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Equity-Oriented Design in a Prelicensure Nursing Course

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The purpose of this quality improvement project (QIP) is to examine student satisfaction with the equity-oriented design of a prelicensure nursing course

Objectives

- Describe how equity-oriented design was incorporated into a nursing course
- Examine student satisfaction with equity-oriented design in a nursing course
- Form a plan to integrate equity-oriented design into a nursing course

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Need

- *There is a need to improve the quality of education for individuals with diverse life experiences, perspectives, and backgrounds (American Association of Colleges of Nursing, 2017).*
- *The achievement gap in educational outcomes based on race, disability, and socioeconomic status continues to widen (Sanderson et al., 2021).*
- *For students with disabilities and those with other diverse learning needs, educational barriers are numerous (Basham et al., 2020).*

Need

- *There are challenges related to educators' understanding of and attitudes about disabilities and issues surrounding accessibility of teaching practices (Marquis et al., 2016).*
- *Hidden classroom curriculum can impact learning outcomes for students who do not have the knowledge, skills, and attitudes to navigate the higher education system (Scherer, 2022).*

Need

- *There is a call to action to “create academic environments where diverse faculty, staff, and students can flourish” (National League for Nursing, 2016, p. 8).*
- *To maximize learning opportunities for nursing students, an **equitable**, **accessible** and **inclusive** learning environment is critical to the multifaceted course design process.*

Rutgers-University-Camden School of Nursing

- Rutgers University prides itself on its “Beloved Community” which is defined by a commitment to work together to embody, reflect, and respect the complexities of all of our parts” (Rutgers University, 2022).
- Rutgers University-Camden is designated as a Minority serving institution (MSI) by the Department of Education (Leong, 2022).
- Rutgers University-Camden is ranked 20th in the nation for upward social mobility by Washington Monthly (2022).

Rutgers-University-Camden School of Nursing

- In Fall 2022, the School of Nursing-Camden served 821 students in its prelicensure programs
 - 56% identified as having an ethnic/racial background from an underserved group
 - 55% identified as first-generation college students
 - 85.9% received financial aid

Rutgers-University-Camden School of Nursing

- 87 prelicensure students in the School of Nursing-Camden used accommodations through the Office of Disability Services during Fall 2022.
 - The number of students at Rutgers identifying with a disability has increased over the past years (Lucas, 2022)
 - The true number of students with diverse learning needs is unknown because nearly half of students with disabilities do not register for support (Gierdowski et al., 2020).

Background

- Students enter nursing programs with diverse learning needs. Variation in student learning needs is normal, as opposed to the exception (Singleton et al., 2019).
- There is no one-size-fits-all to nursing education.
- It is important for nurse educators to intentionally include **equity-oriented design** into pre-licensure nursing courses to meet the needs of all learners.

Equity-Oriented Design (EOD)

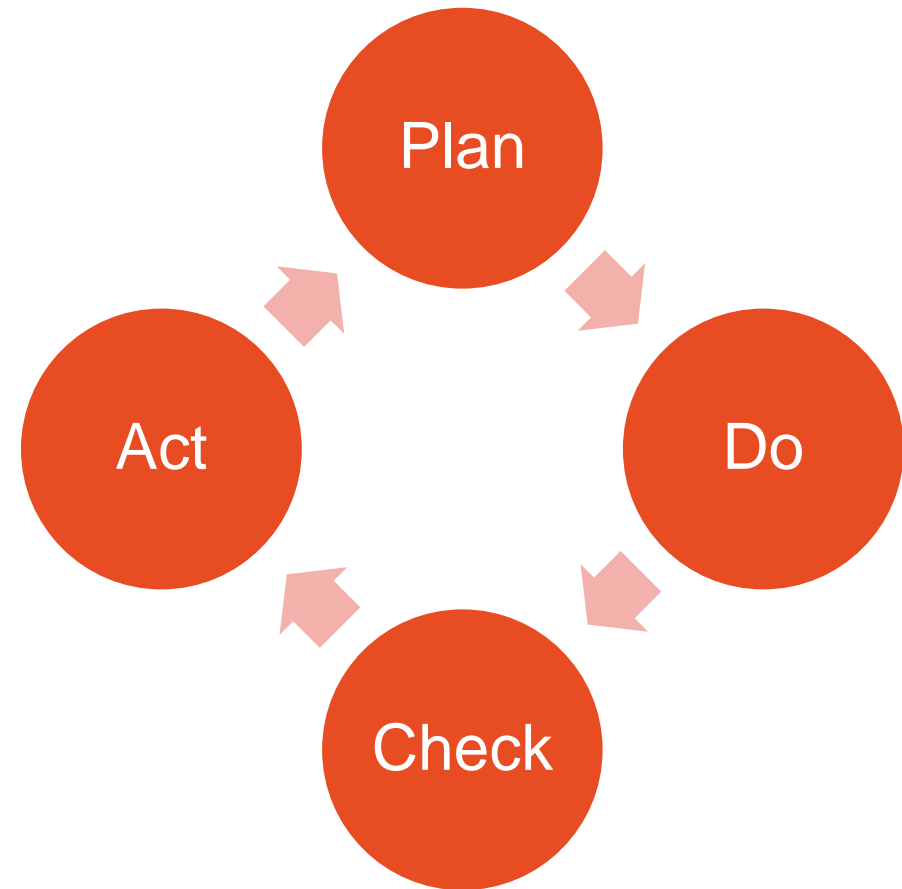
- Educational design principles that support all learners.
- EOD gives every student the opportunity to achieve fair and comparable outcomes regardless of background, ability, or life experience (University of Tennessee Chattanooga, 2023a).

