TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER
School of Nursing

Strategies to Advance Evidence-Based Teaching

Carol Boswell, EdD, RN, CNE, ANEF, FAAN

February 21-23 2019
Master's Education Conference
Master's Education: The Future is Now
American Association of Colleges of Nursing
Tampa, FL.

Carol.Boswell@ttuhsc.edu

1

Objectives and COI

The presenter has no conflict of interest to declare.

Identified Gaps: Knowledge related to this evidence-based teaching continues to be a concern. Faculty members tend to teach as they were taught. This process does not reflect evidence-based teaching.

Description of current state: The Institute of Medicine has challenged healthcare to have 90% of all health care activities based on evidence by the year 2020. Education must provide a firm foundation for achieving this goal. Only when faculty members use evidence-based teaching strategies will evidence-based practice be achieved.

Description of desired/achievable state: The purpose of this presentation is to provide discussion concerning the process of evidence-based teaching (EBT). It will utilize three to four teaching strategies currently being used within nursing education to demonstrate the process for EBT and stimulate dialogue to advance nursing education.

YOUR LIFE well prepared

2

Let's Talk about Evidence-Based Ideas

- Evidence-based Practice – foundation for effective practice
- Evidence-based Teaching – advancing scholarship in education
- Lifelong pursuit of knowledge
- Challenge of preparing next generation

Level of Evidence + Quality of that Evidence = Confidence to Act and Change Practice

Statement of interest

"All the rhetoric about passionate teaching and whether professors care about or value teaching is meaningless if they are bad or ineffective teachers"

(Wexler, n.d., para 4)

- Move from idea that anyone can teach
- Move toward idea that effective and productive teaching is founded on sound, defensible strategies

Dynamic, holistic system using educational principles validated by evidence to support, maintain, and promote a new level of knowledge for a learner in a variety of settings. (Cannon & Boswell, 2016)

Standards and Expectations

NLN

- Use of evidence by nursing faculty to inform
  - *What to teach*
  - *How to facilitate and evaluate student learning*
  - *How to design nursing curricula and programs to promote the education of nurses*
- Evidence
  - *Research findings*
  - *Literature*
  - *Professional judgment and expertise*
  - *Student preferences and values*

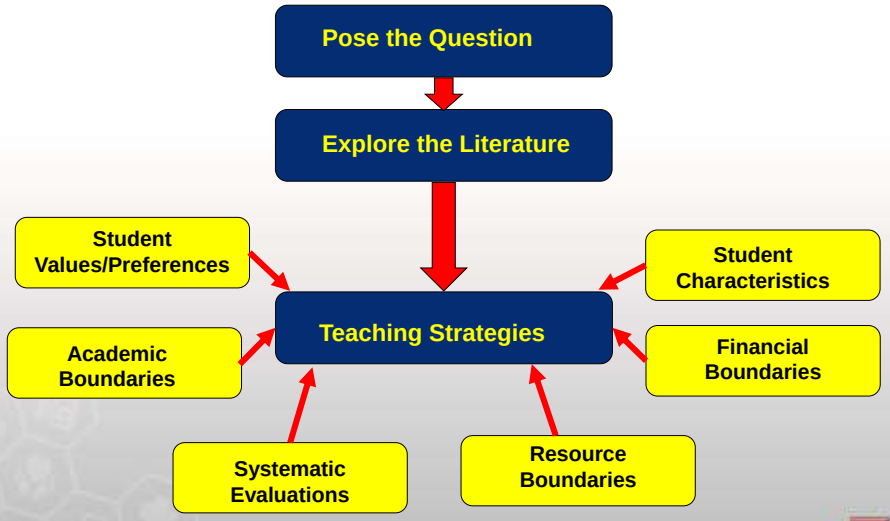
5

Standards and Expectations

- American Nurses Association: Nursing Scope and Standards of Practice
- Quality and Safety Education for Nurses – QSEN
- Core Competencies for Interprofessional Collaborative Practice – Interprofessional Education Collaborative Expert Panel, 2011

