Interaction in Cooperative Learning

Hélder Fanha Martins
Lisbon Polytechnic Institute, Portugal

Maria João Ferro
Lisbon Polytechnic Institute, Portugal

INTRODUCTION

This article discusses the question of interaction in corporate e-learning. I will define the three kinds of interaction in Moore's model, explain the value of interactivity in learning, evaluate the benefits and limitations of using interactions, discuss the differences and similarities among learning through computers, learning from computers and learning with computers.

Interaction takes on distinctive meanings in different contexts. Interaction is found in computer games, e-commerce sites, user-interface designs, online media, and education. Users have experienced interactions that set their expectations and definitions. The different experiences create challenges for instructional design experts because they muddy the definition and establish expectations regarding interactions that may not have direct transference to interactive online learning.

BACKGROUND

According to Gilbert and Moore (1998), an accepted definition of interaction in the literature on computer-mediated instruction is a reciprocal exchange between the technology and the learner, a process they refer to as "feedback." This reciprocal exchange can be categorized into three kinds of interactions:

1. Learner-content interaction refers to the interaction between the learner and the content being studied. The action in this type of interaction results from the learners having conversations with themselves regarding the content. The material being studied triggers an internal dialog. Thus, learner-content interaction occurs when the learner reflects on the content and questions the material in order to analyze, synthesize, and evaluate it.

2. Learner-instructor interaction refers to interaction in which the learner and the instructor have exchanges in which the instructor seeks to stimulate interest, clarify questions, guide, motivate, and dialog with the learner. This kind of interaction can take place in a class or in a one-on-one setting. The key difference between this and the learner-content interaction is that the instructor can give feedback on the application of new knowledge and assess the learner's understanding of the material.

3. Learner-learner interaction refers to the interaction among students. Given the range of technology options available, learners can experience this type of interaction in real time or asynchronously—as part of a threaded discussion or in an exchange of e-mail with an instructor present or not present; and one-on-one or one-to-many.

This model of interaction has its critics. It has been argued that there is a difference between "interaction" and "interactivity" (Wagner, 1994). Wagner points out "*interaction* is an interplay and exchange in which individuals and groups influence each other" (1994, p. 20). She argues that because interaction requires a reciprocal exchange it is only possible to have this kind of relationship between people, that is, learner(s)-learner(s), and learner(s)-instructor. In contrast, Wagner observes that "interactivity" seems to have emerged from "descriptions of technological capability for establishing connections from point-to-point . . . in real time" (p. 20). Thus, interaction focuses on people's behaviors, while interactivity focuses on characteristics of the technology systems.

Collins and Berge (1996) suggest there are two kinds of interaction in learning, the student individually interacting with content and the student engaged in social interaction about the content with others. In their view, "Interacting with content means actively processing and combining this content with prior knowledge."

Terry Anderson (2003) has developed a theory called the Equivalency of Interaction. His theory sidelines this debate by suggesting that:

Deep and meaningful formal learning is supported as long as one of the three forms of interaction (student-teacher; student-student; student-content) is at a high level. The other two may be offered at minimal levels, or even eliminated, without degrading the educational experience. High levels of more than one of these three modes will likely provide a more satisfying educational experience, though these experiences may not be as cost or time effective as less interactive learning sequences.

This theorem implies that an instructional designer can substitute one type of interaction for one of the others (at the same level) with little loss in educational effectiveness—thus the label of an equivalency theory (Anderson, 2003).

MAIN FOCUS

Interaction and the Importance of its Usage

Interaction is a vital part of the learning process (Tu, 2000), and the level of interaction has an impact on the quality of the learning experience (Vrasidas & McIsaac, 1999; Navarro & Shoemaker, 2000).

Instructional designers should make learners active participants, not passive spectators in the process. Active learning has been described as "providing opportunities for students to meaningfully talk and listen, write, read, and reflect on content, ideas, issues, and concerns" (Meyers & Jones, 1993, p. 6). This is not a small mandate. Interaction shifts the instructional focus from the facilitator and materials to the learner, who must actively engage with peers, materials, and the instructor.

A review of the literature reveals other reasons for using interactions. It has been shown that higher levels of interaction are associated with improved achievement (Gokhale, 1995; Kekkonen-Moneta & Moneta, 2002) and positive learning attitudes (Fulford & Zhang, 1993; Althaus, 1997).

Before we leave readers with the impression that interaction is a silver bullet for corporate e-learning,

we must discuss the flip side of interaction. Interaction requires that students bring meta-cognitive skill to the task of learning. Many adult learners are accomplished in the role of passive learning, but the role of active learning is foreign and uncomfortable territory. There is also the issue of motivation. Simply designing interactions does not ensure learners will engage in discussions, read, write, or reflect on the content.

The Benefits and Limitations of Interactions

Understanding the benefits and limitations of educational interaction is essential for educators who are advising clients and developing programs. When clients have so many definitions and ideas of interactivity, being able to assess the value of using interaction is an essential skill. As Roderick Sims (1997) points out, understanding "interactivity is the one element which can distinguish what we produce as educational technologists [and instructional designers] from what other developers' of-so called interactive products produce" (p. 159).

The value of using interactions depends on your instructional goals, audience, and budget. Interactions are essential to the learning process and can lead to increased learner satisfaction when used well. This section reviews the benefits of adding interaction to your program.

Motivation

Interactions have a great deal of impact on learner motivation and learner success. In e-learning, as in any distance education, attrition can be high, so strategies need to be used that encourage completion. Research has shown that learner-instructor interaction is perceived as being most highly valued by students (Fredericksen, Pickett, Shea, Pelz, & Swan, 2000).

Practice and Increased Retention

Interactions provide the learner with an opportunity to practice new skills in a safe and structured environment. The value of interaction is that it prompts learners to retrieve information from memory, and it is this retrieval practice that prompts the learning improvements (Bjork, 1988).

8 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/interaction-cooperative-learning/17683

Related Content

The Role of Mechanics in Gamification: An Interdisciplinary Perspective
Miralem Helmefalk, Siw Lundqvistand Leif Marcusson (2019). *International Journal of Virtual and Augmented Reality (pp. 18-41).*
www.irma-international.org/article/the-role-of-mechanics-in-gamification/228944

Online Video as a Social Activity
Justin D. Weisz (2011). *Virtual Communities: Concepts, Methodologies, Tools and Applications (pp. 985-1001).*
www.irma-international.org/chapter/online-video-social-activity/48718

Using UX Design Principles When Designing Context-Rich Learning Experiences
Travis J. Smith (2023). *Designing Context-Rich Learning by Extending Reality (pp. 75-88).*
www.irma-international.org/chapter/using-ux-design-principles-when-designing-context-rich-learning-experiences/323165

The Role of Mechanics in Gamification: An Interdisciplinary Perspective
Miralem Helmefalk, Siw Lundqvistand Leif Marcusson (2019). *International Journal of Virtual and Augmented Reality (pp. 18-41).*
www.irma-international.org/article/the-role-of-mechanics-in-gamification/228944

Teacher Professional Development through Virtual Campuses: Conceptions of a 'New' Model
Athanassios Jimoyiannis, Maria Gravaniand Yiasemina Karagiorgi (2012). *Handbook of Research on Practices and Outcomes in Virtual Worlds and Environments (pp. 327-347).*
www.irma-international.org/chapter/teacher-professional-development-through-virtual/55909