Equity-Oriented Design Quality Improvement Project

- **Who:** Accelerated Bachelor of Science Nursing Students; 59 total students
- **What:** Foundations of Nursing Theory
- **When:** Fall 2022
- **Where:** Rutgers University-Camden School of Nursing
- **Why:** Work on Implementation of Inclusive and Equitable Teaching Practices Badge through the Rutgers University Office of Teaching Evaluation and Assessment Research and the University Equity and Inclusion Office

Methodology

- The Continuous Process Improvement Model, specifically the plan-do-check-act cycle, was used for this quality improvement project.



Plan

- To implement EOD, the following was assessed:
 - General Accessibility
 - Images, Videos, and Voice Recordings
 - Representation
 - Participation
 - Policies
 - UDL-Aligned Teaching Strategies

Plan: General Accessibility

- Accessible design facilitates inclusion.
- “Accessibility is the practice of making information, activities, and/or environments sensible, meaningful, and usable for as many people as possible” (SeeWriteHear, 2022, para 1).
- In relation to nursing education, we need to design courses that provide a student with the ability to interact fully and productively with the content (SeeWriteHear, 2022).

Plan: Accessibility

- To assess the overall accessibility of the course, I used the Canvas integration tool *Ally*, to generate a course accessibility report.
- The report provides:
 - A score to measure the accessibility of content
 - Feedback and support about accessibility issues
 - Information about severity of issues
 - Instructions on how to fix accessibility issues
 - Alternative formats for course content (Blackboard, 2022).
 - With an accessibility course report, you can decide which areas are the most important and the easiest to fix first.

Plan: Images, Videos, and Voice Recordings

- Course materials should be understandable by all learners.
- According to the Web Content Accessibility Guidelines (WCAG) 2.1, information must be presented to users in ways they can perceive (W3C, 2019).
- When WCAG are followed, content becomes more accessible to a wider range of learners (W3C, 2018).

Plan: Images, Videos, and Voice Recordings

- Some easy ways to ensure your course materials like images, videos, and voice recordings are perceivable:
 - Add alternative text to all images
 - Provide captions for videos and voice recordings
 - Use podcasts with transcripts
 - Use text-to-speech technology

Plan: Representation

- Including course materials that represent diverse perspectives such as ethnicity, gender, sexuality, and ability fosters an inclusive classroom (Cornell University, 2022).
- Nursing students come from diverse backgrounds and the need for pedagogical approaches that are theoretically appropriate, equitable, inclusive, and responsive to diverse perspectives has grown (National League for Nursing, 2017).

Plan: Participation

- Class participation is associated with positive learning outcomes (Metzger & Via, 2022)
- Instructors may act on implicit biases related to classroom participation (Metzger & Via, 2022).
- Modifying the “cold call” can result in more equitable participation for all students (Metzger & Via, 2022).

Plan: Policy

- Inflexible deadline policies may prioritize control over learning (Hills & Peacock, 2022) and can compound students' stress at a time when they are already overwhelmed (Boucher, 2016).”
- Inflexible deadlines can create hardships (Hills & Peacock, 2022).
- Flexible deadlines create more accessible and equitable learning opportunities for diverse students (Hills & Peacock, 2022).

Plan: Policy

- Research suggests flexible deadlines may:
 - increase student pass rates
 - Improve participation
 - Improve student achievement
 - Reduce student perception of stress
 - Increase attention to work
 - Improve quality and student perception of the instructor (Hills & Peacock, 2022).

Plan: Policy

- Flexible deadline policies allow students some degree of freedom over when they submit an assignment, without negative consequence and shift power from the instructor to the students (Hills & Peacock, 2022).
- Flexible deadlines allow us to better respect the diverse identities, experiences, and circumstances students bring to learning (Hills & Peacock, 2022).

Plan: UDL-Aligned Teaching Strategies

- Universal Design supports that courses should be useable for a diverse range of people, rather than fitted to the normative ideal of a person (Cumming & Rose, 2021)
- Research shows high student satisfaction and added value with the use of UDL in the classroom (Cumming & Rose, 2021)
- UDL Guidelines are based on scientific insights into how people learn and focus on providing:
 - Multiple means of engagement
 - Multiple means of representation
 - Multiple means of action and expression (CAST, 2018)

Plan: UDL-Aligned Teaching Strategies

- UDL Guidelines are meant to be a set of suggestions to reduce barriers and maximize learning opportunities for all learners (CAST, 2018).
- They should not be used as all or nothing requirements, rather as suggestions to support student learning.
- UDL is indispensable for maximizing learning outcomes, inclusion, and equity (Yaqoubi et al., 2022).

Plan: UDL-Aligned Teaching Strategies

- Some examples of UDL-Aligned teaching strategies:
 - Activities that follow UDL principles (multimodal)
 - Using a voice amplifier
 - Providing a Screen reader
 - Providing classroom recordings
 - Providing outlines for note-taking

Plan: Findings

- Assessment findings:
 - **General Accessibility:** An Ally Course Accessibility Report with an accessibility score of 70%. The area of greatest concern was identified as images.
 - **Images, Videos, and Voice Recordings:** Video and audio materials were not captioned.
 - **Representation:** There is a need for improvement in diverse representation of course materials.
 - **Participation:** There is a need to modify questioning techniques
 - **Policy:** There is a need to change the deadline policy
 - **UDL-Aligned Teaching Strategies:** There is a need for teaching strategies using Universal Design for Learning (UDL) principles.