6

Schematic for Evidence Based Teaching



Comparison of EBP and EBT

Evidence-Based Practice	Evidence-Based Teaching
Ask the clinical question using the PICOT format: P (population), I (intervention), C (comparison), O (outcome), T (time)	Pose the education question using the PSCOT format: P (population), S (strategy), C (comparison), O (outcome), T (time)
Explore the evidence available to determine the best practice using a critical appraisal approach	Explore the evidence available to determine the best practice using a critical appraisal approach
Consider individual clinical expertise and client preferences/values as interventions are deliberated	Integrate teaching expertise with the students' characteristics, preferences, and values in the teaching/learning environment as solutions and ideas are formulated
Instigate clinical changes as needed within the parameters of the resources and stakeholders	Initiate educational modifications as needed within the academic, financial, and resource boundaries
Appraise the change in regard to patient satisfaction, financial considerations, institutional considerations, and professional considerations	Consider the changes based on key performance criteria identified with the systematic evaluation for the academic setting

Source: Adapted from Emerson, R. J., & Records, K. (2008). Today's Challenge, tomorrow's excellence: The practice of evidence-based education. *Journal of Nurse Education, 47*(8), 359–370.

Next Steps in EBT


- PSCOT determined
- Search for Evidence related to PSCOT
- Analyze evidence found (ranking of evidence)
- Identify key concepts and facets
- Balance the individualization of the process
- Integrate academic, financial, and resource boundaries



Fundamental Questions to consider

1. What does it mean "to learn"? How can we measure learning?
2. What teaching methods are needed to be effective with busy health professionals?
3. What cognitive/affective and environmental factors must be considered for EBT?
4. What are the essential elements of effective teaching?
5. Is there a way for us to formulate a list of EBT competencies?

EBP Question

P = Population

I = Intervention(s)

C = Comparison intervention(s)

O = Outcome(s)

T = Time

PSCOT Format for Questions

✓P = Population

✓ S = Strategy (Strategies)

✓ C = Comparison strategy (strategies)

✓ O = Outcome(s)

✓ T = Time period

PSCOT Examples

P = First Semester Students
S = Use of care maps
C = Use of care plans
O = Improved pathology comprehension
T = (none used)

P = Students addressing clinical content
S = Use of Simulation experiences

C = Clinical provided on designated clinical site
O = Improved knowledge of clinical principles
T = (none used)

YOUR LIFE and purpose

13

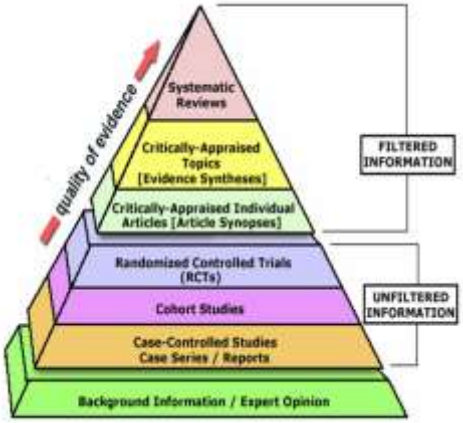
Results

Intervention or treatment effect

- Odds Ratio (OR) The odds ratio is a statistic defined as the ratio of the odds of A in the presence of B and the odds of A without the presence of B. This statistic attempts to quantify the strength of the association between A and B.
- Relative Risk (RR) The ratio of the probability of an outcome in an exposed group to the probability of an outcome in an unexposed group
- Effect Size A quantitative measure of the strength of a phenomenon
- Level of Significant
- Confident Interval (CI) A range of values we are fairly sure our true value lies in.

14

Level of evidence



This Photo by Unknown Author is licensed under CC BY-SA

Brain Twisters

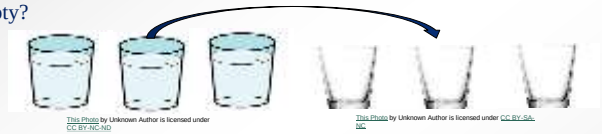
1. Do they have a fourth of July in England?
2. Six glasses are in a row, the first three are full of juice, the second three are empty. By moving only ONE glass, can you arrange them so they are full, empty, full, empty, full, empty?
3. You throw away the outside and cook the inside. Then you eat the outside and throw away the inside. What did you eat?
4. Rearrange the letters in the word – “new door” to make one word.

