Innovative evaluation strategies: Instilling evidence based practice attitudes that will impact future global health outcomes

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Conflicts of Interest

- No COI to report:

  Tonya Breymier

  LaDonna Dulemba

  Gloria Dixon

Symposium Objectives

1) The learner will discuss the impact of evidence based practice attitudes on global health outcomes.

2) The learner will discuss innovative end-of-program learning outcome assessments that evaluate evidence based practice attitudes.

A Culture of Evidence-Based Practice (EBP)

- ICN recognized the impact of nursing EBP contributions to global healthcare.
- Barriers include:

  Adopting an EBP mindset (individual)

  Application to practice

  Continue to struggle with adoption of an EBP culture

Part 1

Program Assessment of EBP Attitudes

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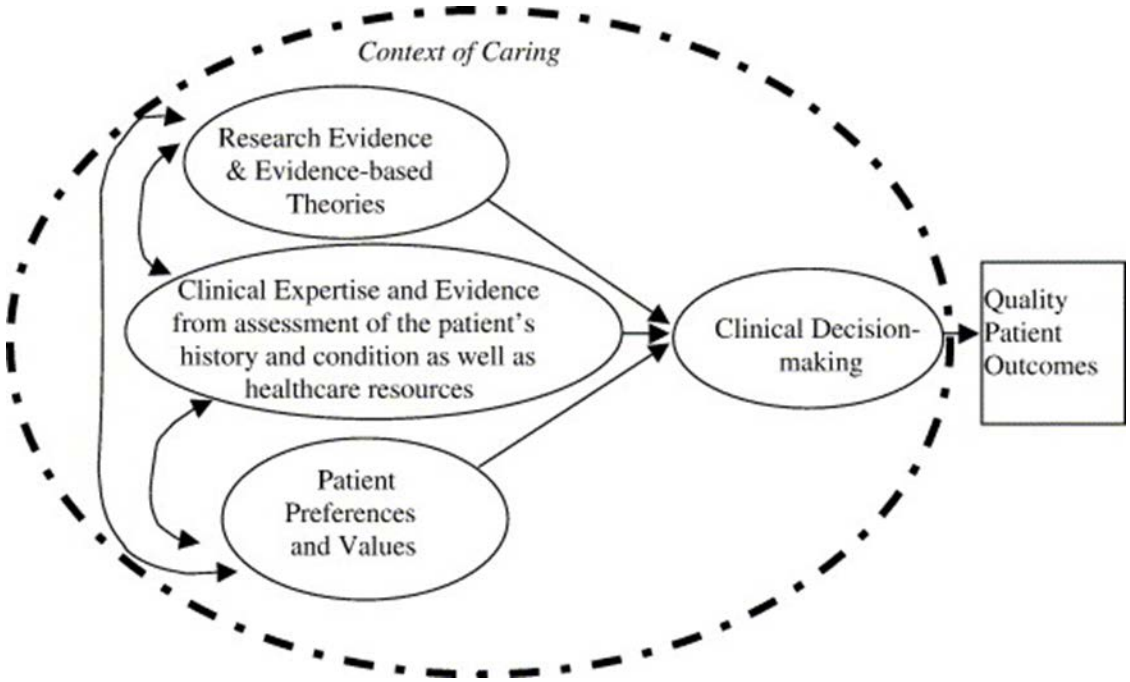
Part 1 Objectives

1. The learner will appraise the value of program outcome assessment on EBP attitudes
2. The learner will analyze program outcome assessment of EBP attitudes toward global health outcomes
    - *Review of evidence on EBP attitudes in nurses*
    - *Use of program assessment to support EBP enhancement of global health outcomes*
3. The learner will examine technology initiative incorporated into program outcomes assessment
    - *Evidence to support student understanding of program outcome assessment*
    - *Utilization of an electronic defense project initiation*

