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Creating an Inclusive Climate in the Chemistry Classroom



This reflection was inspired by a Faculty Learning Community on Inclusive Teaching sponsored by the Center for Faculty Excellence at Cleveland State University

How are you
feeling today?



A typical "Check In" slide at the start of class

03. Climate Survey

"What Is Happening in This Class" Survey (WIHIC) was administered in Week 12 of the Spring 2023 semester in CHM 301, CHM 342, and CHM 352.

- 38/55 students responded (70%)
- CHM 301 Research Methods in Chemistry
- CHM 342/542 Pharmacology II
- CHM 352/552 Medicinal Chemistry II

Survey consisted of 48 questions, 8 questions for each of 6 categories (see below). Response options: almost never, seldom, sometimes, often, and almost always.

- Student cohesiveness
- Teacher Support
- Involvement
- Task Orientation
- Cooperation
- Equity

04. Approach

Creating a Welcoming Environment

Before the semester begins

- Send an email welcoming students to the course and sharing information about resources and 1st day
- Setup Blackboard course with a brief bio and course description

Week 1

- Welcome students at the door
- Invite students to introduce themselves with their chosen name (write notes for yourself about phonetics and create seating chart)
- Use students' names often
- [Syllabus scavenger hunt](#)
- Introduce key routines and technologies
- [Welcome Survey](#)
- Send a personalized email to each student using Welcome Survey responses. Be sure to address any insecurities and share resources

Building Rapport

- [Daily Check In Survey](#)
 - Reflect on how they are feeling
 - Review questions from previous class
 - Preview questions for the day
 - Opportunity to share openly what is on their mind
- Check in emails
 - Congratulations for assignment/quiz/exam performance or recognize an impressive improvement
 - Check in with students who missed an assignment or class
- Talk with every student every day
 - Students are much more likely to ask a question when I'm walking around the room than in front of the whole class

Explicit Learning Objectives

- Display specific learning goals every day
- Create student-centered activities with real-life applications
 - How will the students engage with the new information
 - How will the students formatively explore their level of mastery

01. Introduction

Students generally come to our classroom with a desire to learn. It is up to us, as educators, to not crush that desire, but instead cultivate and nourish it. I believe that even in required, gateway courses, we can still inspire students to be curious and vested in their learning. To best foster student learning, it is important to create relevant learning opportunities in a supportive, friendly environment for every student in the class. The last three years I have focused on incorporating inclusive teaching practices in each of my classes with the goal of increasing student learning outcomes and student perceptions of instruction. Details of my approach to creating an effective learning environment, the impact on student DFW rates in a high-enrollment gateway course, and the results of a classroom climate survey will be discussed.

02. Objective

To assess efficacy of the incorporation of inclusive teaching practices on student learning outcomes and student perceptions of instruction

Related literature

Hogan, Kelly A., and Viji Sathy. Inclusive Teaching : Strategies for Promoting Equity in the College Classroom. WEST VIRGINIA UNIV PRESS, 2022.

Skordi, P. and Fraser, B. 2018. Validity and use of the What Is Happening In this Class? (WIHIC) questionnaire in university business statistics classrooms. Learning Environments Research. 22 (2): pp. 275–295.

Moos, Rudolf H. "Evaluating Classroom Learning Environments." Studies in Educational Evaluation, vol. 6, no. 3, 1980, pp. 239-52, doi:https://doi.org/10.1016/0191-491X(80)90027-9.

05. Results

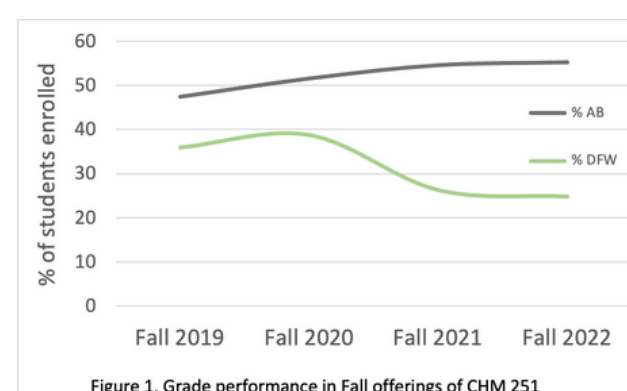


Figure 1. Grade performance in Fall offerings of CHM 251

Student Comments About CHM 352/552 and 342/542

Pertaining to classroom climate:

- Relaxed, yet educational
- Friendly and enjoyable
- It's always very fun and kind. I love this class!
- The classroom is very open. It is easy to speak up without fear of getting something wrong
- It's relaxed and class work oriented
- It's way more interactive and fun than other courses

How students feel in class:

- I feel happy and excited
- I feel safe and included
- I feel excited to learn
- I feel safe and appreciated
- I feel like I belong
- I feel able to contribute if I want

Table 1. WIHIC Survey Results

	Number of Items	Mean	SD	Alpha reliability	Description	Example
Student Cohesiveness	8	3.86	0.35	0.91	Extent to which students know and are supportive of one another	I am friendly to members of this class
Teacher Support	8	4.62	0.12	0.96	Extent to which the teacher helps and shows interest in students	The teacher moves about the class to talk with me
Involvement	8	3.74	0.16	0.94	Extent to which students share their ideas during class	I explain my ideas to other students
Task Orientation	8	4.59	0.14	0.88	Extent to which it is important to complete the planned activities	I know the goals for this class
Cooperation	8	4.24	0.20	0.93	Extent to which students work cooperatively on learning activities	I cooperate with other students on class activities
Equity	8	4.72	0.07	0.96	Extent to which the teacher treats students equitably	I am treated the same as other students in this class

06. Future Directions

- Reformat my syllabus to be more visually appealing
- Share information about Lift-Up Vikes and the CARE team in class
- Incorporate more diverse names and relationships in my examples
 - [random name generator](#)
- Fix the closed captioning in all of my pre-recorded videos
 - Clock Partners
 - Encourage discussions between groups
- Administering WIHIC in other STEM courses and investigate correlations with gender, race, and DFW rates