Brain Twisters

1. Do they have a fourth of July in England?

Answer – YES Why not?

2. Six glasses are in a row, the first three are full of juice, the second three are empty. By moving only ONE glass, can you arrange them so they are full, empty, full, empty, full, empty?



This Photo by Unknown Author is licensed under CC BY-NC-ND

This Photo by Unknown Author is licensed under CC BY-SA-NC

3. You throw away the outside and cook the inside. Then you eat the outside and throw away the inside. What did you eat?

Answer – an ear of corn

4. Rearrange the letters in the word – "new door" to make one word.

Answer – ONE WORD

17

Flipped Classroom

- Hessler (2016) – informational article not research
  - Defined as "pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides the students as they apply concepts and engage creatively in the subject matter" (p. 18)
  - Maximizes the time students and faculty have face-to-face
  - Focuses on using time in a meaningful and intentional manner
  - Began in K-12 learning environment
  - Allows for different learning styles
  - Ability to use technology
  - Requires an understanding of technology
  - Requires more faculty prep time

18

Flipped Classroom

- Eight research/meta-analysis articles located – published in 5 years.
- Schlairer, etal, (2014)
  - Helps to develop students as active participants
  - Promotes information transfer
  - Active and collaborative learning; self-directed learning
  - Shows to improve examination scores and course pass rates but not student satisfaction
  - Requires institutional administrative support and academic freedom
  - Requires dedicated in-house IT specialist
- Persky etal (2017)
  - Designed to develop higher order thinking in students
- Buxton etal (2016)
  - Also called hybrid (20% replaced), blended, flipped
  - Faculty serve as facilitator, coach, or navigator
  - Single most identified advantage – flexibility of time
  - Faculty responses – computer skills, time management, communication and facilitating skills

19

Flipped Classroom

- Islam etal (2018)
  - Allows for increased level of interactivity among students
  - Number of studies reflect no significant difference in learning outcomes
  - Students accept method very well
  - Lack of facilities, poor network and instructional development skills can hinder adoption
- Dabney and Mitchell (2017)
  - Mixed results in nursing education
  - Higher examination scores and better student engagement noted
  - Increased student frustration and decreased satisfactory documented
  - Favorite aspects – in-class activities and understandability of content
  - Least liked aspects – missed traditional lectures and disliked group work

20

Flipped Classroom

- Gillette etal (2018) – meta-analysis comparing flipped classroom to lecture
  - Database provided 255; additional sources identified 17
  - Resulting: qualitative = 6; quantitative = 5
  - Inconclusive on results
  - Concerns about faculty and student time commitments
  - Small gains in student learning

- Hoover etal (2018)
  - Requires students to complete preclassroom learning independently and apply knowledge gained in an advanced level of discussion during active learning strategies in classroom
  - Level of readiness for advanced discussion needs further research
  - Perception of preparedness and readiness for engaging does not translate to comprehension of content gained from preclass assignments

OSCE

- Four articles 2017-2018
- Objective Structured Clinical Examination (OSCE) – valuable, resource-intensive method, used to evaluate clinical competences for students in health disciplines; first described 1975;
- Popular with medicine, nursing, pharmacy, dentistry, physical therapy and occupational therapy
- Important component for NP education – controlled venue, evaluate practice-based competencies; demonstrate professional skills and diagnostic reasoning in clearly defined clinical scenarios
- Objective, reliable, and valid evidence showing professional knowledge, skills, and attitudes
- Barriers
  - Considerable resource investments
  - Traditional checklists used critiqued as being subjective and prone to marking errors and omissions
  - Student anxiety levels

OSCE

- Use of OSCE stations – focused assessment (focused history, physical examination, health promotion counseling); integrated stations (comprehensive assessment, determine differential diagnosis, communicate management plan)
- Self-directed learning encouraged
- Procedure and question stations – procedure (examiner observed activities); question (unobserved activities)
- OSCE – one of most valid, reliable and effective tests to measure cognitive, interpersonal, communication, and psychomotor skills; viewed as fair and comprehensive means of evaluation
- OSCE and conventional examinations both have advantages and disadvantages; Faculty comfort with implementation big aspect
- OSCE viewed as STRESSFUL experience and intimidating by considerable percentage of students

