Asynchronous vs. Synchronous Interaction

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INTRODUCTION

The rapid development of technology greatly influences computer-based learning in distance education. One of the most important aspects is interactivity, and this is threefold: student-student interaction, student-instructor interaction, and student-content interaction (Moore & Kearsley, 1996). As distance-education technology increasingly moves toward multimedia-oriented systems, a more effective synergy of synchronous and asynchronous interaction is required. As discussed by Garrison (1990), the quality and integrity of the educational process in distance learning largely depends upon sustained, two-way communication. In this article, we will look into the characteristics of both types of interaction and discuss their advantages as well as impact on the three forms of interactions. We will also look at some examples for both asynchronous and synchronous interaction technologies in facilitating distance learning. Finally, we look at some possible future trends in distance-learning interactivity.

INTRODUCTION

The choice and selection of the most effective delivery system in the learning process is important as it directly impacts the level and quality of interaction. Both asynchronous and synchronous interaction serve to bridge the gap between the learners and instructor and between learners themselves. Online learning environments strive to facilitate a holistic learning experience that takes advantage of technology to make up for lost opportunity in face-to-face learning. McIsaac and Gunawardena (1996) recognized the importance of a more effective synergy of asynchronous and synchronous interaction as distance-education technology is increasingly moving toward multimedia-oriented systems. In an online environment, the level, type, and dynamics of interaction that occur depend on the choice of asynchronous or synchronous delivery (or a combination of both in variable proportions). Researching on the opinions and stands of experts in distance education, Soo and Bonk (1998) found that the experts feel that learner-learner interaction impacts student learning the most (compared to learner-instructor interaction and learner-content interaction). The notion of collaborative learning in an online environment is still quite new and is an area that requires much research.

Although much focus is directed toward the asynchronous mode, it is important to note and acknowledge that both asynchronous and synchronous interaction have their advantages as well as shortcomings. It is also imperative to realize that the selection of delivery systems largely depends on the needs of the students and the nature of the subject matter.

THE NEED FOR INTERACTION

Undoubtedly, interaction will occur in any learning environment. Wagner (1997) believed that interaction consists of reciprocal events requiring two objects and two actions where interplay and exchange occur and individuals and groups influence each other. Barker (1994) highlights the importance of interactivity as an essential and crucial factor for acquiring knowledge.A virtual classroom environment tries to emulate classroom environments, albeit, with different tools and approaches. In Lynch (2002) it is shown how traditional classroom-based interactions (class discussions, role playing, case studies, question and answer sessions) can be translated into parallel forms of Web interactions using the various communication tools available. Kinshuk and Yang (2003) discussed some of the frustrations and limitations of the learning process in a virtual environment. Some of the major problems noted were the lack of (a) human interaction

(learner-learner and learner-instructor), (b) learner support (social and administrative), and (c) contextual interaction (learner-content). Communication technologies, through the use of various tools, must serve to address these problems in order to create an effective and satisfying learning experience for the learners. According to Shelly (1996), the most important factor for successful distance learning is a caring, concerned teacher who is confident, experienced, at ease with the equipment, uses the media creatively, and maintains a high level of interactivity with the students. This reflects the importance of learner-instructor interaction, social support for learners, and effective course-content management by the online instructor.

In discussing online interaction, Bowman (2001) noted that the stages involved in computer-mediated communications or CMCs (socialization, exchange of information, construction of knowledge, and development or application of knowledge) require specific CMC skills, which fall on the responsibility of the online instructor. Bowman reiterated that these skills are crucial for effective encouragement, support, and moderation of online discussions.

Jonassen, Peck, and Wilson (1999) elaborate on an even more important aspect of the usage of telecommunications tools, that is, in supporting, nurturing, and encouraging a collaborative virtual learning community. They discussed the various ways and tools in which technology plays in learning.

TYPES OF ONLINE INTERACTION

Online interaction falls into two categories: asynchronous and synchronous interaction.

Asynchronous Interaction

Asynchronous interaction simply refers to interaction that occurs at different times, that is, not in real time. This is the major form of interaction in computer-mediated communications. Often, this form of interaction is closely associated with distance learning as it provides plenty of benefits to the learner and the online learning environment.

Advantages of Asynchronous Interaction

The widespread use of asynchronous tools is testimony to its importance. The advantages of asynchronous interaction are as follows.

Flexibility

It allows access to the learning material at anyplace and anytime (provided the necessary equipment and technologies are available) from home or workplace. Learners choose to participate when and if they want to.

Time to Reflect

There is no need to give immediate response. It gives the opportunity for learners to think, research, reflect, formulate, and back up their ideas and thoughts in a more coherent and concise manner. Learners can always access archived discussions to follow the flow of discussion in a constructive manner (Sproull & Kiesler, 1991). In other words, they have the records of what has been discussed and how they have been discussed. Learners can wait and input their ideas when they are comfortable with the discussion.

Anonymity or Pseudonymity

This encourages learners' participation in discussion as it provides a democratic atmosphere where learners are more comfortable in giving their input. Learners feel more confident and contribute more as there is less pressure (Chester & Gwyne, 1998). This is especially true for learners who tend to be shy or laid-back in classes.

No Time-Zone Constraints

Global communication and participation is available at the time convenient to learners around the world (Johansen & O'Hara-Devereaux, 1994). This is particularly important in the present international education scenario where learners in an online environment come from different countries.