

Title: Developmental Dilemmas: How to inspire students to properly prepare and feel good about it.

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Describe the problem, issue, or area of interest and the context. In order to encourage students toward class preparation and improved confidence, we will require written assignments. These assignments may take the forms of journaling, math stories, student reflections on lectures.

Define your desired goals, or "outcomes."

1. Improve attendance.
2. Improve the degree to which students are prepared for each class.
3. Improve student confidence in their abilities.

Describe your "indicators" of success.

1. Attendance is tracked daily and compared with previous semesters. Students were given the opportunity to drop their lowest test score if they miss no more than 2 days. All but four students out of 32 were able to drop their low test score.
2. A survey was given to judge the students' perception of how well the daily writing assignments and homework groups prepared them for the classes.

Describe your project.

- 1) **Math Story:** The students were asked to write their "math story". This is a way for the students to introduce themselves to the instructor. They were to include their past experiences with math at work and/or school (bad or good), their goals in taking this class, i.e. what they hope to get out of the class and why they are taking it (refresher, major requirement etc). Also they could include anything else they want me to know about them. The idea is to let the students introduce themselves to the instructor. The hope is that it will make the students more comfortable in class.

Daily Writing Assignments: Team members used this assignment as a way to encourage students to read ahead in their text book. I used this as a way to encourage students to be prepared for class and as a way to structure my lecture if I noticed that a particular topic might be more confusing to students. The daily writing assignment was as follows:

- Read section(s) to be covered the next class period.
- Write 1 – 3 sentences describing the BIG ideas from the section(s).
- Describe a type of problem that seems "easy" to you.
- Describe a type of problem that seems "difficult" or confusing to you.

Daily Homework Groups: The students got into their homework groups for the first 10 minutes of class to discuss the homework assignment and obtain help from their peers on any problems they couldn't do on their own.

Describe your results.

Reading the math stories helped me get to know the students on a more personal level. I felt like I had the inside track on some of their fears and concerns which helped me be more sympathetic to what they were dealing with. The students shared both "horror stories" and inspirational stories. One student even said that her favorite teacher was a math teacher she had as a sophomore in high school. The item on the survey that addressed this part of the project was "Writing my math story at the beginning of this course helped me feel more comfortable with the instructor". The results are as follows:

- Strongly agree 16
- Somewhat agree 10
- Neutral 6

A second item on the survey was "Writing my math story was a beneficial exercise that helped me reflect on my experience in mathematics". The results are as follows:

- Strongly agree 5
- Somewhat agree 10
- Neutral 13
- Somewhat disagree 3
- Strongly disagree 1

I was pleased with the student responses and have used this assignment in subsequent semesters.

The Daily Writing Assignment was a big surprise for me. I thought the students would resent having to do this, but according to the survey, they mostly appreciated it, got a lot out of it, and said they would probably continue to do it in subsequent math courses. The students liked knowing what was going to be discussed the next class period. The items on the survey as well as the results are as follows:

1) I completed: **All - At least half - Less than half - None** of the Daily Writing Assignments

- All 20
- At Least Half 10
- Less than Half 1
- None 1

2) Completing the journal/prep writing assignment helped me understand the in class lecture better.

- Strongly agree 14
- Somewhat agree 12
- Neutral 3
- Somewhat disagree 1
- Strongly disagree 2

3) These assignments were worth my time.

- Strongly agree 11
- Somewhat agree 15
- Neutral 3
- Somewhat disagree 1
- Strongly disagree 2

4) The instructor should continue journal/prep assignments in future courses.

- Strongly agree 11
- Somewhat agree 13
- Neutral 5
- Somewhat disagree 0
- Strongly disagree 3

5) I would have read the section before class even without an assignment being made

- Strongly agree 3
- Somewhat agree 8
- Neutral 2
- Somewhat disagree 13
- Strongly disagree 6

6) I will continue to read the section before class in the future.

- Strongly agree 12
- Somewhat agree 7
- Neutral 5
- Somewhat disagree 6
- Strongly disagree 2

I also incorporated daily homework groups during the first 10 minutes of class. This worked very well for most of the groups. There were two groups that barely talked to each other. Even though I tried to encourage them, they rejected the idea of needing to discuss math with others. For the most part, however, the students in this class responded well to working in groups. There were two items on the survey that addressed this method.

1) Working in groups for the first 10 – 15 minutes each class period was beneficial to my learning.

- Strongly agree 15
- Somewhat agree 8
- Neutral 5
- Somewhat disagree 3
- Strongly disagree 1

2) The instructor should continue with the group work activity in future courses

- Strongly agree 15
- Somewhat agree 6
- Neutral 5
- Somewhat disagree 4
- Strongly disagree 2

Describe your evaluation methods. (*How* did you determine whether your project was successful or not? Did you revise your project as you went along? If you plan to implement your project again, what, if any, changes will you make?)

The evaluation method involved both using the survey and doing “informal assessments”. Because I had the students write their Math Story, I knew the individual students’ attitude toward math and what level of confidence they had. I was able to address these issues on an individual level and ask them throughout the semester how things were going and how they were feeling. Adding this personal touch as a result of reading their Math Story helped to create a very positive classroom environment.

The results from the survey convinced me to use these methods again. I did change the Math Story for future classes in order to encourage students to choose a theme for their paper. The next time I used this assignment I spent more time in class going over what was expected and I made the assignment much more specific.

I’ve used the Daily Writing Assignments since this project and did not change anything from the first time used. I have not had a negative experience with it and even used it in my trigonometry class.

I have not been diligent in the use of the homework groups, but hope to get them back on track for the Fall semester. I found that when students are able to talk over homework problems with each other, they tend to ask fewer homework questions in class. So, overall, the homework groups take up less class time.