Discussion Board Posts in an eLearning Mathematics Class: Examples and Tips for Success

Discussions in an elearning mathematics class take place in an asynchronous discussion board in your online classroom. These discussions are an important part of your collaborative learning experience and a significant part of your grade. This document provides tips to help you make successful contributions to the discussions in your elearning class.

What might the discussions involve? You may be required to answer specific discussion questions posed by your instructor or the discussions may be more free-flowing. Either way your instructor is likely to grade your posts for quality. This is often referred to as the post being "substantive" or not.

What makes a post substantive? Your instructor will likely define "substantive" in their own terms in the class syllabus so be sure to read that vital document carefully early in the term. Generally your instructor is looking for a relevant message that adds to the discussion thread in the same way that a useful comment you make while working in a small group in an on-campus mathematics class might benefit the conversation.

EXAMPLES OF DISCUSSIONS & TIPS FOR MAKING SUBSTANTIVE POSTS

The specific examples below are excerpts from actual online mathematics classes at Clark College presented here with permission of the student and instructor. Note the tips in red.

EXAMPLE 1: Below is a common "required" type discussion question in an elementary algebra course.

> Who contributed to the development of algebra and in what capacity? Find an interesting historical tidbit to share with the class. Cite your source(s). Your response is expected to be in your own words, at least 100 words long, and be written using correct spelling and grammar.

Possible student response: Much of our modern algebra is based on the ancient Egyptian Rhind Papyrus, circa 1650 B.C. It shows that they could solve problems equivalent to a linear equation in one variable. They used a method that we now call the 'method of false position.' Egyptian algebra used no symbols. They stated their problems and solutions verbally. ucs.louisiana.edu/~sxw8045/history.htm

Comments about this response:

- Read the entire thread before posting your response. Don't duplicate info that is already posted.
- The wording is satisfactory. Wise to write in Word and copy and paste into the discussion board message to assure correct spelling and grammar.
- Far short of the 100 word minimum! This will cost the student points.
- Citation included. Smart to use a legitimate source not a wiki or similarly unreliable site.

Suggestion for improvement: Elaborate on the 'method of false position'. Provide an example problem from the Rhind Papyrus and explain how it differs from how we might write a similar problem today.

EXAMPLE 2: Below is a posting from an instructor in a college algebra course followed by responses from students and the instructor. Note the ways students built a substantive collaborative interactive discussion. Pay attention to the tips in red for making a post substantive.

> One answer to the logarithmic equation **$LOG_5(x) = LOG_x(5)$** is clearly x=5, but there is a second solution. How can we find the second solution? Ideas?

Student #1 response: *Neither logarithm is a common log (base 10) or a natural log so I think we need to use the change of base theorem to rewrite these logs but I can't figure out how when there are different based logs on the two sides of the equation.*

> Determination: Substantive! This student suggested a start to the problem and includes specific mathematical terminology.

Student #2 response: *I agree with student #1. I think the answer is 5.*

> Determination: Not substantive. It seems that the student did not carefully read the original post nor is he advancing the conversation significantly.
>
> Suggestion: Perhaps student #2 could have at least proved the answer is 5 by showing the steps to "check" it.

Student #3 response: *I came across a similar problem but the right side was simpler: Solve $LOG_5(x) = 3$ for x. I solved this by converting from logarithmic to exponential form, $5^3 = x$. Then simplified, x = 125. But I'm confused about there being another log on the right side. Would $LOG_5(x) = LOG_x(5)$ convert to 5 $5^{LOG_x(5)} = x$? I have no clue how to go from here.*

> Determination: Substantive! Student suggested an alternate solution method. Student also compared the equation to a similar (easier) problem.

Student #4 response: *I think $5^{LOG_x(5)} = x$ is solved since x is isolated. When we are solving an equation all we have to do is get x isolated on one side of the equation. I don't know if the left side can be simplified though.*

> Determination: Substantive! Even though this student is incorrect in his conclusion, he has made a legitimate point and backed it up in his own words.

Student #5 response: *That's a really good idea, but I don't think that is solved for x yet because we still have an x on the left side too (in the base of the log). Does anyone know if there is a property of logarithms that can simplify the left side?*

Determination: Substantive! The student provided constructive criticism in a supportive manner. The student also posed a follow-up question to keep the thread moving.

Instructor response: *Great collaboration so far everyone! To confirm, it is true that* $5^{LOG_x(5)} = x$ *is not solved for x because we have x's on both sides of the equation still. And unfortunately there is not a property of logs that could simplify the left side because we would need the base of the exponential and the base of the logarithmic function to MATCH in order for them to "undo" one another (e.g.,* $3^{LOG_3(10)}$ *simplifies to 10 only because the base 3 of the exponential function "undoes" the base 3 of the logarithmic function.)*

Student #6 response: *I keep going back to what student #1 said about the change of base theorem. What if we used this theorem to change the base of the log on the left and again to change to base of the log on the right? Can someone tell me if I'm on the right track here?*

$\log_5(x) = \frac{\ln(x)}{\ln(5)}$ *and* $\log_x(5) = \frac{\ln(5)}{\ln(x)}$ *so* $\log_5(x) = \log_x(5)$ *becomes* $\frac{\ln(x)}{\ln(5)} = \frac{\ln(5)}{\ln(x)}$

Determination: Substantive! The student followed-up on a previously suggested method taking the problem to the next level.

Student #1second response: *Oh, that's it, I can see now! You converted each side independently via the change of base. It's so helpful to have all the logs be natural logs instead of a bunch of different bases. Does anyone know what to do from here?*

Determination: Substantive! Paraphrasing is a useful skill to show that you have carefully read what is posted and are able to assimilate it in your own understanding.

Student #4 second response: *I think we can use cross products to solve it.*

Determination: Probably not substantive. Student #4 answered the question posed by student #1, but gave it short shrift.

Suggestion: Show the step(s) of applying the cross products method.

Student #6 second response: *If we do use cross products here then we have to be careful about the notation. I messed up a similar one on the homework. I was trying to write ln(x) times ln(x) and I should have written* $(\ln(x))^2$ *but I wrote* $\ln(x^2)$ *which is wrong. See how I squared the x not the entire natural logarithm? Careful everyone!*

Determination: Substantive! Student provided a tip to the class based on a lesson learned from their own mistake.

Summary: It's not hard to make quality posts if you follow these suggestions in red. Stay active in the discussion boards, they are where much of the learning takes place in an elearning mathematics class. Collaboration and frequent interaction are key!