Effective Peer Observation of Teaching in Health Profession Education: Going from Summative to Formative Evaluation

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NSF BETTER in STEM

Five-year, $3 million National Science Foundation Improving Undergraduate STEM Education (NSF: IUSE) collaborative research grant with Western Washington University, **University of Texas- Rio Grande Valley (UTRGV)**, and Whatcom Community College entitled Building educational theory through enacting reforms (BETTER) in STEM (BIS).

Collaborative research project to embed the use of equitable, inclusive, student-centered, and research-based instructional strategies within undergraduate STEM courses and departments.

Developed and tested an instructional framework that STEM faculty and departments can use to define and adopt equitable, student-centered STEM teaching and learning.

Instructional framework divided into Four Indicators:

- CULTURE & ENVIRONMENT
- CURRICULUM & CONTENT
- DISCOURSE & LANGUAGE
- ASSESSMENT FOR LEARNING

Objectives of Presentation

To share the instructional framework and peer observation of teaching (PoT) method that was developed.

Learning Objectives:

- Learn about the research-based instructional framework that was developed through the NSF BIS grant.
- Understand the difference between summative and formative PoT.
- Learn about the PoT guide and form that were developed through the NSF BIS grant.

Background Issue in STEM

Mainstream STEM instruction is:

- Teacher-centered and transmission-based
- Often focused on deficits among students for the purposes of "rigor", e.g., weeding out students (disproportionally affecting minoritized students)

Effective, equitable STEM instruction is:

- Student-centered and student supportive
- Asset-based
- Active



BETTER in STEM Equitable, Student-Centered Instructional Framework

How do we promote the potential of systemically non-dominant students in STEM?

Culture & Environment

Vision: The goal of Culture and Environment is to help students feel a sense of belonging in their classroom and STEM discipline, and ensure they know what they need to do to succeed. To feel a sense of belonging, students need to believe they bring valuable ideas and resources to their classroom that are meaningful and necessary for learning. Students should feel safe in the learning process and have agency in that process. Students should see and value varied positionality and backgrounds contributing to the discipline, learn about how the discipline is influenced by the dominant culture, and explore multi-cultural ways of understanding the discipline.

Transparency, Accessibility, and Engagement

1) Students engage with transparent, high, and achievable curricular and classroom expectations.
2) Students have time to think and reflect individually and discuss with peers to develop their ideas.
3) Students co-construct, discuss, adopt, and regularly revisit community norms for productive interactions, discussions, and classroom and lab routines.
4) Students work together to create a classroom environment that promotes belonging, well-being, and collaboration.
5) Students reflect on evidence of their current learning to identify next steps to support and/or adjust their learning strategies.

Power and Cultural Competence

6) Students develop a critical lens toward race, culture, and language to disrupt deficit narratives that center learning and belongingness within the classroom learning community.
7) Students identify and disrupt forms of bias and behaviors that negatively impact the learning community.
8) Students gain knowledgeable and skills to code/decode in a multicultural society.

Curriculum & Content

Vision: The goal of Curriculum and Content is to ensure students learn material that coherently builds important understanding and skills. To learn content deeply, students must connect prior knowledge with material they learn and understand how that knowledge builds to future concepts. Ideas and motivations students bring to the classroom should be valued and incorporated into learning activities. Students must see how their learning is connected to their career aspirations, work in their communities, and positions as citizens. Learning about the history and current work in the discipline from multiple cultural perspectives, and the contributions of scholars with various identities can help students make these connections.

Foundational Structure and Transparency

1) Students' prior academic knowledge, cultural knowledge, and experiences are leveraged to support learning activities.
2) Students anchor their learning to foundational STEM disciplinary ideas.
3) Students recognize how the purposes of assignments/activities align to the course's foundational STEM disciplinary ideas.
4) Students make connections between content in previous, current, and next lessons.

Equity Ethic: Community Responsibility

5) Students learn how STEM disciplinary knowledge, systems, and structures can be used to benefit or harm specific communities and ecosystems.
6) Students have opportunities to discuss and critique privileged knowledge systems and learn STEM disciplinary history from multiple cultural perspectives.
7) Students have opportunities to connect their STEM learning to their learning and societal issues that impact local and global communities and ecosystems.
8) Students learn about the contributions of scholars with a variety of identities.
9) Students engage in learning experiences that draw on and value diverse cultures, bases of knowledge, and/or frames of reference.