Plan: Opportunities

- Opportunity to improve equity-oriented design in the course:
 - Adding alternative text (alt text) to all images used in the Learning Management System and classroom presentations
 - Adding closed captions to all video and audio materials
 - Including diverse representation in course materials
 - Modifying questioning techniques
 - Implementing a flexible deadline policy
 - Embedding teaching strategies based on UDL principles

Do

- Carrying out the changes:
 - Alternative text
 - Captions
 - Representation
 - Participation
 - Flexible deadlines
 - UDL-aligned teaching strategies

Do: Alternative Text

- The Ally Course Accessibility Report was used to identify and add alternative text to **192** student facing images.

Course accessibility score

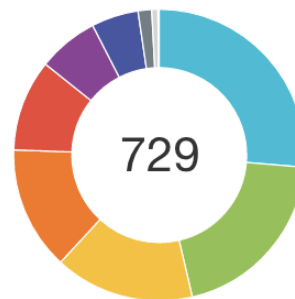


70%

SCORE

2022SP - FOUND NURSING-
THEORY 57:705:212:01

ISSUES



729

IMAGES =
192

Do: Captions

- All video and audio material were uploaded to Kaltura to generate closed captions and other accessibility features.
 - Automated Speech Recognition (ASR) machine transcription for accessibility compliant captions
 - WCAG-specified text and controls
 - Keyboard shortcuts
 - Sliders for play and volume control
 - Screen reader support
 - Compatible across devices (Kaltura, n.d.)
- Only podcasts with transcripts were selected for use in the course.

Do: Representation

- To improve diverse representation in course materials, gender neutral language was infused where appropriate and readings, images, videos, and assignments were diversified to include variations in race, ethnicity, age, gender, sexuality, and ability.

Do: Representation

- Nurse educators must be mindful of their own values and beliefs in meeting the needs of their students (National League for Nursing, 2016).
- Nurse educators are responsible to take advantage of opportunities to explore bias and learn more about diversity, equity and inclusion.

Do: Representation

- I participated in personal development activities including the *Racial Healing Allies: Embodied Allyship* course
- I attained a certificate/badge in Lifelong Learning in Inclusive and Equitable Teaching.
- I am working on a certificate/badge in the Implementation of Inclusive and Equitable Teaching Practices.

Do: Participation

- **Wait-time:** pause after asking a question to give students time to think (University of Tennessee Chattanooga, 2023b)
- **Prompting:** use hints and clues (Ouyang, R. n.d.)
- **Probing:** ask for more information (Ouyang, R. n.d.)
- **Polling:** allows students to anonymously answer a question
- **Think-pair-share:** gives students time to think independently, then share with a classmate as opposed to the whole class. Then ask for volunteers to share with class
- **Quadrants:** divide the room into 4 quadrants and ask for participation from specific quadrant when asking a question
- **Small groups:** deliberate design of small group activities (Eblen-Zayas et al., 2022)

Do: Flexible Deadlines

- Flexible deadline policy:
 - Assignments are generally due by the date posted in Canvas. I recommend that you use the due date as a guideline for time management.
 - I am willing to be more flexible with deadlines
 - Assignments submitted late will receive full credit if submitted by _____.
 - If your assignment is going to be more than 1 week late, please reach out so that we can talk about it.
 - If you are more than 3 weeks late submitting an assignment, you will receive an alert in Raptor Connect (the Early Response System).
 - Missing assignments will receive a grade of “0” until submitted
 - You have 2 “Free Passes” that you can use to replace any Learning Systems Assignment.

Do: UDL-Aligned Teaching Strategies

- Embedded a class activity that follows UDL principles (Tree of Inquiry)
- Used a voice amplifier
- Provided classroom recordings
- Included all learners in class activities
- Provided outlines for note-taking
- Reviewed accessibility features in the Learning Management System (LMS) and online learning platform including screen reader
- Provided American Sign Language (ASL) Interpreter
- Encouraged use of electronic devices such as laptops and tablets

Do: UDL-Aligned Teaching Strategies

- Lecturing
- Chunking
- Individual and group work
- Videos
- Images
- White board
- Drawings
- Story telling
- Case studies
- Concept maps
- Polling
- Peer review
- Reflection
- Think-Pair-Share
- Virtual activities
- Movement
- Annotation

Do: UDL-Aligned Teaching Strategy

- The *Tree of Inquiry* is a UDL-aligned teaching strategy based on the *Tree of Impact* decision tree tool.
- It was presented in 2001 as a nursing education strategy by Lowenstein et al. and subsequently modified by Assessment Technologies Institute (ATI) (2015).
- I was first introduced to the *Tree of Impact* at the 2022 *ATI National Nurse Educator Summit*.
- The *Tree of Inquiry* has a foundation in the Nursing Clinical Judgment Measurement Model (NCJMM).

Do: The Tree of Inquiry

- Supports Universal Design for Learning principles through:
 - *Multiple Means of Engagement*: it is an individual or collaborative activity that can be used in the classroom, laboratory, or clinical setting
 - *Multiple Means of Representation*: students use visual, textual, and auditory means to complete the activity
 - *Multiple Means of Action and Expression*: it can be typed, handwritten or drawn and supports strategy development and the use of executive functions (CAST, 2022).

