



Strategies to Engage ALL Students in Your Classroom

Wednesday, March 20, 2024

Westchester Community College

Florence Darlington Technical College

The Center for Broadening Participation in STEM at Arizona State University

ASU Arizona State
University

Center for Broadening
Participation in STEM

SUNY
WESTCHESTER
COMMUNITY
COLLEGE



FLORENCE-DARLINGTON
TECHNICAL COLLEGE



Getting Started

- Using the chat box, please provide
 - Name
 - Others In the room with you
 - Institution
 - Role at Institution
 - Favorite food
- Ask questions in the chat
- Questions will be answered during the webinar
- Change the view in the upper right-hand corner





Poll Question

What is your primary role at your college?

1. Faculty
2. Grant Professional
3. Administrator
4. Other



Poll





Welcome and Introductions



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- ❑ Ideas you can use in your classroom
- ❑ How they relate to inclusive instruction
- ❑ Impact they have had on classes and students

Sharing Strategies



- ❑ Introductions
- ❑ Self-Assessment
- ❑ Quiz Show
- ❑ Benefits of incorrect solutions
- ❑ Collage
- ❑ Multi-lingual classroom





Introductions



- ❑ Take roll call
- ❑ Ask students how they are feeling in one word
- ❑ Follow up at times
 - ❑ For example, someone said “hungry” and another student shared crackers





Introductions

- ❑ Pass around attendance sheet
- ❑ Students add name
- ❑ Rank how they feel on a scale of 1-10
- ❑ After break ask “commonality questions”
 - ❑ Do you drink coffee?
 - ❑ What's your favorite show to binge-watch?
 - ❑ What's your favorite snack?
 - ❑ Hardest class this semester?





Introductions



- ❑ Learn names
- ❑ Acknowledge differences
- ❑ Safe place to share feelings
- ❑ Help find similarities



feedback

From Students

- ❑ Someone cares
- ❑ Don't have to be “up” all the time
- ❑ Learn about their classmates
- ❑ Build community - make friends





Self-Assessment



- ❑ Developed during pandemic
- ❑ Determines participation grade
- ❑ Complete after each test and end of semester
- ❑ Provide details of their participation and give themselves numeric grade
- ❑ Can be overruled by instructor



PARTICIPATION ASSIGNMENT 1: MATH AUTOBIOGRAPHY AND COMMUNITY SUPPORT

Name:

Class:

Date:

Directions:

- 1) Complete the attached questionnaire by hand
- 2) Respond to the essay prompt in 3-5 paragraphs of professional academic writing. You may turn in a handwritten or typed essay.
- 3) Staple this page to your essay. Turn it in at the beginning of class on Wednesday, January 31, 2024.

ESSAY PROMPT:

On our first day, I shared with you my mathematical autobiography - my history with learning mathematics. I want to get to know you a little bit better and learn your math story. Write 3-5 paragraphs answering the following questions:

- 1) What are your educational goals? I.E. Why are you in school?
- 2) Briefly describe your history with mathematics. List at least one positive learning experience and one negative learning experience. Please include your most recent math learning experience.
- 3) Is there anything you want me to know about you?
- 4) Choose one of the class participation goals and tell me how you applied it in class and what you learned from the experience.
- 5) How do you plan to study for Exam 1?
- 6) Give yourself a grade for your participation during the and explain why you believe you earned that grade.

Circle one:

I am on time to class	always	sometimes	never
I stay for the entire class	always	sometimes	never
I stay off of social media and the internet during class	always	sometimes	never
I communicate respectfully with Sarah and my classmates	always	sometimes	never
I am caught up on my homework	always	sometimes	never
I make mistakes and share them when asked	always	sometimes	never
I ask questions when I have them (asking classmates counts)	always	sometimes	never

Check all of the following goals that you completed in the first 6 weeks of class:

Mathematical Reflection:

- Take detailed notes in class including questions that I have
- Rewrite my notes and add examples from the homework and textbook
- Asked myself "How does this make sense, how does this fit with what I already know?" when presented with examples, definitions, and theorems
- Took note of when you didn't understand a symbol or vocabulary word
- Included a mistake I made in my notes with an explanation of how to avoid it in the future
- Tried to work along with examples and problems demonstrated in class
- Tried to guess what step might come next
- Tried to guess how the facts fit together
- Wondered if the math we are doing relates to something outside the classroom
- Wondered if I would ever use this in real life
- Made a conclusion about how something must work (right or wrong)
- Did extra problems or examples to help my understanding
- Thought about Pre-Calculus outside of class and homework

