Enhancing Social Interaction in Computer-Mediated Distance Education

Moderator & Summariser:
Brent Muirhead
Faculty, University of Phoenix Online, USA
Tel: +1 770 751 1783
dedu@mindspring.com

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Pre-discussion paper

Introduction

Contemporary distance education schools are striving to have the most effective educational programs that encourage a dynamic combination of being flexible, individualized, personally and professionally challenging. As distance education schools grow in popularity, distance educators and their learners are raising important instructional questions about the quality of these computer mediated educational programs. A vital academic question involves the social interaction that occurs during online class work. Educators are wondering whether the online format will provide adequate opportunities for genuine dialogue and social interaction that are vital elements in the learning process (Hobaugh, 1997).

The researcher offers a practical definition of interactivity that affirms the human dimension of this term. Interactivity involves participation by the learner in on-line communication between learners and with their class tutors. Additionally, interactivity among learners can be immediate (e.g. phone call/chat session) or a delayed personal encounter (e.g. discussion forum). The definition highlights the personal nature of sharing information during distance education classes (Wagner, 1994). Naturally, learners interact with their course materials through reading their textbooks, journal and discussion forum comments from other learners and their tutors. The subject content provides an academic foundation for meaningful dialog within a distance education class.

Research Studies on Interactivity

Distance education literature frequently mentions the need for research into interactivity (McNabb, 1994). The subject of interactivity has generated controversy among distance learning professionals who raise questions about the quality of on-line courses. The computer-mediated debate has occurred because many educators believe that interactivity is a vital element in the educational process. Wagner (1997) stated that “distance learning practitioners --- particularly instructors and program administrators --- seem to view interactivity as the defining attribute of contemporary distance learning experience” (p. 19). Critics usually stress that interactivity is the missing element or ingredient in distance education because classes lack the traditional face-to-face interactions. However, distance education supporters claim that contemporary on-line classes contain effective interactivity learning experiences. Simonson (1995) argued that educators must strive “…to make the experience of the distance learner as complete, satisfying, and acceptable as that of the local learner” (p. 12). In fact, proponents state that interactivity in distance education is just as good or even better than the traditional classroom (Wagner, 1997).

Harasim’s (1987) study on computer-mediated instruction examined two graduate education courses taught through the University of Toronto. The majority of students felt quite comfortable using computers prior to their distance education courses. Instructors provided two face-to-face training sessions and resource learning kits (e.g. course guides) to help the students prepare for the course. The students' responses to open-ended questions and casual remarks about the courses were very positive. Harasim (1987) found that students cited the following seven distinct advantages to on-line education:

"[a] increased interaction: quantity and intensity; [b] access to group knowledge and support; [c] democratic environment; [d] convenience of access: the ‘24 hour’ class; [e] user control over the learning interaction; [f] motivational aspect; and [g] text-based communication” (p. 124).
Davie (1988) investigated two graduate online education courses at the University of Toronto. The students worked on writing projects with partners and analyzed case studies in small groups. At the end of courses, students met with Davie and described their learning experiences. The 26 students expressed a high level of satisfaction with interaction with their teacher and course structure. Students commented favorably on their collaboration with other students. The students successfully completed their writing assignments by having effective strategies for doing group work. Students learned to plan cooperative writing activities and establish clear expectations for each student.

Mason (1991) studied interactivity in a distance education class at the Open University in Great Britain. The investigation found that tutors played a major role in directing the online discussions. Instructors influenced the discussion process by encouraging new topics, sharing new material, and redirecting the conversation patterns. The project did find that student interactions were fostering learning by integrating personal experience into their class discussions and gaining insights (e.g. how others think) from other students. Yet, only one third of the students were actively engaged in providing and receiving online feedback. The study raised concerns that student interactions did not promote critical thinking opportunities to seriously examine course themes. Student discussion contributions were examined and organized into the following six categories of interactions:

1. Use of personal experience related to course themes
2. Reference to appropriate material outside the course package
3. Comments on others’ opinions, both students and tutors
4. Introduction of new issues for discussion
5. Students posing questions for the group

Horn (1994) and McNabb (1994) discussed research studies on interactivity and raised questions about the quality and quantity of dialogue in computer-mediated courses. Genuine interactivity between tutor and student can be hindered by an assortment of educational problems. Students can be confused about the quality of their work when they have trouble contacting their teachers about their assignments, and their classes lack specific academic standards. The writers stressed the need for more research on the human dimension of distance education and argued that feedback is a vital element in the teaching and learning process.

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

1. Participation - share different perspectives, demonstrate application of knowledge, risk sharing tentative ideas, and show interest in the educational experiences of other students.
2. 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.
3. Affective feedback - use students' 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.
4. 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 online 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 students. 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 schedule. Also, the interviewees enjoyed having the freedom to reflect on a topic before sharing with their classmates and instructor. Yet, the study participants expressed problems with their online educational experiences. For instance, several students 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 students felt pressured to keep up with their classmates, that was complicated by information overload and fragmented discussions. Students had major problems handling the quantity of data generated during their course work (Wegerif, 1998). Students acquired coping strategies, such as filtering useful messages (e.g. using key words to identify ideas) and creating paper transcripts.