Do: The Tree of Inquiry

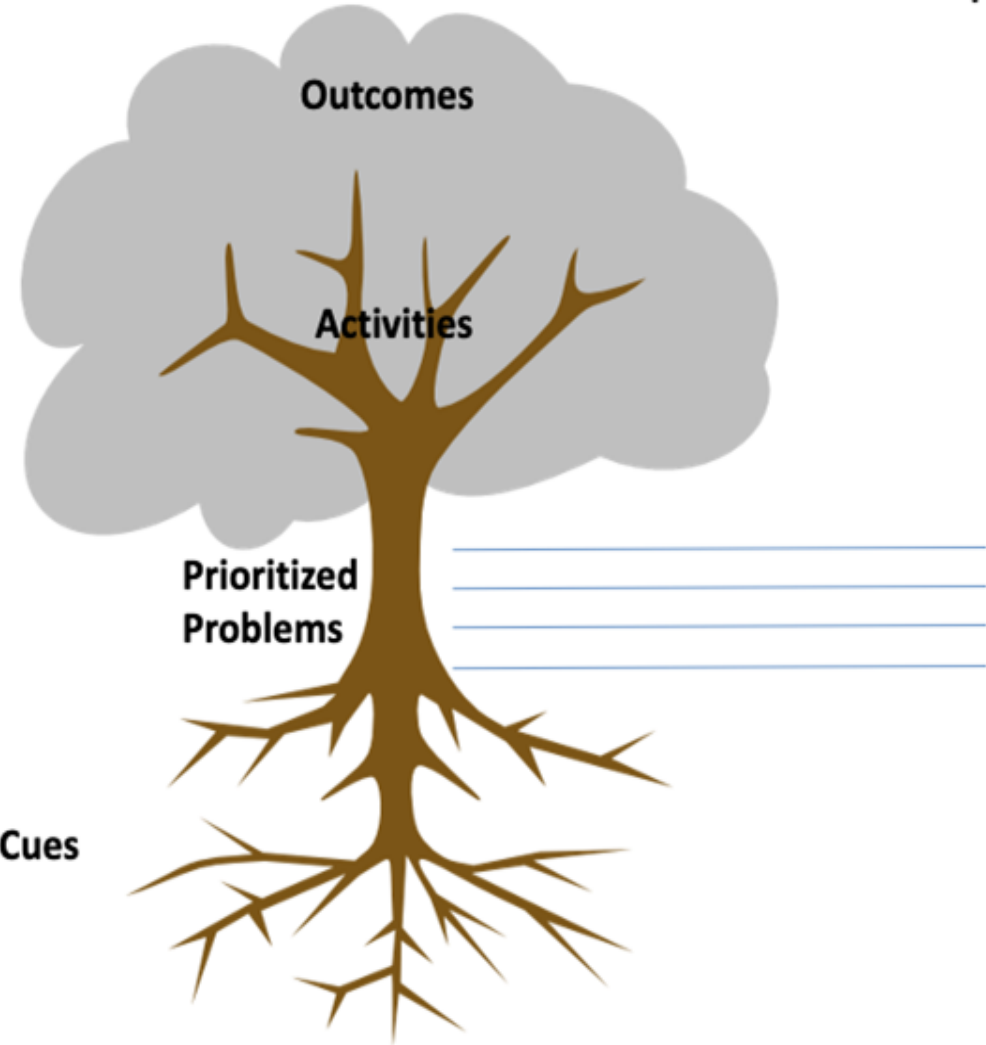


Better:

Worse:

Name:

