



TEACHING EBP: CHALLENGES AND LESSONS LEARNED

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DISCLOSURES

- I received travel and a stipend from ASHA to present at the AFDI.
- I am an ASHA member and a certified speech-language pathologist.

MY BACKGROUND

- Certified SLP- was a practicing SLP for six + years
- Received my PhD from University of Kansas
 - Focus on reading and language development and disorders
- Have worked at KU (Research scientist) and KUMC (Assistant Professor) since graduation
 - Reading, Language, and Learning Lab
- Currently have two NIH grants looking at reading comprehension in upper elementary and junior high

MY EXPERIENCE RELATED TO EBP

- Or, simply put- why am I here talking to you?
- I teach a SLPD seminar on Evidence-Based Practice and also infuse this into my Reading Disorders course.
- I have years of clinical experience as an SLP.
- Much of my research is community/school-based.

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- Write down one question or knowledge goal you have for this morning.

LET'S GET STARTED!





EVIDENCE BASED PRACTICE:WHAT IS IT?

- Evidence-based practice (EBP) is the integration of:
 - External scientific evidence
 - Clinical expertise/expert opinion
 - Client/patient/caregiver perspectives

Taken from <https://www.asha.org/Research/EBP/>

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- <https://www.asha.org/members/ebp/>

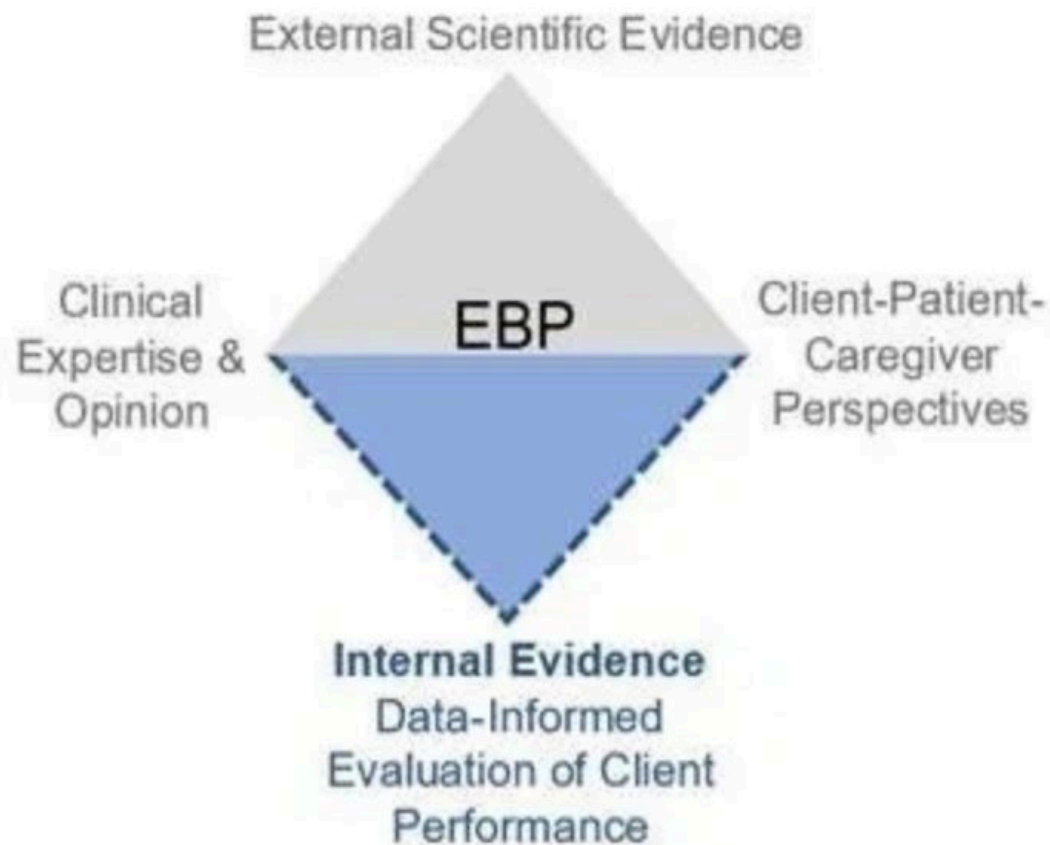


Figure 1: Evidence-Based Practice: Triangle to Diamond

Higginbotham, J., & Satchidanand, A.
(April 2019)
<https://academy.pubs.asha.org/2019/04/from-triangle-to-diamond-recognizing-and-using-data-to-inform-our-evidence-based-practice/>



