

Strategies for Effective Student/Student Interaction in Online Courses

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The relationship between teaching and learning requires instructors to design the learning environment, and students to manipulate and learn content and acquire knowledge. Within the transactional theory of communication, interaction must occur between the instructor and student(s) in order for a feedback loop to occur. Instructors provide feedback to the students, in the classical sense, by correcting errors. As the instructor identifies errors, it is assumed that students are engaged in active learning strategies whereby they recognize inadequacies in their mental models and are motivated to form a deeper understanding of the concept, skill, or attitude. Students provide feedback to the instructor by indicating their misconceptions and clarifications. In addition, the transactional model of communication must account for student-to-student interactions. As the paradigm for teaching and learning undergoes change from teacher-focused to a learning-focused paradigm, these student-to-student interactions are vital for building online learning communities that effectively support productive and satisfying learning interactions, and develop student problem-solving and critical thinking abilities. According to Romiszowski and Mason, “interactivity isn’t inherent, but must be designed so that it is dependent on participation frequency, timely contributions by the members, and the nature of the messages posted. If students get behind they may find the medium to be didactic and passive” (1996, p. 445).

The transactional communication model is consistent with Michael Moore’s concept of “transactional distance”. Moore includes interaction between learner-instructor, learner-content, and learner-learner. It is the intent of this paper to focus on this learner-learner interaction and the instructor’s design strategies for effective student/student interactions in online courses. For the purpose of this paper, learner-learner interaction is defined as the communication, exchange, and support among students about the course content, information, documents, and assignments.

Roles of Online Instructors

Goodyear, Salmon, Spector, Steeples, and Tickner (2001) identified eight different roles for online teachers. These roles described the online teacher as the (a) process facilitator, (b) adviser-counselor, (c) assessor, (d) researcher, (e) content facilitator, (f) technologist, (g) designer, and (h) manager-administrator. The roles of designer and process facilitator are of particular concern when designing and implementing an online course meant to engage students in student-student interactions. The design role was defined as a pre-course activity “concerned with designing worthwhile online learning tasks”, and the process facilitator role as an in-course activity “concerned with facilitating the range of online activities that are supportive of student learning” (p. 69). The design role becomes important in that the majority of the instructor’s time is spent in determining how the course is to be implemented. The design of the content, consistent with the learner-focused paradigm, shifts from “teacher initiative, control and responsibility to shared initiative, control, and responsibility” (Reigeluth, 1999, p. 19). Indeed, the teacher becomes the “guide on the side” instead of a “sage on the stage.” Thus, the instructor is not positioned in the center of the online communication, but as a supporter of students in their learning. This means moving to an inquiry-based educational approach.

Framework

As instructors assume the role of the “guide on the side” and avoid becoming overwhelmed with online teaching, they need a process to follow in order to construct well-designed resources for students. It is up to the instructor

to construct situations, within the resources, that promote student-to-student interaction in order to produce a successful learning community. Often the student-to-student interactions in online courses are rather informal and/or without specific guidelines. As a result, it is necessary to develop and/or refine strategies to ensure productive interactive situations between students. Effective interaction will assist in the establishment of a learning community, stimulate interest, create activity, engage the student, and allow interaction with the information. Such a process for planning and/or analyzing student-student interactions can be based on Reigeluth's (1999) comparison framework for thinking about different theories of instruction. It provides for implementing a variety of instructional theories, including various kinds of learning whether cognitive, affective, or motor. Specifically, these criteria are: types of learning, control of learning, focus of learning, grouping for learning, interaction for learning, and support for learning. An additional category, online discussion technique, is added to clarify the computer conferencing tool implemented.

Working through the Process with the Framework

The following addresses each criterion by providing example questions that an instructor should ask in designing and analyzing learning activities for student-student interaction.

- Type of Learning
 - ❑ What is the purpose of the learning activity and the type of learning activity involved?
 - ❑ What learning theory does the activity address?
 - Does it address such theories as behaviorism, cognitivism, constructivism, or social learning theory?
 - Does the learning activity address an overlapping of theories?
 - ❑ What type of learning activity is involved?
 - Is it memorizing information, understanding relationships, applying skills?
 - ❑ What is the relationship between building knowledge and applying critical thinking or problem-solving?
 - Is the activity requiring the students to engage in both knowledge building and critical thinking?
- Control of Learning
 - ❑ Who controls the learning process?
 - Is it the instructor, student, instructional designer, or standardized tests?
 - Does the instructor, students, or both select the content, goals for the course, resources, and activities?
 - Does the instructor, and/or students, or both evaluate the learning?
- Focus of Learning
 - ❑ How will the instructor focus the learning activities?
 - ❑ Will the learning activities center on a topic or a problem?
 - ❑ Does the instructor want the learning activity to be specific to the domain or is it interdisciplinary?
- Grouping for Learning
 - ❑ Is the learning activity an individual project or should there be collaborative groups?
 - ❑ If there are collaborative groups, should there be pairs, teams, or small groups?
- Interactions for Learning
 - ❑ What is the primary student interaction desired by the instructor?
 - ❑ How should the students use each other for support and as resources?
 - ❑ How should the students interact with the instructor?
 - ❑ How should students interact with content information and resources such as the web, audio, video, hands-on tools, print, or experts in the field?
- Support for Learning