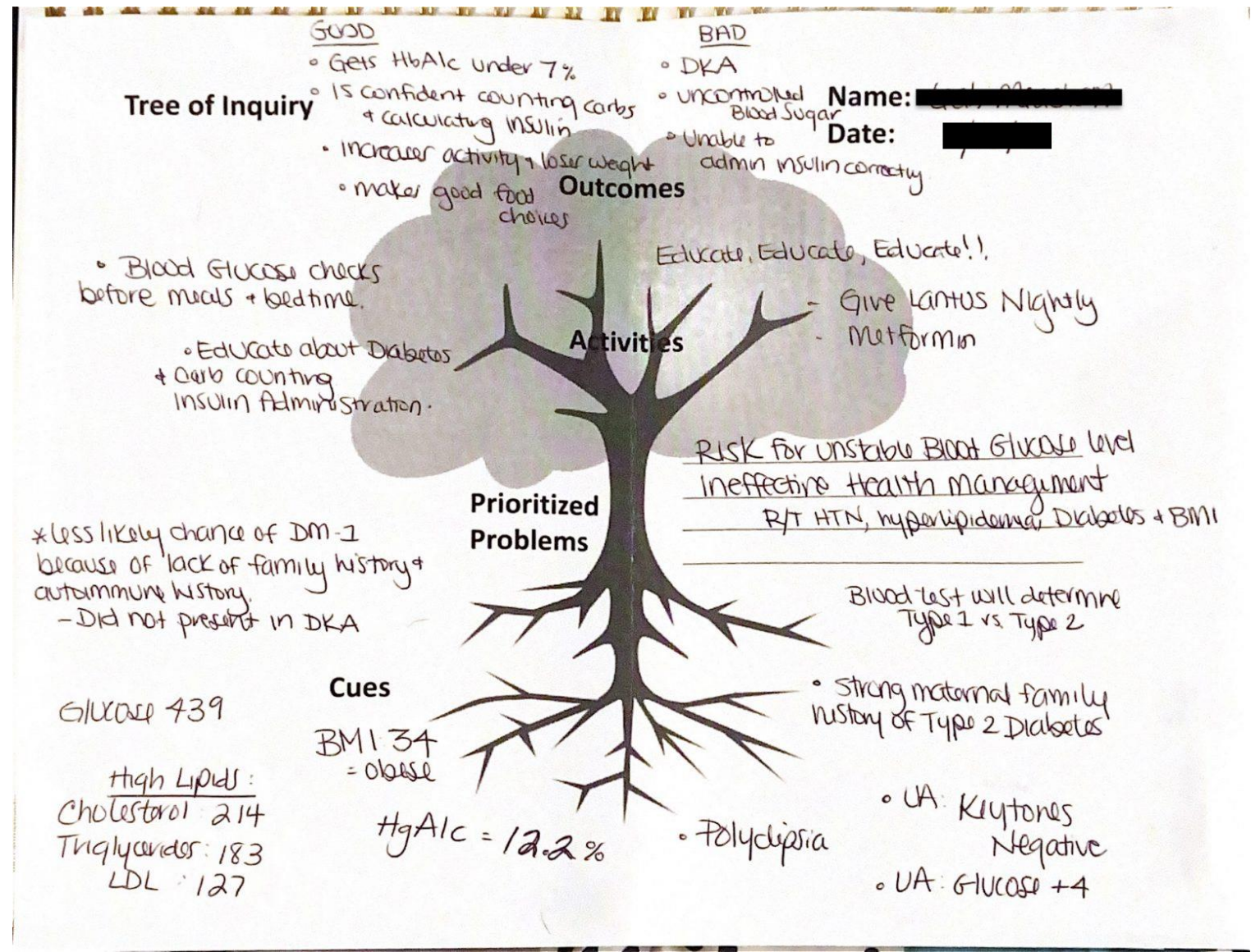
Tree of Inquiry



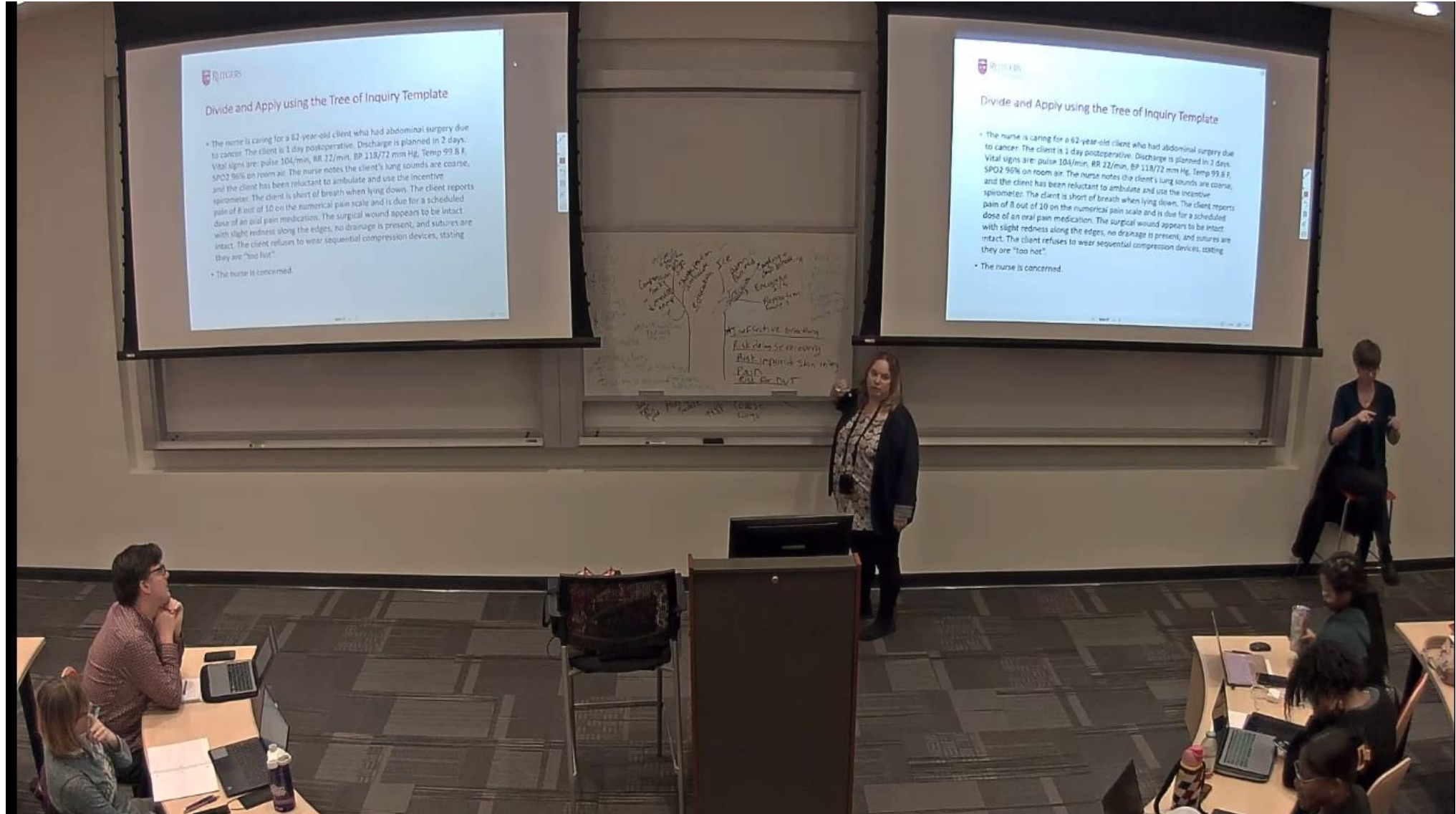
Place a star next to the most important cue and the most important problem.



