Interactivity Research Studies

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ABSTRACT
Today, educators have raised important questions about the quality of interactivity or interaction between students and between teachers and their students. The author has investigated interactivity, completed a doctor’s degree from a distance education school and teaches online for the University of Phoenix. The discussion highlights interactivity research studies, outlines vital online teacher competencies and recommends the need for research studies into professional development for online teachers.

Key Words
Interaction, Interactivity, Computer-mediated, Distance education, Teacher competencies

Introduction

The distance education format challenges teachers to develop a learning environment that places more responsibility on the student to accomplish academic tasks with minimal teacher assistance. It is an open-ended learning model that will bring some anxious moments to the best on-line teachers. For instance, educators who are used to having a tightly controlled classroom might feel somewhat uncomfortable monitoring on-line discussion forums. The discussion format has an unpredictable dimension that makes student-centered learning dynamic but less easy to control. Teachers appreciate the lively debates that characterize most on-line classes. Students can offer thought-provoking dialogue because they have time to reflect on the posted comments before sharing their thoughts (Lewis, Treves, & Shaindlin, 1997).

The level of interactivity (communication, participation and feedback) or interaction between students and between students and their teachers has a major impact on the quality of computer-mediated education programs. Berge (1999) observes that “interaction does not simply occur but must be intentionally designed into the instructional program” (p. 5). Therefore, it is vital that distance educators have a clear understanding of how to promote interactivity in their online classrooms. The writer will highlight interaction research in distance education. The discussion will provide insights that should help online educators become more effective in developing strategies that promote academic dialog.

Importance of Interaction in Distance Education

As educators refine their philosophy of distance learning, they are concerned about sustaining interactivity in their educational process. Today’s adult learning theories are built upon the premise that teachers will assist their students to become self-directed and independent (Moore, 1990). Learners must assume responsibility for their educational experiences, but independent study has natural limitations. If learners do not receive adequate teacher feedback and reinforcement, students will not always know whether they possess an accurate knowledge of their subject matter. A primary goal of adult education is to promote self-directed attitudes while discouraging excessive dependency upon the instructor (Milheim, 1993).

Computer-mediated education creates unique risks for both tutors and learners. Tutors can face heavy workloads from large online classes that require large amounts of personal e-mails, phone calls, and discussion forum comments. The quality of online interactivity with students can suffer, if teachers become overwhelmed by constantly having to deal with large classes. Yet, fellow classmates who appear to offer more intelligent discussion comments can discourage learners. It can have a negative impact on the quality and quantity of their discussion postings. As learners devalue their personal knowledge and life experiences, their online contributions can become more driven by an obligation to get through the experience (Rowntree 1995).

Research literature on teaching and learning in higher education does affirm the importance of interactivity within the educational process. Adult educators integrate academic communication into their learning theories as
an essential feature of their educational models. Collis (1998) shared the following six vital instructional principles that should characterize adult education:

1. Both learner and educator play an active and unique role in the educational process.
2. The process of creatively acquiring knowledge involves human interaction and learner competence that are developed and evaluated within a communication-oriented educational model.
3. Contemporary models of learning support learned centered instruction that encourages self-assessment, personal reflection, and elicit learner articulation of their ideas.
4. The learning environment should maximize meaningful and reflective interactions while providing a variety of opportunities for feedback.
5. Creating instruction that promotes learner self-regulation and individual responsibility is the product of educators who are academically well prepared and monitor the quality of student work.
6. Adult educators recognize that students want to move efficiently through their studies, in both time and energy; students do not automatically have good study skills, discipline, or motivation.” (p. 375)

The growth of distance education schools continues while today’s educators and learners raise serious concerns about the reduced levels of human interaction during their on-line classes. Educators are fearful that computer-mediated education will reduce human interaction and writers stress the need to devise strategies that bridge the communication gap between physically isolated on-line learners (Jaffee, 1998; Tinker, 1997). Interactivity is an issue that concerns learners, teachers, administrators, and instructional designers who want to promote independent learning without losing social interaction. Saba (1998) stated that “the success of distance education, to a greater degree, will depend on the ability of educational institutions to personalize the teaching and learning process (p. 1).”

