

**NORTHCENTRAL UNIVERSITY  
ASSIGNMENT COVER SHEET**

Learner: **Steven Diaz**

**THIS FORM MUST BE COMPLETELY FILLED IN**

**Please Follow These Procedures:** If requested by your mentor, use an assignment cover sheet as the first page of the **word processor** file. Use “headers” to indicate your course code, assignment number, and your name on each page of the assignment/homework including this assignment cover sheet. .

**Keep a Photocopy or Electronic Copy Of Your Assignments:** You may need to re-submit assignments if your mentor has indicated that you may or must do so.

**Academic Integrity:** All work submitted in each course must be the Learner’s own. This includes all assignments, exams, term papers, and other projects required by the faculty mentor. The knowing submission of another persons work represented as that of the Learner’s without properly citing the source of the work will be considered plagiarism and will result in an unsatisfactory grade for the work submitted or for the entire course, and may result in academic dismissal.

**LTM5010**

**Dr. Anthony Pellegrini**

**E-Learning: Theory and Process**

**Assignment 6: Two-Way  
Communication Formats**

**Faculty Use Only**

<Faculty comments here>

<Faculty Name>

<Grade Earned>

<Writing Score>

<Date Graded>

Two-Way Communication Formats

Steven Diaz

Northcentral University

In the welcome note that I post in the learning management system (LMS) for each of my math courses, I assert my belief that I can help students overcome their anxieties about mathematics because everyone is capable of learning this subject matter. Nevertheless, I also post a disclaimer stating the key for my assistance to be effective is communication. As a passionate math educator, I want my students to succeed but I can only do this if I know what, how, and when they need my assistance. In many instances, I can anticipate students needing my help based on my teaching experience, knowledge, intuition, and data on students' academic performance. However, I think providing assistance in this manner is ineffective and inefficient because it is an educated guess based on what I think students need, not what they need. Moreover, I will be fostering a teacher-centered learning environment instead of a student-centered learning environment.

Therefore, I need students to ask questions that provide clues on what specific areas they have difficulties with the course content. I need them to communicate their struggles to find how and when their peers or I provide the individual assistance they urgently need to continue progressing in the course. I need students to show or explain their mathematical reasoning that justifies the steps they used to simplify or solve math problems, so their peers or I can analyze their understanding of concepts and skills and provide meaningful feedback. Moreover, students improve their critical thinking skills (Waterhouse, 2005) and metacognitive skills (Allen, 2003) when explaining or justifying their work. I need students to collaborate with their peers, so the following positive and productive experiences occur in the classroom: (a) students are motivated to keep up; (b) students learn from observing the mistakes and successes of others; (c) students refine their understanding of course content; and (d) students gain confidence with their successful public performances (Allen, 2003).

In summary, I need students to be willing to interact with their instructor and peers to foster a sense of community. Learning in this way will minimize students' anxieties and free their focus on just learning mathematics. Baker (2010) cited research in which interaction is broadly considered a defining component of successful learning in onsite and online learning environments, and as a catalyst to influence students' motivation, active learning and participation, and achieving learning outcomes. Woods and Baker (2004) also cited research that concluded a positive correlation between students' perception of sufficient interaction with instructors and peers, and their level of satisfaction with the overall learning experience.

My promise to help students overcome their math anxieties would only be possible if students take advantage of the open channels of communication available in my courses. My plan is to maximize the use of two-way communication tools, available in the LMS that host my courses, to facilitate opportunities for student-instructor and student-student interactions. Waterhouse (2005) noted that student interaction is increased when electronic discussions are integrated in the instructional design of the course. In his transactional distance theory, Michael G. Moore concluded that using electronic communication tools to increase dialog between instructor and students bridge the distance between learners and instructor in online environments (as cited in Baker, 2010). Based on the end-of-course surveys, my online students often communicate they would have preferred taking the math course onsite instead of online. In other words, they were missing the feeling to be part of a group and the interactions that takes place in the physical classroom. If I can integrate effectively two-way communication tools in my online courses, then students will perceive they are communicating with people instead of impersonal objects (i.e. computer) and have the feeling of joint involvement (as cited in Baker, 2010).

I am planning to take advantage of the benefits of the asynchronous communication of forums to provide the following opportunities: (a) to collaborate learning course content; (b) to ask course related questions; (c) to reflect about learning experiences; (d) to communicate privately with individual students; and (d) to encourage interpersonal relationships. On the other hand, I am planning to take advantage of the synchronous communication tool of the whiteboard to schedule remediation or tutoring sessions for individual students. Based on unsuccessful experiences facilitating chats, I will avoid live online learning sessions for the whole class. I think the rapid responses, multiple and unrelated conversations, and unthreaded conversations that takes place in chats are not conducive to reduce math anxieties; on the contrary, chats could perpetuate many of the same anxieties, and perhaps more, which students experienced in the physical classroom. However, I will enable chat rooms to provide opportunities for students to interact voluntarily in a synchronous manner with each other for academic or social purposes.