Value of program outcome assessment on EBP attitudes

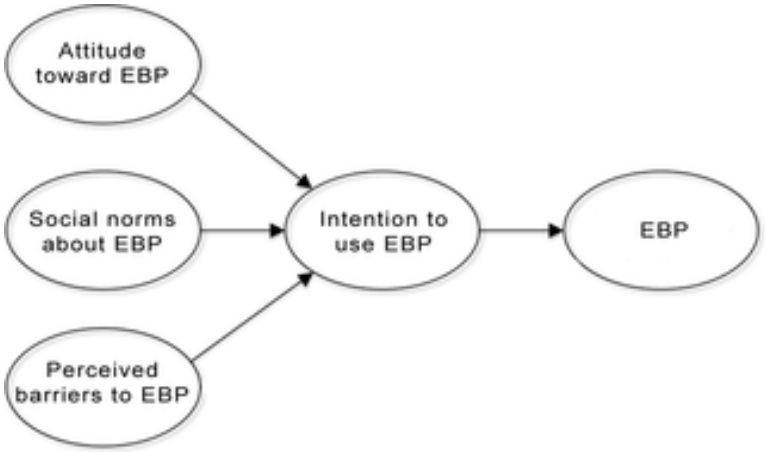
- Current research results
- Impact of EBP knowledge, skills, behaviors

Impact of EBP on Patient Outcomes



Fineout-Overholt, E., Melnyk, B.M, & Schultz, A. (2005).

Program Outcome Assessment of EBP Attitudes Toward Global Health Outcomes



Barends, E., Villanueva, J., Rousseau, D.M., Briner, R.B., Jepsen, D.M., Houghton, E., et al. (2017).

Use of Program Assessment to Support EBP Enhancement of Global Health Outcomes

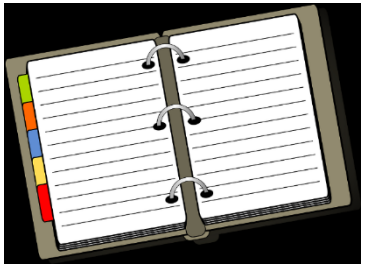
In Nursing Curriculum

&

In Nursing Practice

Technology Initiative Incorporated into Program Outcomes Assessment

History of PLO Assessment at IU East



2010 — 2014 — 2016

Evidence to Support Student Understanding of Program Outcome Assessment

What is an electronic defense?

Utilization of an electronic defense

Final Reflection Rubric	Points
Learner identifies how each MSN program outcome was met or not met during the practicum experience. Shares experiences for support.	20
Learner identifies how each MSN Essential was met or not met during the practicum experience. Shares experiences for support.	20
Learner identifies how each NLN Nurse Educator Competency was met or not met during the practicum experience. Shares experiences for support.	20
Learner presents evidence-based support (literature citations) where warranted.	20
Learner presents evidence examples (assignment) to support defense.	20
Total Points	100

Student E-Defense Examples

Program Outcome 8 Demonstrate collaborative practice and interpret nursing science within an interdisciplinary context.

MSN Essentials

Essential VII *Interprofessional Collaboration for Improving Patient and Population Health*

Essential VIII *Clinical Prevention and Population Health for Improving Health*

Essential IX *Master's-Level Nursing Practice*

NLN Nurse Educator *Competencies* 1,2

- Bridge Clinical experience: Counselor, Medical Physician, Psychiatric Physician, NPs, RNs, and Case Management.
- Teaching Plans @ Bridge Clinical
- Post Conference after clinical day

Program Outcome 7 **Systematically apply evidence from research findings to answer clinical questions, solve clinical problems, and develop innovative nursing interventions and health policies for selected patient populations.**

MSN Essential IV Translating and Integrating Scholarship into Practice

Essential IX Master's-Level Nursing Practice

NLN Nurse Educator Competencies 3,4

- Implementation of Dr. Linda Caputi's clinical vital signs activity (MPO #7, NLN #3, NLN #4, E IV, E IX)

Vital Signs Activity

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"This week was exciting because we were implementing the vital signs activity that Dr. Caputi included in her presentation. Overall, I think the students enjoyed the activity. There was one student that commented about their patient having sixteen medications and how time consuming it was to look at all of the effects of those medications. However, I thought that was a great way to show the significance of the activity and how when they enter practice they will more than likely have several patients that they will need be able to quickly scan their medications and know which ones may be altering their patients vital signs.

In addition, I really think that the activity made the students delve deeper into other things such as their patient's medical history, labs, and diagnostics. For instance, one student was comparing her patient's vital signs to a previous visit a few months before. They noted that the patients heartrate was in the100's months prior and this visit the patient's heartrate has consistently been in the 40's and 50's. First, the student struggled to identify which particular medicine could affect the patient's heartrate however; she did have it narrowed down to two. Upon further discussion of the medications with the student, they chose the correct one.