23

Just in Time

This Photo by Unknown Author is licensed under CC BY-SA-NC

- Two articles located within the last 5 years
- Both articles – information, not research
- JiTT (Just-in-Time Teaching) (Clark, 2016)
  - Students answer small set of web-based questions over content
  - Instructor reviews
  - Determines target learning gaps or areas of confusion
  - Adjusts classroom lessons to needed content
  - Applicable to variety of content
  - Can be combined with other student-centered teaching strategies
  - Must have effective questions as per-course activity (15-30 minutes)
- Research available on topic
  - De S, Kavitha, Kanagasabai (2004) – JiTT superior to traditional teaching, less monotonous, increased alertness during class, more interactive, student-centered
  - Wanner (2015) – increased interaction, challenges – students struggled with exercised, questions difficult to answer, lack of understanding about assignment, exercise descripted as daunting and not useful,

24

Just in Time

- Twelve Tips (Hinkle, Fettig, Carlos, & Bosslet, 2017)
- Effective strategy with clinical settings
- Tips:
  - Recognize communication skills can be taught and developed
  - Assess learner's level of communication skills
  - Assess learner's understanding of clinical setting
  - Align educational needs with assigned roles
  - Review agenda with learners
  - Individualize skill based learning goals
  - Check communication skills relevant to learning goals
  - Set learner up for success
  - Be active during the session
  - Be prepared to support learner within the process
  - Debrief after the encounter
  - Develop action plan to improve skills

This Photo by Unknown Author is licensed under CC BY-SA

25

This Photo by Unknown Author is licensed under CC BY-SA-NC

TeamSTEPPS

- One systematic review and one informational text within last 5 years
- Strategy to enhance performance and patient safety
- Not listed as teaching strategy but as topic which needs to be taught
- Developed by Department of Defense and the Agency for Healthcare Research and Quality (AHRQ)
- Team building program with tools and strategies based on research, expert opinion, and lessons learned
- Teamwork defined

This Photo by Unknown Author is licensed under CC BY-SA-NC

26

TeamSTEPPS

- ✓ Systematic Review – 146 records identified from databases, 1 additional one added, 43 unduplicated records, 18 exclude from review, 14 full-text articles excluded, 11 studies included in qualitative synthesis
- ✓ Used Medical Education Research Study Quality Instrument (MERSQI) with Newcastle-Ottawa Scale Education (NOS-E) to appraise quality of studies
- ✓ Length of programs found to be between 3 to 8 hours with one having multiple sessions
- ✓ Simulation scenarios used in all but 3
- ✓ Patient encounter simulated in all studies
- ✓ SBAR used to communicate (Situation, background, assessment, recommendation)
- ✓ Debriefing found in all studies
- ✓ Nine of the studies used one established outcome instrument to evaluate program
- ✓ Found that not all content may be applicable to all learners, needs to be adapted for group needs

27

Tips for Nurse Educators to Use

•Be knowledgeable about EBP and EBT in relation to definitions, steps, similarities, and differences.

•Explore your own values regarding what critical thinking is and whether you believe it can be taught.

•Connect with a librarian to obtain current, accurate sources for EBT.

•Identify how you critically appraise content to be taught.

YOUR LIFE

28

Resources

Appling, S. E., Naumann, P. L., & Berk, R. A. (2001). Using a faculty evaluation triad to achieve evidence-based teaching. *Nursing & Health Care Perspectives, 22*(5), 247−251.

Buxton, T., Buxton, J., & Jackson, A., (2016). Hybrid and flipped strategies in a blended RN-BSN program: Determining student and faculty perceptions. *Nurse Educator, 41*(1), 1-2. Doi: 10.1097/NNE.0000000000000183

Cannon, S. B., & Boswell, C. A. (2016). *Evidence-Based Teaching in Nursing: A Foundation for Educators* (2nd ed.). Sudbury, MA: Jones & Bartlett Publishers.