A trend that I have noticed in my math courses is students are not reading and using the course textbook to grasp course content; instead, my students are mostly relying on the web-based math program (e.g. ALEKS) to learn the course content. The issue with this trend is that students are mimicking the process shown in the examples available in the help tools of the math program instead of grasping the concepts. Unfortunately, students are performing poorly in the quizzes or tests because lack of conceptual understanding and the unavailability of the help tools during assessments. For such reason, I will create asynchronous collaborative discussion threads to check students' comprehension, application, synthesis, and evaluation of the course readings. Waterhouse (2005) suggested that asynchronous discussions are suitable to promote critical thinking than chats because students conveniently respond anytime when they are ready with thoughtful responses.

In these asynchronous collaboration threads, students will be answering open-ended questions in which students responses consist on analyzing and explaining *why* and *how* (Waterhouse, 2005). An example of an open-ended question is asking students to identify typical mathematical mistakes, explain the reasons for the mistake, and how to fix the mistake. Another example is encouraging students to make mathematics their own by asking them to create their own examples for their peers to work out or how they think what they are learning can be applied to their lives (Allen, 2003). Students will also be selecting chapter exercises from the course textbook to demonstrate and explain how the exercises are simplified or solved. Finally, students will be participating in the discussion by working exercises posted by their peers and providing feedback to their peers' responses.

In my Intermediate Algebra blended course, the collaboration threads will be assigned every two weeks throughout the course and it will be 20% of the students' overall grade. Students are required to post a response to the initial question of the discussion by Day Three of the course week and participate actively in the discussion by posting substantive replies at least twice per day on three different days of the course week. My role in the collaboration threads consist on fostering warmth and welcoming learning environment in which students are not intimidated to participate in the discussions. In addition, I must keep the discussion compelling and engaging so higher levels of interaction are achieved. To achieve this goal about the discussions, I can use several of the strategies to enhance learning motivation suggested by Allen (2003): (a) selecting appropriate content that meet the needs of my students; (b) use appealing context; (c) provide intrinsic feedback; and (d) delay judgment. In general, I plan to monitor constantly the discussions but I will only participate by posting at least two substantive posts in four out of seven days of the course week.

Another way I plan to use the asynchronous communication of forums is creating a Question thread, in which students can post questions related with the course that not only the instructor can answer, but also other students. Setting up a Question thread is considered best practice to control the instructor's workload, in particular answering repeatedly straightforward questions about the course through e-mail (Waterhouse, 2005). During weeks when there are no collaboration threads, I will set up *Aha!* discussion threads, in which students will reflect about the learning experiences they have gained during course and share it with the instructor and classmates. An *aha!-moment* is an instant when something that people have been learning or contemplating it suddenly makes sense with an unexpected clarity (as cited in Conrad & Donaldson, 2004). Reflection exercises help students to make connections and value what they have learned in relation with their goals and life experiences. During *Aha!* discussion threads, students are required to post only one thoughtful response: their aha-moment. Discussion about students' aha-moments will be encouraged but not required. Students will have until Day Seven of a course week to post their aha-moment, which they will earn completion points for their posts.

There will be many instances when students want to discuss personal concerns or issues that are affecting their academic performance. In other instances, there will be students who prefer asking questions in a private manner. Finally, there will be instances when I must address privately incidents of students infringing the student code of conduct and responsibilities. Creating an individual forum for each student seems the most logical plan of action to handle all these instances that involves respecting students' rights for privacy. Though handling these instances related with students' privacy can be done by email, phone, or even in person, I think is best practice to document any communication between students and instructor and post it in the

LMS that hosts the course. If the course is audited because a student filed a complaint about the instructor or to evaluate the instructor's competencies to facilitate a course, there is official record of the private interactions that occurred during the course.

Last, I am planning to create *Water Fountain* discussion threads to provide a virtual place for students to socialize and discuss nonacademic topics. Waterhouse (2005) noted that these types of asynchronous discussions are ideal to build a sense camaraderie or togetherness among students. An example of a *Water Fountain* discussion is the *Celebration* thread, in which students share any good news they have experienced lately in their personal lives. I think sharing good news fosters a positive, caring, and productive environment, which improves students' morale to perform better. Students participate voluntarily in these non-gradable discussions, which I will constantly monitor and occasionally participate to show students my human side.