EBP: A REITERATIVE PROCESS

- Five step process (adopted from Sacket et al., 2000)
 1. Ask the question- PICO
 2. Search for evidence
 3. Evaluate evidence
 4. Make the decision
 5. Evaluate the outcomes

(Johnson, 2006)



EVALUATING EXTERNAL EVIDENCE

LEVEL	DESCRIPTION
Ia	Well-designed systematic review or meta-analysis
Ib	Well-designed randomized controlled trial
IIa	Well-designed controlled study without randomization
IIb	Well-designed quasi-experimental study
III	Well-designed non-experimental studies (i.e., correlational and case studies)
IV	Expert committee report, consensus conference, clinical experience of respected authorities

ASHA, n.d.

IDENTIFIED BARRIERS TO EBP

- In 2005, ASHA conducted a member survey of knowledge of EBP
- What do you think were the often-mentioned barriers of EBP?

IDENTIFIED BARRIERS OF IMPLEMENTING EBP

- TIME

TIME

- “Most members could identify the definition of EBP. Most also thought that EBP was a good idea-**it’s just a shame we don’t have enough time to actually do it.**”

TIME

Brackenberry et al.
(2008)- Writing and
investigating/answering
a clinical question takes
3-7 hours



IDENTIFIED BARRIERS OF IMPLEMENTING EBP

- TIME
- EVIDENCE
- COST OF CONTINUING EDUCATION

THE RESEARCH TRANSLATION PROBLEM: A MODEST PROPOSAL



By Meredith Harold

The ASHA Leader, July 2019.

<https://leader.pubs.asha.org/doi/10.1044/leader.FTR2.240720.19.52>

CHALLENGES TEACHING EBP

- Have talked about EBP and challenges with implementing it into clinical practice
- What about teaching and integrating EBP into coursework?

EVIDENCE RELATED TO TEACHING EBP

- Two systematic reviews (Coomarasamy & Khan, 2003; Flores-Mateo & Argimon, 2007) showed that knowledge and skill was impacted by instruction related to EBP but not as much impact on attitudes and sustained behaviors of students
- “An allied health student could receive a comprehensive grounding in evidence based practice, but not be able to deploy their knowledge and skill post graduation due to workplace culture.” (p. 1042, Hitsche & Nicola-Richmond, 2017)
- Some evidence that older clinicians are “more resistive to evidence based practice” than younger colleagues (Asrons & Sawitzky, 2006; Hitch, 2015)
 - This contradicts some suggestions that new clinicians paired with an experienced clinician to learn more about EBP



WOLTER ET AL. (2011)

- Tutorial designed to provide guidance on infusing EBP into CSD programs
 - Undergraduate and graduate students
- Reference Analysis Worksheet- provides a framework to help students identify important research components
- Discusses importance of teaching EBP into both coursework and clinical practice at the graduate level

HAS THE COFFEE KICKED IN???



SEMINAR IN EVIDENCE-BASED PRACTICE

- SLPD seminar taught in the first semester of a student's SLPD program
 - Requirement of SLPD program at KU is to have at least three years of clinical practice
 - Range of students, from doctoral students who have had enough clinical practice to get their CCCs to SLPD students who have been working more than 15-20 years

READINGS

- Dollaghan (2007)- The Handbook for Evidence-Based Practice in Communication Disorders
- Brown (2017)- The Evidence-Based Practitioner
- Now use these as recommended texts but most assignments are a combination of journal articles, webinars, and websites
 - Emily Hanford's Hard Words podcast
 - Hidden Brain- Facts aren't Enough

TYPES OF ASSIGNMENTS

- Case study/scenario: discuss issues related to EBP and how they would go about gathering information in each area of EBP
- Final paper- The final graded requirement is a 10-15 page (or so) paper that represents
 - (a) development of an original question concerning an intervention;
 - (b) details of an extensive, if not fully thorough search for evidence pursuant to the question;
 - (c) selection of 6 – 10 articles for evaluation of quality and level of evidence; and
 - (d) balancing of external and internal evidence, and
 - (e) the clinical conclusion.