Discourse & Language

Vision: The goal of Discourse and Language is to empower diverse student voices in the classroom. To ensure all students' ideas and thinking contribute to the classroom's learning, students' native language and ways of communicating must be viewed as resources for making sense of disciplinary content and social issues in their local and global communities. Historically dominant discourse and academic language must be challenged, with attention to linguistic and nonlinguistic components of discourse and language. Students should have opportunities to engage in high sharing and critique so that the ideas are valued resources for building knowledge within the classroom community.

Structured Group Discussions

1) Students co-construct, discuss, adopt, and regularly revisit norms and roles for productive group discussions and activities.
2) Students and instructors engage as co-inquirers during class discussions and activities.
3) Students engage in dialogue that invites multiple forms of communication to elevate all voices.

Disciplinary Genres

4) Students learn and communicate disciplinary ideas through multiple styles, genres, mediums, and modalities, for a variety of purposes.

Linguistic Diversity

5) Students' languages and ways of communicating are drawn upon as resources to learn the content and prepare to communicate ideas within the discipline.
6) Students interact with and use diverse academic discourse, welcoming all forms of language and communication within the class discussions and materials.

Assessment for Learning

Vision: The goal of Assessment for Learning is to enact classroom instruction responsive to students' assets and needs. Inclusive instructors use evidence of students' ideas and progress to drive instructional decisions. Students know what success looks like, when they are in relation to the learning goals, and have support in developing strategies to improve their understanding and skills relative to those goals. Students engage with assessment criteria and actionable feedback from instructor and peers to improve the quality of their work and regulate their own learning. Students have a voice in the assessment process and are provided with authentic opportunities to make mistakes, and learn from them, while making sense of important learning goals.

Transparency and Alignment

1) Students explore how the learning objectives for course activities/assignments align to course/disciplinary ideas.
2) Students have opportunities to examine, challenge, and/or contribute to the assessment criteria.
3) Students have a variety of ways to show that they have developed the targeted knowledge, skills, dispositions, etc.

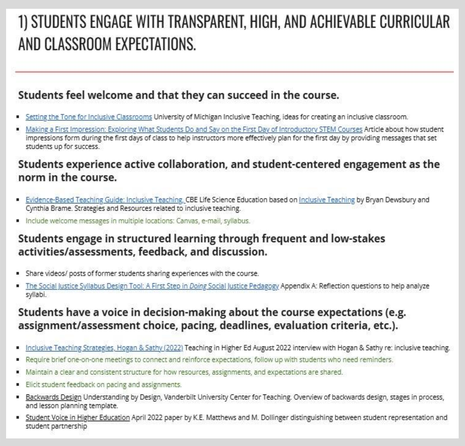
Feedback and Reflection

4) Students receive timely, descriptive, and actionable peer and instructor feedback aligned with the assessment criteria.
5) Students use assessment criteria and peer/instructor feedback to evaluate their own learning and determine how they will improve the quality of their work.
6) Student feedback is used by instructors and classmates to improve the course structure, content, pedagogies, pacing, etc.

Equitable Grading

7) Student assessment and grading practices reflect a culture of practice through iteration, feedback, and revision that allows students to learn without negative consequences.
8) Students' lives outside of the classroom are taken into consideration for assignments and assessments, and instructors' exhibit flexibility and empathy.

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1) STUDENTS ENGAGE WITH TRANSPARENT, HIGH, AND ACHIEVABLE CURRICULAR AND CLASSROOM EXPECTATIONS.

Students feel welcome and that they can succeed in the course.

- Setting the Tone for Inclusive Classrooms University of Michigan Inclusive Teaching, ideas for creating an inclusive classroom.
- Making a First Impression: Exploring What Students Do and Say on the First Day of Introductory STEM Courses Article about how student impressions form during the first days of class to help instructors more effectively plan for the first day by providing messages that set students up for success.

Students experience active collaboration, and student-centered engagement as the norm in the course.

- Evidence-Based Teaching Guide: Inclusive Teaching. CBE Life Science Education based on Inclusive Teaching by Bryan Dewsbury and Cynthia Brame. Strategies and Resources related to inclusive teaching
- Include welcome messages in multiple locations: Canvas, e-mail, syllabus.

Students engage in structured learning through frequent and low-stakes activities/assessments, feedback, and discussion.

- Share videos/ posts of former students sharing experiences with the course.
- The Social Justice Syllabus Design Tool: A First Step in *Doing* Social Justice Pedagogy Appendix A: Reflection questions to help analyze syllabi.

Students have a voice in decision-making about the course expectations (e.g. assignment/assessment choice, pacing, deadlines, evaluation criteria, etc.).