We also went on to discuss what else was going on with this patient and their past medical history. For instance, this patient had a history of paroxysmal atrial fibrillation. Knowing this information and based on the patient's trend this visit, we looked for an EKG, which yielded sinus bradycardia. From there it led us to see if any consults ordered based on this information and in this case, yes there was a cardiac consult. That is just one example of one student that I was able to work with on this activity and look at all the information the student was able to obtain! It was a great learning moment for the student and I honestly do not think they would have gathered this information if it were not for the direction of this activity"!

Audience Participation

- The evidence demonstrates the Program Outcome is achieved?
- Use cue cards

Program Outcome 8 Demonstrate collaborative practice and interpret nursing science within an interdisciplinary context.

MSN Essentials

Essential VII *Interprofessional Collaboration for Improving Patient and Population Health*

Essential VIII *Clinical Prevention and Population Health for Improving Health*

Essential IX *Master's-Level Nursing Practice*

NLN Nurse Educator *Competencies* 1,2

- Bridge Clinical experience: Counselor, Medical Physician, Psychiatric Physician, NPs, RNs, and Case Management.
- Teaching Plans @ Bridge Clinical
- Post Conference after clinical day

Poll #1

- **Student-1 demonstrates he/she met the program learning outcome.**

  Yes

  No

Poll #2

- **Student-1 demonstrates he/she understands the program learning outcome.**

  Yes

  No

Program Outcome 7 **Systematically apply evidence from research findings to answer clinical questions, solve clinical problems, and develop innovative nursing interventions and health policies for selected patient populations.**

MSN Essential IV Translating and Integrating Scholarship into Practice

Essential IX Master's-Level Nursing Practice

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Poll #3

- **Student-2 demonstrates he/she met the program learning outcome.**

  Yes

  No

Poll #4

- **Student-2 demonstrates he/she understands the program learning outcome.**

  Yes

  No

Future implications and impact

What is next?

Questions

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Part 2
Scholarly project dissemination to enhance evidence-based practice attitudes for future advanced practice nurses.

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Part 2 Objectives

- The learner will discuss innovative and creative platforms to evaluate EBP attitudes through scholarly project dissemination.
- The learner will evaluate a specific electronic poster presentation rubric.
- The learner will discuss best practices for peer review and future implications toward EBP.

Asking “So-what ?” for a culminating scholarly project

- PICOT question (population, intervention/issue, comparison, outcome, time frame).
- Search for best evidence.
- Analyze and synthesize evidence.

Research course, 4th semester.

- Integrate the best evidence for a practice decision or change.
- Evaluate the outcomes.
- Disseminate the outcomes.

Evaluation and Dissemination alterations.

(Wilson et al., 2016)

Development of EBP Attitudes

- MSN program, three tracks: Education, Administration and FNP.
- Create a culture of inquiry = Acquire EBP knowledge, skills and attitudes = Increases confidence to embrace and engage in EBP projects.
- Dissemination is a key component as well.

The MSN Scholarly Project

- Need for enhanced EBP knowledge, skills and attitudes.
- Project does not necessarily have to be research.
- Poster over podium presentation, best practices for poster presentations.

  Do’s and Don’ts for posters.

Poster Dissemination Rubric (see handout)

- Revised a previous poster rubric.
- Included MSN program learning outcomes section.
- Importance of peer review and reporting peer and faculty comments to students.

PIGS IN SPACE
EFFECT OF ZERO GRAVITY AND AD LIBITUM FEEDING ON WEIGHT GAIN IN CAVIA PORCELLUS

Colin B. Purrington
6673 College Avenue, Swarthmore, PA 19081 USA

ABSTRACT:

One ignored benefit of space travel is a potential elimination of obesity, a chronic problem for a growing majority in many parts of the world. In theory, when an individual is in a condition of zero gravity, weight is eliminated. Indeed, in space one could conceivably follow ad libitum feeding and never even gain an gram, and the only side effect would be the need to upgrade one's stretchy pants("exercise pants"). But because many diet schemes start as very good theories only to be found to be rather harmful, we tested our predictions with a long-term experiment in a colony of Guinea pigs (Cavia porcellus) maintained on the International Space Station. Individuals were housed separately and given unlimited amounts of high-calorie food pellets. Fresh fruits and vegetables were not available in space so were not offered. Every 30 days, each Guinea pig was weighed. After 5 years, we found that individuals, on average, weighed nothing. In addition to weighing nothing, no weight appeared to be gained over the duration of the protocol. If space continues to be gravity-free, and we believe that assumption is sound, we believe that sending the overweight — and those at risk for overweight — to space would be a lasting cure.