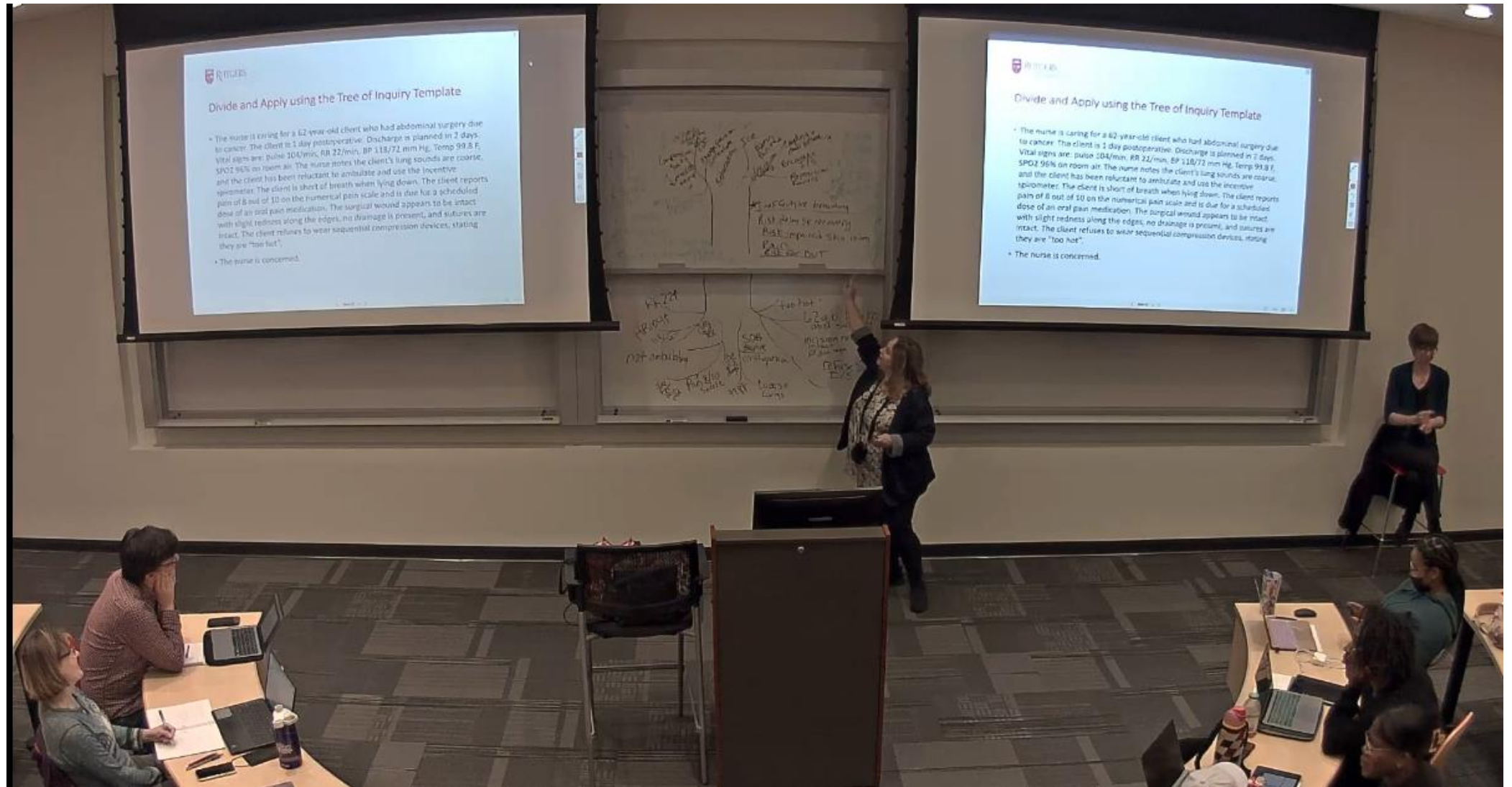
Do: Tree of Inquiry Student Sample



Do: Tree of Inquiry in the Classroom



Do: Tree of Inquiry in the Classroom



Reflect

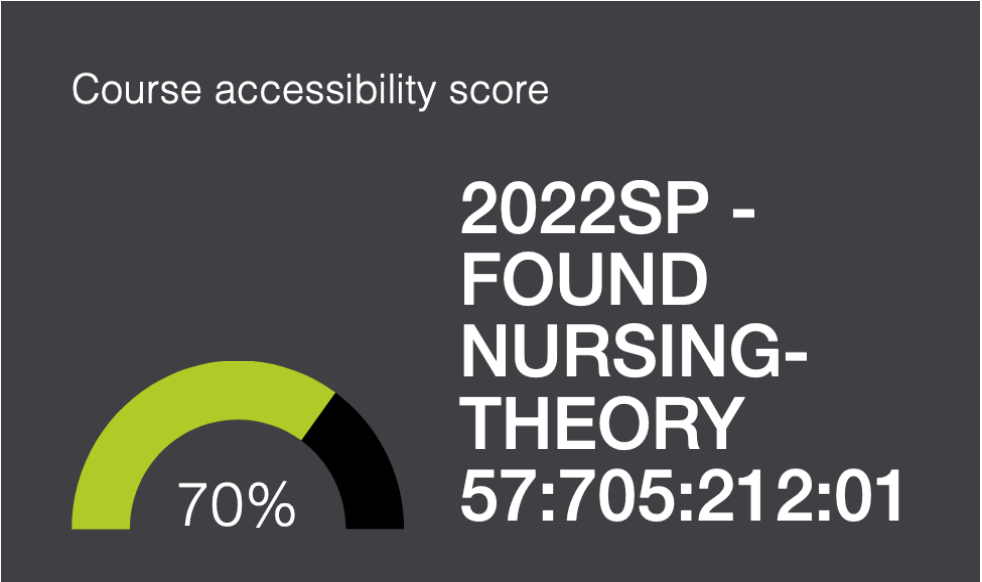
- How do you feel about equity-oriented design? (i.e. interested, enthusiastic, bored, indifferent)
- Why?

