Evidence-Based Language Practice

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The year is 2025. The student asks his teacher, Mrs. Mortensen. “How long will It take me to write correct journal entries?” or “Will I become able to speak at meetings if I practice social speaking?” or “Should I spend a lot of time on the past imperfect tense if I want to speak to other people?” The teacher then tells the student she must get some data to answer the questions but will provide an answer for the next class. The teacher then goes to the English Department’s computer and forms a literature search. For one question, there is an exciting literature review that is in one of the on-line language journals. The review is recent (within the last 2 months) and her search of the literature within the time reveals no new relevant studies. For the other questions, the department’s on-line manuscript service provides her with the language studies she selects. The search and download take less than 3O minutes. Review of the literature allows her to answer the student’s questions. She then files the computer search on the department’s evidence-based library so others may access it when the need arises. She makes a note in the electronic database as to the availability of the new review and another annotation of where the data are stored. Is this a far-fetched scenario? I think not.

Medical education of doctors and patients has long taught and used research as the basis for development of protocols, critical pathways, care maps, and standards of care (Strauss 1988).

I believe that language education of teachers and students can also use research as the basis for the establishment of educational guidelines, curricula, syllabi, standards, lesson plans for the classroom, and classroom activities. Retrieving research literature and critically analyzing it have been an integral part of planning for classes or populations of students in the medical profession (Oxman, Sackett, and Guyatt 1993). It usually involves reading the literature and selecting the portions to apply to students. Often subjective criteria were not revealed in the final distribution or conclusion from the review. Rarely did the teacher in the classroom, nor the research professor answer questions in the classroom based on literature reviewed specific to an individual's situation.

Evidence-based language practice has not been introduced as of yet. It focuses on providing answers to student questions and answers from others based on the most recent and valid literature. The terminology used is usually from the field of linguistics and thus is often not familiar to the teacher who has been prepared with a liberal arts or social science perspective on education. It is important to realize why the concept of evidence-based education should be developed and promulgated. The rapid explosion in knowledge and recent changes in communication and technology have worked synergistically to make this opportunity available and viable. Computer systems have been built for storage and access to new literature. The internet has made knowledge readily available. It has created a whole new communication

system. With the availability of these new tools, there has been a realization that research data can and should be the basis of practical classroom management.

Historically, teachers have answered questions and planned instruction by first reflecting on their own practices, consulting a text, looking at the relevant portion of the institution's procedure book, or perhaps even asking an expert (Black 1998). The standard of instruction was based on an intuitive background, a strong grounding in educational methodology and years of teaching practice. When teachers wanted an answer, they looked up the question in a text or consulted an expert. What was leaned in school is fine but currently (days, weeks, or years later), the information may be inaccurate, incomplete, outdated, or outmoded. Current research findings exist and are readily available to answer questions from students, teachers and others. We simply need to access them to determine whether they meet our specific educational needs.

Language education should embrace evidence-based practice but not discard the fine preparation in research that has taken place in schools of education over the years. The understanding of research design and critical analysis of studies that has been an integral pat of educational traditions and must be retained as we embrace the principles of evidence-based practice. If we are able to understand evidence-based principles and integrate them with our

current critical analysis of studies, evidence-based educational practice holds the promise of making radical positive changes in education. We must keep what has worked and build on it.

The Methodology

Evidence-based practice is an approach to teaching and learning that is based on knowledge and strength of the evidence on which practice is based (McGuckin 1998). It involves defining a problem, identifying the needed information, conducting a literature search, critically appraising the literature using the principles of evidence based practice, identifying the applicable data, and applying it to the student (see Box 1).

Evidence-based practice demands that the teacher use the educational acumen developed in school and classroom experience, including current knowledge of such areas as psychology and sociology to determine whether the findings of the research are applicable to the student or student population at large. This strategy does not replace classroom expertise; it enhances it.

Box 1. Steps in the evidence-based approach

1) Define the problem
2) Identify-the needed information
3) Conduct a literature search
4) Critically appraise the literature
5) Identify the applicable data
6) Determine if it applies to the situation
7) Apply it to the student, when appropriate

The questions to be answered by this approach are. (1) Is the study valid? (2)

What were the results? and (3) Do the results apply to my student(s)?

The first step is defining the problem. With evidence-based practice, the problem to be solved is formulated as a question and the question drives the literature review. The statement of the problem is critical to the literature search. Included in the problem are the student description, the problem to be examined, the comparative approaches to be used and the outcome of interest. A statement might read: “For students with verb choice problems (student description), would it be preferable (outcome) to use a phrasal verb as opposed to a single word verb (comparative approach)?”

The literature search is then conducted based on the question mat has been formulated. Each search system uses slightly different methodology, and the user is encouraged to become familiar with his or her institution’s system. Taking the time initially to lean the system saves the user hours of wasted time and the indescribable frustration of receiving too broad or too narrow a search. The goal of the literature search is to obtain the mist accurate research data available.