INTRODUCTION:

The current obesity epidemic started in the early 1960s with the invention and proliferation of elastane and related stretchy fibers, which released wearers from the rigid constraints of clothes and permitted monthly weight gain without the need to buy new outfits. Indeed, exercise today for hundreds of million people involve only the act of wearing stretchy pants in public, presumably because the constrictive pressure forces fat molecules to adopt a more compact tertiary structure (Xavier 1965).

Luckily, at the same time that fabrics became stretchy, the race to the moon between the United States and Russia yielded a useful fact: gravity in outer space is minimal to nonexistent. When gravity is zero, objects cease to have weight. Indeed, early astronauts and cosmonauts had to secure themselves to their ships with seat belts and sticky boots. The potential application to weight loss was noted immediately, but at the time travel to space was prohibitively expensive and thus the issue was not seriously pursued. Now, however, multiple companies are developing cheap extra-orbital travel options for normal consumers, and potential travelers are also creating news ways to pay for products and services that they cannot actually afford. Together, these factors open the possibility that moving to space could cure overweight syndrome quickly and permanently for a large number of humans.

We studied this potential by following weight gain in Guinea pigs, known on Earth as fond of ad libitum feeding. Guinea pigs were long envisioned to be the "Guinea pigs" of space research, too, so they seemed like the obvious choice. Studies on humans are of course desirable, but we feel this current study will be critical in acquiring the attention of granting agencies.

MATERIALS AND METHODS:

One hundred male and one hundred female Guinea pigs (Cavia porcellus) were transported to the International Space Laboratory in 2010. Each pig was housed separately and deprived of exercise wheels and fresh fruits and vegetables for 48 months. Each month, pigs were individually weighed by duct-taping them to an electronic balance sensitive to 0.0001 grams. Back on Earth, an identical cohort was similarly maintained and weighed. Data was analyzed by statistics.

RESULTS:

Mean weight of pigs in space was 0.0000 +/- 0.0002 g. Some individuals weighed less than zero, some more, but these variations were due to reaction to the duct tape, we believe, which caused them to be alarmed push briefly against the force plate in the balance. Individuals on the Earth, the control cohort, gained about 240 g/month ($p = 0.0002$). Males and females gained a similar amount of weight on Earth (no main of effect of sex), and size at any point during the study was related to starting size (which was used as a covariate in the ANCOVA). Both Earth and space pigs developed substantial dewlaps (double chins) and were lethargic at the conclusion of the study.

CONCLUSIONS:

Our view that weight and weight gain would be zero in space was confirmed. Although we have not replicated this experiment on larger animals or primates, we are confident that our result would be mirrored in other model organisms. We are currently in the process of obtaining necessary human trial permissions, and should have our planned experiment initiated within 80 years, pending expedited review by local and Federal IRBs.

ACKNOWLEDGEMENTS:

I am grateful for generous support from the National Research Foundation, Black Hole Diet Plans, and the High Fructose Sugar Association. Transport flights were funded by SPACE-EXES, the consortium of wives divorced from insanely wealthy space-flight startups. I am also grateful for comments on early drafts by Mañana Athletic Club, Corpus Christi, USA. Finally, sincere thanks to the Cuy Foundation for generously donating animal care after the conclusion of the study.