Now, there will be instances when real-time communication will be necessary to meet immediately the needs of my students, in particular those struggling with abstract math concepts and skills. Based on my experience, struggling students prefer the show and tell type of assistance to alleviate their frustrations learning the course content. These students prefer watching/listening the instructor's demonstration and have the option of receiving an immediate response to their questions, so they can gain confidence learning the content. For such reason, I will be scheduling individual remediation or tutoring sessions using the LMS whiteboard during my virtual office hours but without using the chat option; instead, I will communicate with students via telephone so they listen the explanations of what I am demonstrating on the whiteboard. Remediation or tutoring sessions will not last more than 15 minutes; therefore, students are expected to attend these sessions with a list of specific questions about the course content on which they need assistance.

I have demonstrated a preference for asynchronous discussions to facilitate interactions in my math courses for many reasons that I already stated in this paper. However, my students and I are often challenged communicating mathematical ideas using a medium that relies heavily on text. Smith and Ferguson (2004) acknowledged teaching mathematics in an e-learning environment that was designed for language based courses than mathematics is extremely awkward. Communicating mathematical ideas that would only take a few minutes in face-to-face setting, it takes a significant amount of time to communicate in the online setting. Unfortunately, the LMS that host my math courses are not math-friendly e-learning environments, meaning it lacks the natural flexibility of the chalkboard or paper that allows the instructor and students to communicate easily with diagrams, formulas, and text (Smith & Ferguson, 2004). My students often complain of their inability to express their mathematical reasoning or ask questions in written format, which is a reason they do not seek assistance from the instructor or peers. Students fear the instructor and peers will not understand the message they are trying to convey in written format. Waterhouse (2005) noted there are students who shy away from asynchronous discussions because of their preference for oral communication.

There are ways to mitigate the communication challenges that math instructors and students face in text-based online environments. For example, embedding web2.0 tools (e.g. VoiceThread) in asynchronous discussions that allow students to communicate using text, audio, or video. However, these alternatives involve students spending more time and effort to learn how to use these tools to communicate mathematical ideas and the possibility of handling other issues such as technical problems, students' privacy, copyright, etc. If I want to fulfill the promise that I made to my students of helping them overcome their math anxieties, then I need LMS two-way communication tools to be more math-friendly.

## References

- Allen, M.W. (2003). *Michael Allen's guide to e-learning: Building interactive, fun, and effective learning programs for any company*. Hoboken, NJ: Wiley & Sons, Inc.
- Baker, C. (2010). The impact of instructor immediacy and presence for online student affective learning, cognition, and motivation. *The Journal of Educators Online*, 7(1). Retrieved from <http://www.thejeo.com/>.
- Conrad, R., & Donaldson, J. (2004). *Engaging the online learner: Activities and resources for creative instruction*. San Francisco, CA: Jossey-Bass.
- Smith, G., & Ferguson, D. (2004). Diagrams and math notation in e-learning: Growing pains of a new generation. *International Journal of Mathematical Education in Science & Technology*, 35(5), 681-695. doi:10.1080/0020739042000232583.
- Waterhouse, S. (2005). *The power of eLearning: The essential guide for teaching in a digital age*. Boston, MA: Pearson Education, Inc.
- Woods, R.H. & Baker, J.D. (2004). Interaction and immediacy in online learning. *The International Review of Research in Open and Distance Learning*, 5(2). Retrieved from <http://www.irrodl.org/index.php/irrodl>.

## Appendix A

### Example of a Collaboration Discussion Topic

#### **Week One: DQ - Order of Operations**

#### **Due Week One, Day Three (Wednesday)**

To meet the DQ's requirements, post a response to the following:

- Write an expression that simplifies to 7. Your expression must contain exponents, multiplication, division, addition, subtraction, and at least one set of parenthesis. Explain the process you would use to simplify the expression.
- Write an expression for your classmates to simplify using at least three different operations ( $\times$ ,  $\div$ ,  $+$ ,  $-$ ) and one set of grouping symbols.

To meet participation requirements, do the following:

- Simplify a classmate's expression, show how the expression would be incorrectly simplified if computed from left to right, or challenge the class with a complicated expression.
- Respond to classmates who have responded to your expression and indicate whether or not they correctly simplified the expression. Ask clarifying questions if you need more explanation, or help students who seem to struggle with the concept.
- Respond to the instructor's additional participation threads.

## Appendix B

### Example of a Questions Forum

#### **Questions Forum**

Hi everyone,

When you have any questions about the course, or the material, you are in the right place! Take a quick minute and post your question under this forum. By posting your question in this forum, everyone in the class can benefit by seeing your question, and the corresponding answer (whether the answer comes from me or another student). You would be surprised how many others have the same questions you do!

## Appendix C

### Example of a Water Fountain Discussion

#### **Celebration Thread**

Students,

Please feel free to use this thread for anything wonderful that may be going on in your lives, be it a birthday, anniversary...whatever. Let's focus on the good things in our lives and cherish what we have.

By sharing our good news, we are fostering a sense of community that could help us enhance our learning in a positive and productive manner. Share the good news!