Distance education literature makes frequent references to learners being independent and self-directed. Yet, the goal of being self-directed is considered a life-long process that involves the element of social interaction. Knowles (1990) advocated fostering learner competencies by having a positive psychological climate built upon trusting human relationships. Academic collaboration should be pleasant and support authentic sharing between learners. Knowles stated that “learning is a very human activity. The more people feel they are being treated as human beings—that their human needs are being taken into account—the more they are likely to learn and learn to learn (p. 129).

Interactivity/Interaction Research Studies

Burge (1994) investigated two on-line graduate education classes using in-depth interviews with 21 master of education students and their two instructors. The interview results indicated that learners had specific expectations of their on-line peers in the following four areas:

- **Participation** - share different perspectives, demonstrate application of knowledge, risk sharing tentative ideas, and show interest in the educational experiences of other learners.
- **Response** - provide constructive feedback, respond to questions without being repetitive, be a dependable small group member, share positive remarks with others, and actively participate in relevant dialog.
- **Affective feedback** - use learner’s names during course work, provide a sense of community or belonging to others, show patience, offer compliments, and encourage a learning atmosphere that is affirming and supporting.
- **Focused messaging** - use concise on-line statements and avoid excessive messages that do not contribute to learning within the group.

Burge’s (1994) study did identify instructor behaviors that were considered vital to being effective distance educators. The first tutor competency involved being able to manage their class discussions. Instructors should develop a class structure and on-line teaching style that encourages creativity, reflective thinking, and self-directed learning. Teachers should operate as monitors who keep the class discussions focused (e.g. reduce idea fragments), moving at a good pace, and constructive. In fact, educators should reduce negative learning experiences by controlling (e.g. censuring their remarks) those who interfere with the class dialog. Additionally, study participants expected that instructors should play a vital role in assisting learners. Burge (1994) related that “instructors should support by giving fast and relevant technical help, sending timely and individualized content-related messages and feedback, with, if possible, summaries of discussion and guidance about resources, and offering affective support (welcome, encourage, show empathy, role model support-giving” (p. 30-31).

Burge’s (1994) investigation did explore the strengths and weaknesses of computer-mediated education. Interviewees appreciated the flexibility in working in the discussion format that gave them the freedom to
participate according to their schedules. Yet, the study participants expressed problems with their on-line educational experiences. For instance, several learners noted class discussions were only relevant if students responded within a narrow time frame. Students who fell behind in their discussion postings sensed that they were missing opportunities for interacting with others. When learners felt pressured to keep up with their classmates, that was complicated by information overload and fragmented discussions. Learners had major problems handling the quantity of data generated during their course work (Wegerif, 1998).

Burge’s (1994) revealed the study participants positive and negative experiences with peer interaction. Students enjoyed having others help them, sharing critical feedback, and observing a diversity of perspectives during their on-line course. The study participants cited having problems with other learners during their group work and class discussions. The writer’s research on interactivity (Muirhead 1999) did identify students who expressed concern that group work can place unfair demands upon a few individuals who do all the work for the entire group. Teachers can help prevent negative group experiences by closely monitoring their work and giving grades to students based on their actual contributions. Additionally, it is important to have assignments that can be completed in a reasonable amount of time. Distance educators must create an online presence through posted messages that offer guidance and being available for student questions. The instructional support helps groups to stay focused on their assignments while developing effective online dialog with their classmates (Palloff & Pratt 1999).