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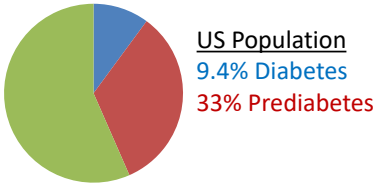
Development of a Pre-Diabetes Knowledge Assessment Tool: The PDUE (Orem Guided) Journey

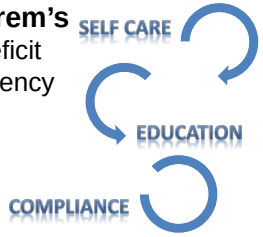
Introduction

- **Diabetes**: Affects all body systems
- Increasing at an alarming rate
- 2015 -30.3 million Americans, or 9.4% of the population, had diabetes.
- 1.5 million Americans are diagnosed with diabetes every year(many undiagnosed)
- 7th Leading Cause of Death in United States
- Cost strain on healthcare $245 Billion
- **Prediabetes:** In 2015, An estimated 33.9% of U.S. adults aged 18 years or older- 84.1 million Americans had prediabetes.
- Pre-diabetes is precursor
  - 9 out of 10 people do not realize they have



Theory

Dorothea Orem's
- Self-care Deficit
- Self-care Agency
- Knowledge



Literature Review

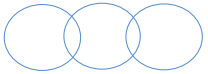
- Effective interventions to slow the progression centered on *Lifestyle changes*
  - Increase exercise
  - Weight loss
  - Eating the appropriate foods and amounts at the correct time intervals
- Barriers to Patient *Self-management*
  - Confusion
  - Socioeconomic status (SES)
  - Health Literacy
  - Poor Communication with their provider
- Providers don't' understand what patients don't understand
  - Provider Fatigue
- Knowledge Deficit is a *Common Theme* throughout the literature
- The data synthesized suggests the need to customize diabetes care based on age, comorbidity, functional health status, and attitudes towards diabetes
- A gap in the literature ---How do providers bridge that knowledge gap to help patients be successful?

Project

- Teaching Patients

Pre-Diabetes Understanding Exam(PDUE)
  - (Mini-Mental Status Concept)
  - PDUE - 8 question test
  - Exercise, weight reduction, blood sugar control, meal planning, & meal timing
  - Identifies knowledge barriers
  - Guides the education efforts
  - Closes the disconnect
  - Aids patient satisfaction

Family Nurse Practitioners



- Evaluation (providers & nutrition educators)
- Potential next steps- Usability study
- Develop more screening & testing

Contribution to Science

High priority to prevent or delay diabetes
- Customized support to the patient
- Education and provider influence for converting prediabetes to normal glucose state
- Self-efficacy for lifestyle intervention
- Reverse or delay progression as well as complications

Peer Review

- Utilize the MSN Poster Dissemination Rubric.
- “So-What?”
- Peer Review Best Practices:

  Skill to be practiced and learned.

  Rubric provides students with a tool to identify key issues (or lack of) and avenue to provide feedback.

  Most effective when students have the opportunity to apply the feedback.

The University of Iowa- Office of Teaching, Learning and Technology. https://teach.its.uiowa.edu/developing-critical-thinking-through-peer-review/peer-review-best-practices

Peer review in your teaching

- Discuss with your neighbor how you currently use peer review.
- Identify one example that you feel will assist with development of knowledge, skills and attitudes for future EBP application.

How do we nurture a Culture of Inquiry?

- Develop inquiring minds
- Begins in semester 1
- Begin literature review (PICOT) in semester 4
- Assigned their Scholarly Project Mentor between semester 4 and 5.
- Scholarly Project semester is semester 6, includes dissemination.


Q&A

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Part 3
Utilizing overall program evaluation data: Innovative steps to enhance evidence-based practice attitudes through curriculum improvement.

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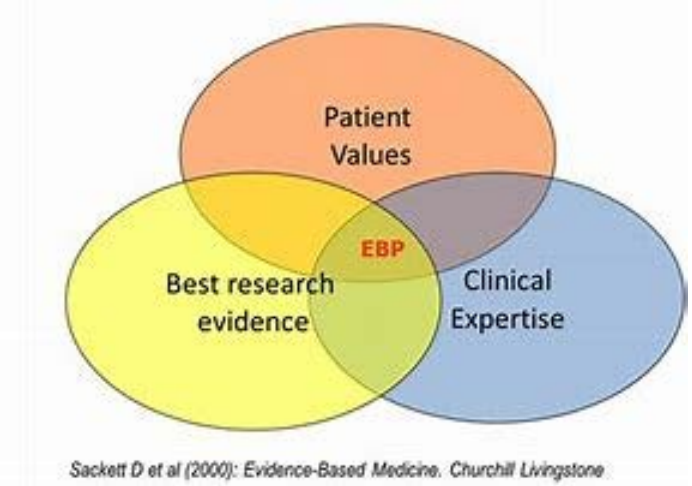
Part 3 Objectives

- The learner will discuss the global impact of EBP on healthcare.
- The learner will discuss evaluation strategies that capture MSN program learning outcomes.
- The learner will identify program learning outcome data and the influence on future curriculum.