- How can the emotional support for the learning be given?
 - How can the instructor support the students' attitudes and motivations for taking the course?
 - How can support be given for providing students self-confidence in tackling the technology, understanding the content, and minimizing the general frustration level?
- How will cognitive support for learning be given?
 - How can support be given that reinforces appropriate responses or performances or corrects and directs the behavior?
 - How can support be given so students change their perceptions of the content?
 - How can support be given so students are engaged in the cognitive demands of the content?
 - How can support be given so concepts are clarified and ideas are transferred to new or modified conceptual frameworks?
- Online Discussion Technique
 - Should the discussion technique include synchronous (live) or asynchronous (anytime, anywhere) communication?
 - What mode is ideally required by the particular learning activity?
 - If synchronous mode of communication is used, will the software allow for the number of students enrolled in the course?
 - If asynchronous communication is used, how will the instructor control the discourse?
 - How will the instructor control the conversation as it drifts off the topic?
 - How will the instructor know who is contributing and participating in the conversations?
 - How can the instructor draw those students lurking in the background into the conversation?
 - What if the conversations occur over a 3-4 week period of time?
 - How does the instructor provide appropriate feedback?

An Example

The following is an example of the application of the process and framework to an assignment that includes activities that prepare students for their interactive experiences.

Assignment for the Genome Project

This discussion will occur over a three (3) week time period. Read the two articles about the Genome Project. The question is: What impact will the Genome Project have on collection development, public relations, and programming in your high school media center? The class will be divided into small groups.

Applying the Process and Framework

- Type of Learning
 - The purpose of the learning activity is to build knowledge and application of relationships of the role of the library media center to the social, ethical, legal, business and technology issues involved in the topic.
 - The cognitive learning theory is addressed because the nature of the task is for learners to share information, ideas, and opinions or beliefs concerning the implications of the human genome project to collection development, public relations, and programming for the high school media center.
- Control of Learning

- In this example there is a mixture of the instructor and the students controlling the learning process. The instructor has selected the topic and content concerning the organization and administration of a school media center. The students control the learning process since they have to construct a plan associated with the implications for the high school media center in the areas of collection development, public relations, and programming.
- Both the instructor and students evaluate the learning process. The instructor will provide appropriate responses needed to correct and direct the students' performances. The students will provide evaluations of the information they share with other students in the small groups, and from the whole group when they present their overall plan.
- Focus of Learning
 - The learning activities center on a topic, the human genome project, and the problem within organization and administration of high school library media centers.
 - This specific learning activity is specific to the domain of library media centers as well as being interdisciplinary in that it has implications for various content areas in the high school curriculum such as math, science, and technology.
- Grouping for Learning
 - The learning activity is collaborative. Collaborative groups will be assigned a topic area of collection development, public relations, or programming.
 - The collaborative groups will consist of small groups, i.e., 3-6 members per group.
- Interactions for Learning
 - The primary interaction wanted in this assignment is student-to-student.
 - The students use each other as resources and for support by commenting on the information they collect from various information resources, observations and experiences, and each other. In addition, as the small groups present the information to the whole group, comments from the whole group will expand their perspective they provide questions to determine why the particular plans were framed in a particular manner.
 - The students should interact with the instructor to clarify any questions about the assignment. The instructor also needs to provide guidance and direction associated with the appropriateness of the developing plan.
- Support for Learning
 - The motivation involved in this learning activity is based in reality thus providing a relevant learning experience for the future library media specialists. In addition, the instructor can provide opportunities for students to ask questions regarding clarification of the assignment and review guidelines. The instructor can also provide opportunities for other students to indicate their understanding of the assignment.
 - The instructor provides cognitive support for learning by participating in the small groups with the students as they begin to gather information sources, ideas, and opinions within their small group. The instructor provides corrective and direct feedback. The instructor, interacting in small groups, provides guidance enabling the students to recognize alternative ways that the organizational and administrative topics may be conceptualized. In this manner, the students can practice generating alternative interpretations involved in solving problems in the task.
- Online Discussion Technique
 - The small group members may decide upon the discussion technique for their interaction. It may be synchronous or asynchronous (anytime, anywhere), or both types of communication depending on the demands of the participants schedules.
 - The final presentation of the small groups may be in a synchronous chat session so that the whole group may share observations and elaborate upon the ideas presented in the plan. This particular assignment will occur over a 3-4 week period of time. The instructor will have to structure times for synchronous sessions

with each small group or provide a date and time for providing feedback focusing on the appropriateness of the developing plan. The instructor will also want to provide guidance to the students relating to closure to the project. For example, the students may need guidance determining when they have located enough resources and synthesized the information into their final product.

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Biographical Sketch

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