Community Support:

- I broke the ice in class discussion or in small group work
- I shared a mistake I made in class and what it taught me
- I asked a question
- I rephrased something Sarah was saying to help a classmate understand
- I rephrased something a classmate said to help Sarah understand
- I caught someone's mistake and explained to them what I noticed
- I caught Sarah's mistake and spoke up
- Someone caught my mistake and I learned from their explanation
- I reached out to include someone in a class or group discussion
- I spoke up in a class or group discussion
- I thanked someone for their help
- I thanked someone for asking a question that helped me
- I shared my notes with someone
- I asked Sarah a question my classmate was too shy to ask
- I participated by raising my hand, rating my understanding 1-10, or otherwise when Sarah asked.





Self-Assessment



- ❑ Participation is more than talking
- ❑ Acknowledge contributions
 - ❑ Helping someone else
 - ❑ Accepting help from others
 - ❑ Being part of team (sharing notes)
- ❑ Allows students to share what is of value to them
- ❑ Safe space - One-on-one interaction





feedback From Students

- ❑ Accounts for differences
- ❑ Feel in control of own participation
- ❑ Allows students to speak in their own voice about what is important to them
- ❑ Makes them work harder because they must justify it



Classroom Quiz Show

- ❑ Divide into groups
- ❑ Ask questions based on previous class PowerPoint
- ❑ Each group answers two questions
- ❑ Final question has multiple answers, and each group writes down answers
- ❑ Group with most correct answers over 4-week period does not have to take quiz the following week (automatic 100%)





Game Time



- ❑ Includes both cooperation (group work) and competitiveness
- ❑ Students get to know each other
- ❑ Helps reinforce concepts - not covered only one time
- ❑ Promotes active learning



feedback From Students

- ❑ Great way to review materials
- ❑ Get to know fellow students
- ❑ Fun break in a 4-hour class





Getting it Wrong



- ❑ Learn more from a wrong answer
- ❑ Emphasize learning vs. performance
- ❑ Variations
 - ❑ Ask class for at least 3 different answers to write down answer
 - ❑ Students writes down anonymous answers, mix up written answers; other students give answer
 - ❑ Price is Right
- ❑ Group work - find what is wrong with instructor's work





Getting it Wrong

- ❑ You don't have to be right
- ❑ Students get to know each other
- ❑ Math anxiety is reduced



feedback From Students



- ❑ You are in class to learn, not be perfect
- ❑ Feel comfortable asking when they are having problems
- ❑ “I realize everyone is in the same boat”





Cultural Collage Activity



- ❑ Sharing *Cultural Stories* to engage students and release their *Cultural Strengths*



My Personal Collage / Storyboard

<name(optional)>



Insert and arrange numerous photos, graphics, diagrams, quotes, etc. to illustrate your:

- cultural heritage
- educational journey
- personal growth stories from challenges you faced
- people that inspired you
- other...

quote

photo

photo

graphic

photo

photo



Collage

- ❑ More cohesive class environment
- ❑ More discussion of long-term academic goals
- ❑ Persistence
- ❑ Linguistic Diversity





feedback From Students

- ❑ Enjoy sharing their information
- ❑ They are not put on the spot in class but can think about it
- ❑ They find out about classmates



Multi-Lingual Classroom

- ❑ Ask students about languages
- ❑ Encourage students to complete small group work in multiple languages
 - ❑ Have been Spanish, Arabic and Albanian speaking
- ❑ Students report out in English

NOTE: Learning Spanish so students like to help





Multi-Lingual



- ❑ Shows that multilingualism is a valued skill
- ❑ Increases respect for strengths of multi-cultural and immigrant experiences
- ❑ Allows students to feel more at home





feedback From Students

- ❑ Feel welcome
- ❑ More relaxed - don't have to be “on” for English
- ❑ Feel respected
- ❑ Feel seen





Poll Question

Which of the ideas shared today are you likely to try in your classes (check all that apply)?

1. Introductions
2. Self-Assessment
3. Quiz Show
4. Benefits of Incorrect Solutions
5. Collage
6. Multi-lingual Classroom



Poll

Q & A





Center for Broadening
Participation in STEM



HSI ATE Hub 2: Professional Development for Culturally Responsive Technician Education

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