Evaluate trends with EBP attitudes and future practices for impact.

- “44% of nurses were confident in their ability to implement evidence-based practice but more than 60% have not utilized EBP to change clinical practice” (Warren, 2016).



Innovative evaluation strategies to capture MSN program learning outcome data.

Outcome rubric embedded within the learning management system (LMS)

- Outcome rubric:

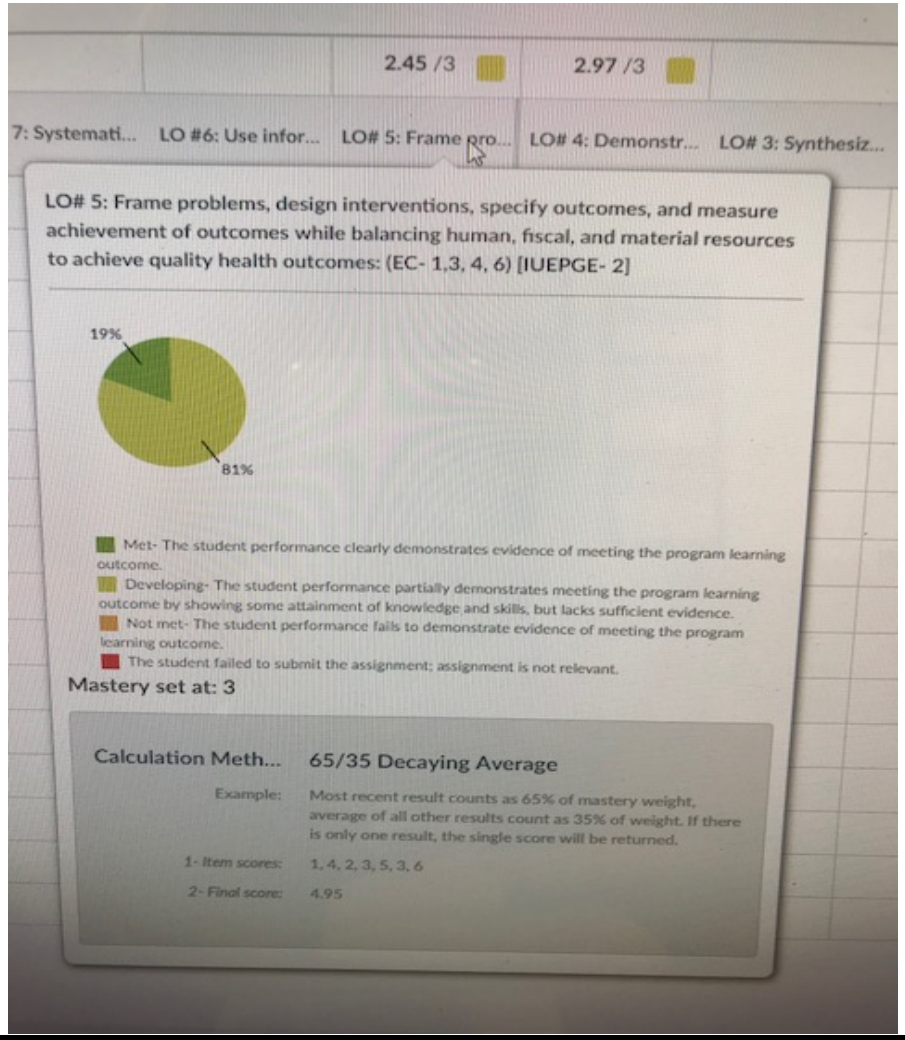
  3- Met- The student performance clearly demonstrates evidence of meeting the program learning outcome.