TED TALK- BATTLING BAD SCIENCE (BEN GOLDACRE)


- This is a really great TED talk to kick off a discussion of EBP or thinking about science
- https://www.ted.com/talks/ben_goldacre_battling_bad_science?language=en

TOP 3 CHALLENGES I EXPECTED

- Limited knowledge on all components of EBP (continues to be focus on the external evidence, with some surprise on the inclusion/importance of clinical experience and of patient values)
- Limited knowledge of the resources available
- Limited expectations in workplace to utilize evidence-based practice in a systematic way (if at all)

LIMITED KNOWLEDGE COMPONENTS OF EBP

- We can do better here!
 - Not likely that you will have a EBP course in a master's level curriculum, but you can make sure EBP practices are infused throughout the curriculum
 - Reading disorders course: now start intervention section with some information related to EBP and infuse throughout
- The focus on needing a research-base for clinical practice is great
 - But might be neglecting the importance of clinical judgment/observations as well as client perspectives

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- Seems to be a student focus on the external evidence, with some surprise on the inclusion/importance of clinical experience and of patient values
 - The focus on needing a research-base for clinical practice is great
 - But might be neglecting the importance of clinical judgment/observations as well as client perspectives

RESOURCES FOR EXTERNAL EVIDENCE

- Journal articles
- The Informed SLP
- SpeechBite

RESOURCES RELATED TO PERSPECTIVES

- Can come directly from client
- Can also be found in systematic reviews or studies



RESOURCES FOR CLINICAL EXPERTISE/EXPERT OPINION

- ASHA's Practice Portal
 - Each practice portal was developed and vetted by subject matter experts
- ASHA's Evidence Maps
 - Searchable online tool
 - Only include systematic reviews, meta-analyses, and clinical practice guidelines
 - Provides quality readings

LIMITED EXPECTATIONS OF EBP IN WORKPLACE

- If EBP is seen by students as just a way to complete an assignment, without examining the applied clinical issues, probably not likely to consistently engage in EBP in the workplace (Wolter et al., 2011).
- Many workplaces do not expect clinicians to show the use of evidence-based practice in any systematic way.
 - Example of school district in Seattle that requires EBP statements as a positive
- When workplaces do expect EBP, there is still limited support or guidance available.
 - Example of rehabilitation system that has a 50% EBP expert as a positive