- Inclusive Teaching Strategies, Hogan & Sathy (2022) Teaching in Higher Ed August 2022 interview with Hogan & Sathy re: inclusive teaching.
- Require brief one-on-one meetings to connect and reinforce expectations, follow up with students who need reminders.
- Maintain a clear and consistent structure for how resources, assignments, and expectations are shared.
- Elicit student feedback on pacing and assignments.
- Backwards Design Understanding by Design, Vanderbilt University Center for Teaching. Overview of backwards design, stages in process, and lesson planning template.
- Student Voice in Higher Education April 2022 paper by K.E. Matthews and M. Dollinger distinguishing between student representation and student partnership

NSF BIS Collaborative Peer Observation

- Student centered/engagement collaborative peer observations
- **Collaborative Peer Observation of Teaching** (PoT) - reciprocal process of peer feedback.
- When used with the **Better in STEM instructional framework**, the observation protocol guides faculty in collaborative discussion of student engagement and instructional intent.
- Observer and Instructor observe each other teaching and debrief their observations.

PURPOSE:	
Summative	**Formative**
Evaluates teaching performance	Supports teaching development
Often linked to formal review	Focused on reflection and growth
Judgement-oriented	Improvement-oriented
Typically one-directional	Collaborative and reciprocal

NSF BIS Peer Observation Guide

Prior to observation → During observation → After observation

New: The observer and instructor **meets prior** to the observation so the **instructor can share** the lesson goals and which indicators they are focusing on during instruction.

New: Following the observation, the observer and instructor **meets again to talk** about the lesson observed.

Prior to Observation – Pre-meeting between instructor and observer

Instructor provides information of their course

- Observer takes notes and ask clarification questions if needed
- Learning targets for the observed lesson (content knowledge, skills, ways of thinking or collaborating, etc.):
- Lesson context and description (What came before and after this lesson? What will students be doing?):
  - Before class:
  - During class:
  - After class:



- What one (or two) indicators would you like observers to focus on? What evidence should observers look for, related to that indicator? **Instead of indicators, you can think of elements of teaching you want your peer to observe and evaluate.**
- Logistics (Where in the classroom should I sit? Is there a particular group of students I should observe?):

During the Observation –Observer use the table below to record observation notes and questions/comments

Student Moves (Student actions, comments, questions, behaviors, etc.)	Instructional Moves (Facilitation initiated by the instructor, activities/materials, or peers)	Questions/Comments
•	•	•



After the Meeting – Post Meeting with Instructor and Observer

Evidence of Student Learning

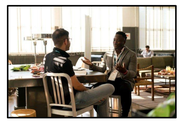
- To what extent did students develop the targeted knowledge/skills for the lesson?
- How do you know?
- What were the strengths and/or problematic aspects of students' thinking/skills?

Interpreting Observations

- What helped/hindered students' development of the targeted knowledge/skills?
- Of the strategies/practices you identified, which were most impactful on students' development of the targeted knowledge/skills?

Next Steps

- What are the next steps to support students' learning?



How Should the Discussion Take Place

- **Post-observation meeting:** Face-to face or Zoom/Teams for cross-campus meetings
- **Peer learning benefit:** Observers gain teaching strategies they can apply to their own courses

Importance of the Instrument

- Ensure that the instrument places the act of reflection and meaning-making, thereby resulting in meaningful and authentic conversations about teaching.
- Has space where both the faculty member and observer reflect on teaching and learning, which in turn can shape teaching narratives for annual review.
- **Instructor** can guide the observation by noting their values/beliefs on teaching and their pedagogical questions - areas in their teaching and student learning they'd like to engage others (the peer observer) in conversation about.
- **Observer** can provide feedback informed by the faculty member's inquiries as well as the observer's insights as a fellow colleague and teacher who is also continuously developing and improving their own teaching.
- Subsequently, the **instructor and observer** both reflect on what they learned from the peer observation and what future action they will take and why.

The NSF BIS Peer Observation Guide can be obtained here:

Conclusion: Collaborative vs. Evaluative

- **Evaluative Peer Observation of Teaching - one way, assessing instructor performance**
- **Collaborative Peer Observation of Teaching**
  - Reciprocal, dynamic, reflective process of peer feedback.
  - A ***continuous improvement*** of teaching innovations.
  - Prompts ***reflective teaching and learning practices***
  - Builds reciprocal and collaborative partnerships
  - Promotes ***mutual respect*** through positive, constructive feedback for improvement
  - Observes student experiences and engagement to ***potentially enhance student learning and success***

References

- Phuong Vu Nguyen Collaborative peer observation of teaching: enhancing academics' collegiality and collaboration REFLECTIVE PRACTICE2023, VOL. 24, NO. 4, 524–542https://doi.org/10.1080/14623943.2023.2210076
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