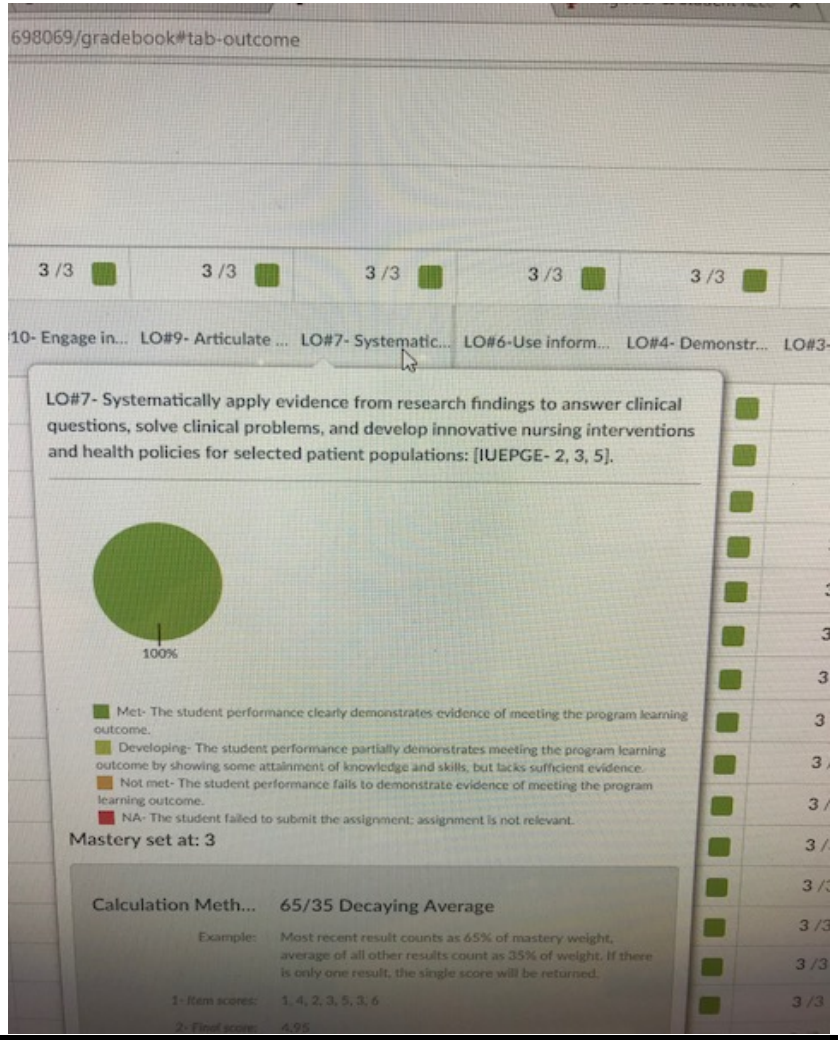
  2-Developing- The student performance partially demonstrates meeting the program learning outcome by showing some attainment of knowledge and skills, but lacks sufficient evidence.

  1- Not met- The student performance fails to demonstrate evidence of meeting the program learning outcome.

  0- NA- The student failed to submit the assignment; assignment is not relevant.

Example from LMS





Data analysis toward overall program learning outcome attainment and application toward future curriculum revisions.

7. Systematically apply evidence from research findings to answer clinical questions, solve clinical problems, and develop innovative nursing interventions and health policies for selected patient populations.					
FNP-NP/FNP Role: **Health Delivery System Competencies** **Ethics Competencies**			**Graduate Principles** 3	Canvas Outcome data R590 Self Reflections Practicum Defenses (F578) Preceptor Evaluations	
Administration	80%	AONE	Graduate Principles	Canvas Outcome data R590 Self Reflections Practicum Defenses (L579) Preceptor Evaluations	
Education NLN Nurse Educator Competencies: **Competency III: Use Assessment and Evaluation Strategies.** **Competency IV: Participate in Curriculum Design and Evaluation of Program Outcomes.**			**Graduate Principles** 2, 3	Canvas Outcome data R590 Self Reflections Practicum Defenses (T679) Preceptor Evaluations	


time for questions

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Conclusion

- Impact of EBI related to program learning outcomes.
  - e-Defense
  - Scholarly Project Dissemination
  - Overall Program Evaluation
- Impact of EBI knowledge, skills and attitudes post-graduation.

Conclusion

- Challenges
- Increase Engagement
- Global Impact and Future of EBP
  - Healthy People 2020
  - Link evidence to real world
  - Create cultures to enhance and sustain EBP

Healthy People 2020, 2018; Melnyk et al., 2012

Questions?

Thank you!

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