Check

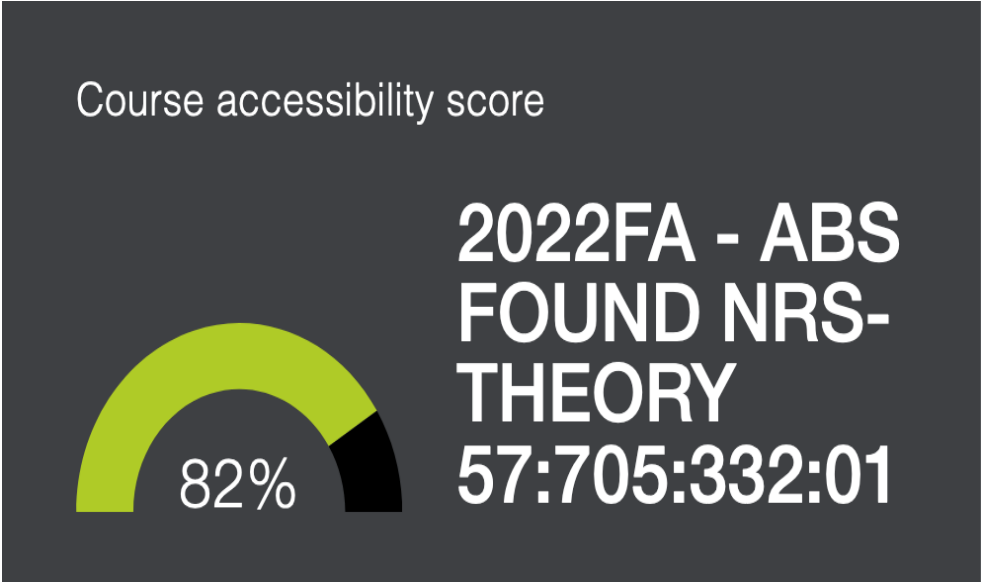
- Pre-Course Accessibility Report
- Post-Course Accessibility Report
- Qualtrics Survey at midterm: examine student satisfaction with EOD
- Qualtrics Survey at end of term: examine student satisfaction with EOD
- Student Instructional Rating Survey (SIRS): Questions added related to EOD

Check: Pre and Post Course Accessibility Report

PRE



POST



Check: Qualtrics Survey

	Midterm n = 46 (% Strongly Agree/Agree)	End of Term n = 25 (% Strongly Agree/Agree)
The instructor is generally respectful and inclusive of people of all abilities	97.83	96
The instructor provides alternatives to support learners with different aptitudes and prior experiences	93.48	88
The instructor provides flexible content that doesn't depend on a single sense like sight, hearing, movement, or touch	84.78	84
The instructor provides methods to interact with accessible materials and tools	91.30	92

Check: Qualtrics Survey

	Midterm n = 46 (% Excellent/Good)	End of Term n = 25 (% Excellent/Good)
Please rate the overall accessibility and inclusivity of the course Foundations of Nursing Theory	95.65	100
Please rate the degree to which human diversity with respect to race, ethnicity, gender, sexuality, age, social or economic classes and other forms of human difference are represented in the course Foundations of Nursing Theory	N/A	100