Clark, K.R., (2016) Just-in-time teaching. *Radiologic Technology, 887*(4), 465-467.

Emerson, R. J., & Records, K. (2008). Today's challenge, tomorrow's excellence: The practice of evidence-based education. *Journal of Nursing Education, 47*(8), 359−370.

Giustini. D., (2010). Evidence-based teaching (EBT) and health librarians: some questions and considerations. *JCHLA/JABSC, 31.*7-10.

Hessler, K.L. (2016). Flipping the classroom. *The Nurse Practitioner, 41*(2). 17-27. Doi: 10.1097/01.NPR.0000476373.04620.33.

Hinkle, L.J., Fettig, L. P. Carlos, W.G., & Bosslet, G., (2017). Twelve tips for just in time teaching of communication skills for difficult conversations in the clinical setting. *Medical Teacher, 39*(9), 920-925. Doi: 10.1080/0142159X.2017.1333587.

Hoover, C.A., Dinndorf-Hogenson, G.A., Peterson, J.L., Tollefson, B.R., Berndt, J.L., & Laudenbach, N., (2018). Flipped classroom: Do students perceive readiness for advanced discussion? *Journal of Nursing Education, 57*(3), 163-165. Doi: 10.3928/01484834-20180221-07.

Institute of Medicine, (2010) *The future of nursing: Leading change, advancing health.* Institute of Medicine: Washington, DC.

Islam, M.N., Salam, A., Bhuiyan, M., & Daud, S.B., (2018). A comparative study on achievement of learning outcomes through flipped classroom and traditional lecture instructions. *International Medical Journal, 25*(5), 314-317.

Kalb, K.A., O'Conner-Von, S.K., Brockway, D., Rierson, C.L., & Sendelbach, S. (2015). Evidence-based teaching practice in nursing education: Faculty perspectives and practices. *Nursing Education Perspectives, 36*(4), 212-219. Doi: 10.5480/14-1472

Khan, R., Payne, M.W.C., & Chahine, S., (2017). Peer assessment in the objective structured clinical examination: A scoping review. *Medical Teacher, 39*(7). 745-756. Doi: 10.1080/0142159X.2017.1309375.

Resources

Luimes, J.D., & Labrecque, M.E., (2018). Implementation of electronic objective structured clinical examination evaluation in a nurse practitioner program. *Journal of Nursing Education, 57*(8). 502-505. Doi: 10.3928/01484834-20180720-10.

Melnyk, B.M., (2016). Level of evidence plus critical appraisal of its quality yields confidence to implement evidence-based practice changes. *Worldviews on Evidence-Based Nursing, 13*(5). 337-339. Doi: 10.1111/wev.12181.

Persky, A.M. & McLaughlin, J.E., (2017). The flipped classroom – From theory to practice in health professional education. *American Journal of Pharmaceutical Education, 81*(6), Article 118.

Schlairet, M.C., Green, R., & Benton, M.J., (2014). The flipped classroom: strategies for an undergraduate nursing course. *Nurse Educator, 39*(6), 321-325. Doi: 10.1097/NNe.000000000000096.

Siddaram, S. & Anil, S., (2018)/ A comparison analysis between objective structured clinical examination (OSCE) and conventional examination (CE) as formative evaluation tool. *International Journal of Nursing Education, 10*(3), 102-105. Doi: 10.5958/0974-9357.2018.00076.4

Tullai-McGuinness, S., (2015). TeamSTEPPS: A path to high functioning teams. *Ohio Nurses Review.*

Waller Dabner, B. & Mitchell, R. (2017). Flipping an undergraduate gerontological nursing course: Student perceptions. *Nursing Education Perspectives, 38*(6). 340-341. Doi: 10.1097/10.NEP.0000000000000209.

Welsch. L.A., Hoch, J., Poston, R.D., Parodi, V.A., & Akpinar-Elci, M., (2018). Interprofessional education involving didactic TeamSTEPPS and interactive healthcare simulation: A systematic review. *Journal of Interprofessional Care, doi: 10.1080/13561820.2018.1472069*


TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER
School of Nursing