Research studies on interactivity reveal that students have a real need to make genuine connections with their peers and instructor (Muirhead 1999). The affective and psychological dimension of distance education is an important part of their overall learning process. Yet, online instructors face the dilemma of how to foster interaction with students who vary in their need for academic guidance. Often, this problem is portrayed as teacher-directed versus student self-directed learning models. In reality, the online teacher will have to adapt his/her teaching style to meet the needs of their students. Berge (1999) relates that interaction in education “involves a continuum from teacher-centered to student-centered approaches” (p. 9).

As an online faculty member for the University of Phoenix, my teaching assignments have involved facilitating graduate research classes. Often, students are new to computer-mediated education and their first week of class is a critical time for helping students to adapt to working online. Students embark on their academic journey with excitement that they are pursuing a graduate degree. Yet, they are apprehensive about working in an unfamiliar environment. Therefore, my job involves helping students become more comfortable and confident learners who are willing to take some educational risks. It is important that the teacher creates a friendly class atmosphere that encourages people to share and ask questions. For instance, it is wise to personally greet each student to the class with an e-mail note and demonstrate interest in their academic goals. During the class, students will grow more independent and their questions will reflect a different set of learning needs. In fact, students will often help each other with learning problems (e.g. using Outlook Express). Online teachers learn to use a variety of instructional strategies that enhance student interaction while promoting both self-directed and community oriented learning objectives.

**Distance Educator Competencies**

Salmon (2000) offers superb insights into essential teacher competencies from her action research studies on Computer Mediated Conferencing (CMC). She has extensive online experience as a trainer of e-moderators for the Business School at the Open University (United Kingdom). Her findings were based on a combination of content analysis of online communication of students and teachers, focused group work and testing and evaluation of a new teaching and learning model. Salmon utilizes research studies to develop a comprehensive chart of five e-moderator competencies:

1. **Understanding of online process** - understand how to promote group work, pace online discussions, experiment with new ideas
2. **Technical skills** - use software to facilitate student interaction by monitoring student messages and create conferencing opportunities
3. **Online communication skills** - able to effectively interact with students by using concise and clear messages that encourage academic dialog and personalize the online experience
4. **Content expertise** - credible subject matter knowledge and experience to share comments/questions that stimulate lively debate
5. **Personal characteristics** - able to adapt to different teaching situations and demonstrates a genuine excitement about online learning
The list of five competencies can be used in a variety of ways: by online trainers for designing professional development plans for faculty members, help administrators recruiting online personnel and distance educators who are creating new curriculum materials for their classes. Additionally, software developers can assist online interaction by creating new products that improve the text-based environment. Salmon (2000) relates that software developers “can enhance the use of metaphors online and provide interesting and purposeful learning environments onscreen through a wide range of icons and visual techniques” (p. 97).

**Conclusion: Need for Professional Development Programs and Research**

A major theme of interactivity literature involves the challenge of providing quality online instruction. Heath’s (1998) experience with an undergraduate political and social philosophy class is a good example of the multidimensional nature of online interaction. The class began with good student involvement but their online participation declined as the semester progressed. Yet, Cronje (1999) and Reinhart (1998) reported have very positive online educational experiences.

Why is there such a discrepancy in reports about distance education classes?

Cornell (1999) relates that research at the University of Central Florida reveals a problem with teachers and students of not being properly prepared for their online class work. The research project identified a variety of student problems: feeling isolated due to inadequate teacher feedback, struggling with technical aspects of the Internet and computer technology, and time management problems that resulted in failing to complete assignments. Teachers reported that they appreciated the flexibility of online instruction but struggled with increased time demands, technical problems with the technology, reduced student contact and a diminished sense of control.

Researchers need to examine interaction differences between undergraduate and graduate students because they have different learning needs. Interaction research studies highlight the need for distance education schools to invest more of their resources into the professional training of their educators. Additionally, research studies are needed to investigate what are the best staff development programs for online teachers. Today, the quality of online interaction in computer-mediated classes varies greatly which indicates that changes are needed in the professional training of online teachers.

**References**