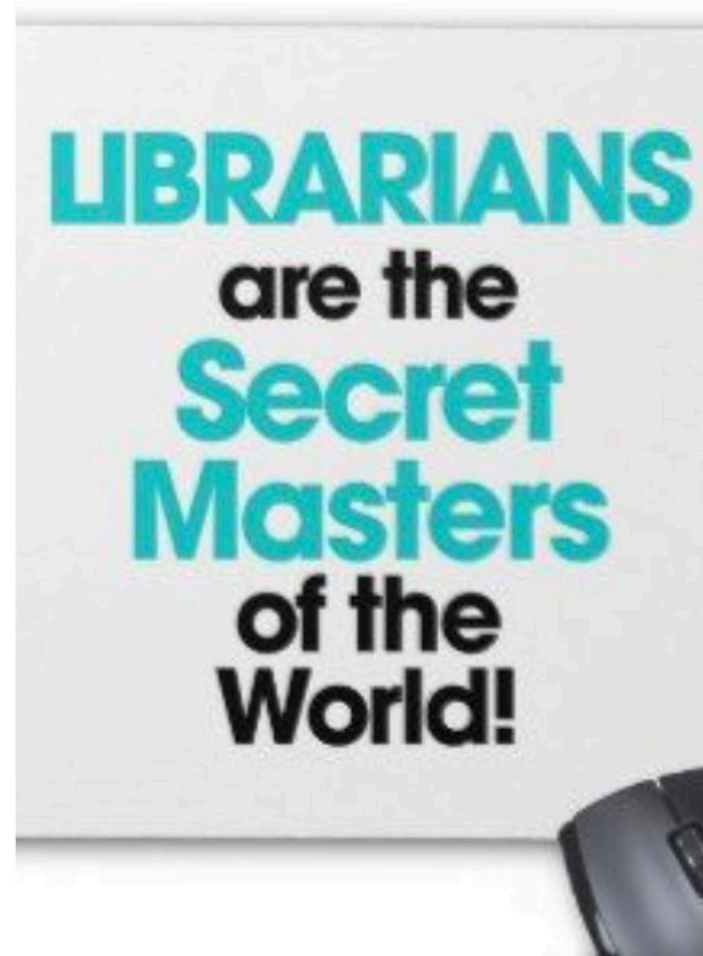
CHALLENGES THAT SURPRISED ME

- Limited knowledge of how to successfully conduct a search
- Limited knowledge of research design/methodology/statistics
 - Encourage students to read articles but don't teach HOW to read articles
- Unaware of the lack of *readily-available* and/or *free* resources to gain evidence

CONDUCTING A SEARCH

- **Search Strategies**
- <https://www.softchalkcloud.com/lesson/serve/w7acp8gr3VeX9Q/html>
- PubMed MeSH
- <https://www.youtube.com/watch?v=uyF8uQY9wys&feature=youtu.be>

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- Invite a librarian from your university to speak to your class about how to do a literature search



LACK OF RESEARCH METHODOLOGY/STATISTICAL KNOWLEDGE

- Be prepared to go over concepts that you weren't prepared to review
 - I now teach one whole class period on some basic statistics/research methodology
- Make things applicable and accessible to students
- PEDRO-P training and group reviews of research articles

LACK OF RESEARCH METHODOLOGY/STATISTICAL KNOWLEDGE

- Research methodology and statistical analyses are getting increasingly sophisticated
 - Wood et al. article
- Give students working understanding of types of analyses
- Also provide knowledge on good sources of research
 - Impact factors
 - Peer-reviewed versus not
 - Converging evidence versus single study

LACK OF KNOWLEDGE OF THE LIMITED FREE RESOURCES THAT MIGHT BE AVAILABLE

- Undergraduate and master's level students do not seem to understand the difficulty in obtaining research when not in a university setting
 - Shock at my suggestion of emailing the author!
- Unaware of the limited amount of professional development that might be made available when employed

THE
MISINFORMATION
AGE



How False Beliefs Spread

CAILIN O'CONNOR AND JAMES OWEN WEATHERALL

TESTIMONY OF OTHERS

- Dependence on the “testimony of others”- almost every single belief you have has come from another person
- When you open the door for true beliefs to spread from person to person, you open the door for false beliefs from person to person
 - From The Misinformation Age

CONFIRMATION BIAS

- Individuals tend to search out or look for evidence that fits in with their own beliefs.
 - Vaccination example from Hidden Brain podcast
- Warning people or focusing on the negative does not seem to help change behaviors
 - Warning about the negatives will not influence anti-vaccination individuals to change their mind about their belief
- Focusing on the positive might influence behavior
 - When physicians provided with immediate positive information/reinforcement, hand washing before/after visits increased

FINAL THOUGHTS

- Evidence-based practice is changing and evolving within our profession (and outside our profession)
- It's our job to lay a foundation for our students
 - It's not enough to just say "Go Forth and Evidence-Base Practice!"


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- *I was taught the way of progress is neither swift nor easy.*

Marie Curie

QUESTIONS? COMMENTS?


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- “If it is a miracle, any sort of evidence will answer, but if it is a fact, proof is necessary.”

- Mark Twain

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- “Ultimately, the reason to rely on scientific knowledge when we make decisions is not that scientists form a priesthood, uttering eternal truths from the mountaintop of rationality. Rather, it is that scientists are usually in the best position to systematically gather and evaluate whatever evidence is possible.”
 - From *How False Beliefs Spread* by Cailin O’Connor and James Owen Weatherall (2019)

BACKGROUND VERSUS FOREGROUND QUESTIONS

- PICO (or PICOT) questions
 - Population
 - Intervention
 - Control
 - Outcome
 - Time