Check: Qualtrics Survey Comments

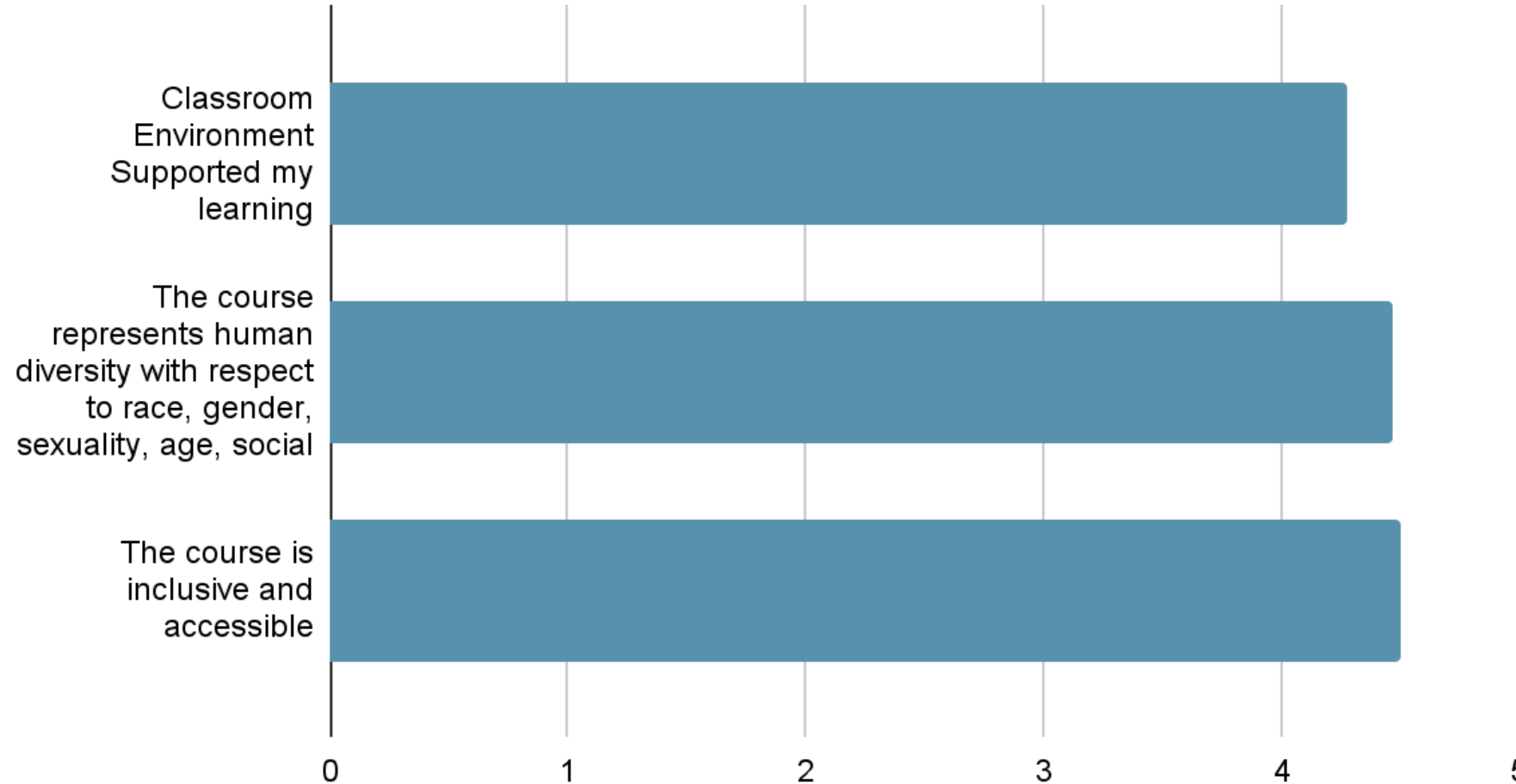
- What are the strengths of the Tree of Inquiry Model and why?
 - Engages learning and makes it so much easier to learn
 - Uses visual tools to encourage critical thinking about an issue and allows me to map out the information that needs to be considered in solving a problem.
 - It is a different way of viewing the information.
 - Visual representation of knowledge
- What could be improved about the Tree of Inquiry Model and why?
 - Takes too long
 - The tree is too big, maybe use a different layout
 - Using a list-based version so it can be adapted to use without the tree visual
 - I would like an alternate model
- Do you have any other comments about accessibility and inclusiveness in the course Foundations of Nursing Theory?
 - I think the power points need to be available to students before class so that way it is easier for students take notes
 - I find the course welcoming to all
 - There is a lot of information that is available if the one method of teaching is not beneficial

Qualtrics Survey Results



Check: SIRS

SIRS n = 34 (1=Poor, 2=Fair, 3=Average, 4=Good, 5=Excellent)



ACT

- Course Accessibility Report
- Qualtrics Survey
- Student Instructional Rating Survey (SIRS)

ACT: End of Semester Course Accessibility Report

- The Post Accessibility Report identified scanned PDFs as an issue.
- Future actions to take:
 - Locate the original text-based version if possible
 - Reference the document in the library
 - Generate an Optical Character Recognition (OCRd) version of the document

ACT: Qualtrics Survey

- **Midterm:** based on survey findings at midterm:
 - Provided a PowerPoint outline to guide note-taking during class
 - Provided an alternative to the Tree of Inquiry Model
- **End of term:** based on survey findings at end of term:
 - Offer more alternatives to the Tree of Inquiry Model

ACT: Student Instructional Rating Survey (SIRS)

- Based on SIRS report at end of term:
 - Smaller class size
 - Unable to reduce size
 - Future: plan activities that will make a large class feel small
 - small collaborative grouping
 - 1-minute papers
 - thumbs up/thumbs down for understanding checks

Activity: Think-Pair-Share

THINK

- Using the handout, independently
 1. Identify one equity-oriented design strategy that you plan to implement
 2. Identify how you plan to implement the strategy.
 3. Identify how you plan to evaluate the strategy

PAIR-SHARE

- Pair with your neighbor
 1. Share your strategy with your neighbor.
 2. Discuss your responses
 3. Share your thoughts with everyone

Recommendations

- Nurse educators should learn more about equity-oriented design.
- Nurse educators should reflect on the equity-oriented design features in the courses they teach.
- Nurse educators should take steps to incorporate equity-oriented design into courses.
- Nurse educators should perform research to measure the effectiveness of equity-oriented design.

Conclusion

- Equity-oriented design:
 - Supports all learners
 - Removes educational barriers
 - Shrinks the educational achievement gap
 - Contributes to student satisfaction
 - Maximizes learning opportunities and outcomes
- Nurse educators should implement equity-oriented design to maximize outcomes for all students, especially those with diverse life experiences, perspectives, and backgrounds.

Comments and Questions

- Comments or questions?
- Contact Information:
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 - rachel.derr@camden.rutgers.edu

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