The literature then is evaluated systematically using a standardized approach. The core of the evaluation is to determine the validity of the findings. The study design is used as the initial screen to examine validity. Generally, study designs with more control have higher levels of validity. The highest level of the evidence is produced by a randomized double blind study, next cohort studies, and then control studies. The lowest level of data is provided with case studies. (Hayward, Wilson, and Tunis 1995)

In the evidence-based methodology, studies are divided into those that address specific language problems. Integrated studies are presented as a systematic overview, meta-analysis, economic evaluation, guideline, or a decision analysis. For each type of study, the founder of the evidence-based approach recommend specific question for appraisal of me internal validity of the research (see Boxes 2-5).

Box 2. Critical Appraisal of Course of Action Studies

Are the findings valid?

Primary Guides

Was assignment of students to studies randomized?

Were all of the students who entered the study accounted for?

Was follow-up complete?

Secondary Guides

Were students, instructors, and study personnel "blind" to action?

Were the groups similar at the start of the study?

What were the results?

How large was the effect?

How precise was the estimate of the effect?

Will the results help me to help my students?

Can the results be applied to my students?

Were all important outcomes considered?

Are the benefits worth the additional study time and work on the part of the student?

Box 3 Critical Appraisal of Diagnostic Studies

Are the results of the study valid?

Primary Guides

Was there an independent, blind comparison with a reference standard?

Did the sample include an appropriate spectrum of students?

Secondary guides
Were the methods for performing the study described in sufficient detail to permit replication?

What are the results?
Is data necessary for any type of calculations?

Will the results help me to help my students?
Will the reproducibility of the study and its interpretation be suitable for my situation?
Are the results applicable to my students?
Will the results change my teaching methods?
Will students be better off as a result of the study?

Box 4 Critical Appraisal of Prognostic Studies

Are the results of the study valid?
Primary guides
Was there a well-defined and representative sample of students in the study?
Was follow-up long and complete?

Secondary guides
Were objective and unbiased outcome criteria used?
Was there adjustment for important prognostic factors?

What are the results?
How large is the likelihood of the outcome event(s) in a specified period of time?
How precise are the estimates of likelihood?

Will the results help me to help my students?
Were the students in the study similar to my own?
Will the results lead directly to selecting a course of action?
Are the results useful for advising students?

Box 5 Guidelines for Critical Appraisal of Validity of Articles Integrating Studies

Overview
Did the review address a well-focused question?
Were the criteria used to elect articles for inclusion explicit and appropriate?

Practice Guidelines
Were the options and outcomes clearly specified?
Did the guidelines use and explicit process to identify, select, and combine elements?

Decision Analysis
Did the analysis faithfully model an important decision?
Was valid evidence used to develop probabilities and utilities?

Economic Analysis
Were two or more clearly described alternatives compared?
Were the expected consequences of each alternative based on valid evidence?

How does the evidence-based practice differ from the classic social science research?

Evidence-based practice is proposed as a simple, standardized process for a critical analysis of the research literature and application to language educational uses. The current focus on outcomes research has supported its use.

There are some differences in the terminology used for evidence-based practice and that used with the classic social science research. Variables in the evidence-based practice are called predictors and outcomes. In the quantitative world these are independent and dependent variables. There are also some differences in design terminology. Evidence-based practice uses the designs: crossover, experimental, cohort, case-control design, and case study. Parallel research designs in the medical model are experimental, quasi-experimental, correlational, and descriptive. The social science paradigm includes qualitative designs (grounded theory, phenomenology, ethnography) that are designed to describe and explore phenomena in a naturalistic setting. The qualitative approach is designed for therapy generation, but because it most often does not impose control in the situation, the evidence-based model considers this lower level date.

Another major difference deals with the critical analysis that is used to examine studies. The experimental and quasi-experimental model usually examines the study design's internal and external validity. Internal validity addresses whether the results of the study can be attributed to the action of the independent variable and not other factors. The design is a major factor in

determining whether internal validity is threatened. External validity is the degree to which the study findings can be generalized to the to the target student population. How representative the sample is of the student population of interest in a major factor in external validity. Threats to internal and external validity are listed in Box 6.

Box 6. Threats to Internal and External Validity

Threats to Internal Validity
History
Selection
Maturation
Testing
Instrumentation

Threats to External Validity
Hawthorne effect
Novelty effect
Experimenter effects
Measurement effects

Understanding these more detailed threats allows the teacher to evaluate the validity of the study more objectively and use a standardized approach. The reader is referred to a language research text for review of this content. Probably the other major way that evidence-based practice differs from the classic social science research is the findings are expressed as confidence intends rather than p values. Confidence intervals allow the reader to appreciate the precision of sample estimates. For example, a 95% confidence interval is an estimate of the population parameter 95% of the time. A higher confidence level (99%) is more likely to

include the population estimate than a lower one (90%). Confidence levels are set prospectively by the investigator when the study is designed.

Conclusions

Evidence-based practice allows the teacher to provide instruction based on the most recent and valid research literature. It is a simple, standardized procedure for critical analysis of the literature and application to practice that builds on and enhances classroom expertise.

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