
In wonder – I wonder
What happens next?
A new world, a new day
to see”