Burge’s (1994) research highlighted the interviewees’ 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 students during their group work and class discussions. Students expressed disappointment with fellow students who were not timely and relevant in their message postings. The affective and psychological dimension of distance education was an important part of their overall learning process. Students demonstrated a real need to make genuine connections with their peers and instructor.

Hallett and Cummings (1997) studied a small computer-mediated undergraduate course in educational psychology. The class utilized a Web-based environment that was created to promote authentic and interactive learning experiences. The instructor found that interactivity among students was a very illusive goal. Students did not post additional on-line comments beyond the required assignments because the work was not graded. Students had a negative view toward posting messages because they felt lost in cyberspace. The absence of visual cues and immediate instructor responses to their comments played a role in their negative perspectives. The experimental study revealed how achieving interactivity was a complex educational process influenced by a variety of learning factors.

Heath (1998) shared teaching experiences from an on-line undergraduate political and social philosophy course taught through the State University of New York. Students were expected to participate in on-line discussions and 15% of their course grade involved sharing meaningful and consistent comments. Students appreciated the teacher’s on-line interventions by offering prepared commentary and participating in the class dialog. Yet, students displayed a variety of participation levels and comments varied in quality. The irregular posting of comments by students had a negative impact on the class. As the semester progressed, student on-line participation declined and fewer comments were posted. Heath (1998) acknowledged that “even if the students in an on-line course possess strong motivation and good writing skills, there is still the matter of insuring that enough students are participating, thoughtfully, in the on-line discussions” (p. 13).

Cronje (1999) taught a graduate distance education class at the University of Pretoria. Study participants were working toward a master's degree in computer-assisted education. Students created their own support system by e-mailing classmates for help, however, two of the cooperative learning groups joined other groups because four of the students dropped out of the class. Cooperative work projects did provide a framework for students to develop deeper relationships with others, the on-line discussion groups operated successfully during the course, and students reported positive benefits (e.g. new network relationships).

Research studies on interactivity reveal that interactivity is a multidimensional entity that is dependent upon a variety of factors. For instance, students considered Reinhart’s (1998) contemporary on-line American history course a positive educational experience. Yet, the instructor felt that creating an interactive course environment was a very labor-intensive venture. Educators need significant amounts of time to develop on-line courses that provide real opportunities for good student-teacher dialog. Additionally, students must become more active and self-directed learners, which can be a major change for those who tend to be passive about their education (Kearney, 1997). Students can procrastinate on their assignments because they have fewer teacher prompts and greater control over their learning. Distance education courses create a false sense of security for some students who neglect studying because it is “out of sight, out of mind” (Bourne, McMaster, Rieger, & Campbell, 1999).

Muirhead’s (1999) interactivity study at Capella University involved 93 graduate students (master’s and doctoral). The research project focused on three aspects of interactivity: communication, participation and feedback. The study identified 44 students (47.3%) who felt that classmates who were late posting their weekly on-line comments had a negative impact on dialog because a reduction in student contributions weakened the quality of discussion. The investigation found that 66 students (70.9%) had been offered or had received tutor assistance with their class work. A major overall conclusion of the study involved 84 students (90.3%) who related the importance of maintaining on-line communication throughout the course to enhance interactivity.

The late on-line posting issue highlighted a larger issue that, to enhance interactivity, both tutors and students must be active participants who are consistently involved in a relevant academic dialog. In the study, students...
clearly indicated that consistent on-line communication was the key to improving interactivity. Students wanted tutors who provide timely and relevant feedback on their discussion comments and term papers. The study did affirm that tutors were offering academic feedback to many students (66 = 70.9%) but there was a problem with tutors giving consistent feedback. Therefore, both tutors and students are experiencing some problems in computer-mediated education (Heath, 1998).

**Importance of Interactivity Study**

A significant factor involved the important role interactivity plays in today’s computer-mediated educational programs. Also, on-line interactivity has the potential of enhancing the quality of distance education, while improving student interactivity to create a climate that supports cooperative learning, critical thinking activities, and meaningful tutor/student academic collaboration (Milheim, 1995).

Administrators and educators are not always sure how to devise relevant programs without having a more accurate profile of their adult students. Currently, there is only a limited amount of research on topics like interactivity among students and their tutors (Bullen, 1997). The absence of face-to-face, peer, or teacher interaction possibly leads to negative educational experiences because of social isolation and working in an apparently impersonal environment (Hughes & Hewson, 1998). Ultimately, a failure to address social interaction issues could lead to an increase in the dropout rate among students.

**Student Ideas**

Muirhead’s (1999) research did generate a number of student ideas on how to improve interactivity. Here are some of their suggestions.

1. Student accountability for keeping up with weekly discussions.
2. Tutors should create more intellectually challenging discussion questions.
3. Instructors being more active in their classes.
4. Integrating more group projects and chat sessions into online classes.
5. Tutors should promote more learner centered activities and have a greater influence on course direction.
6. Students wanted more personalized contact with their tutors to humanize their classes (ex. e-mail comments that reveal the tutors personality).

**Potential Interactivity Research Studies**

Future interactivity investigations could explore the following four areas: (a) conduct case studies on what factors promote interaction within group activities; (b) explore alternative teacher evaluation systems for professional development for distance educators (Simonson, 1997), (c) perform a content analysis of textual material produced during on-line discussions to investigate critical thinking and interactivity; and (d) compare and contrast interactivity attitudes between undergraduate and graduate on-line students. Today’s distance education doctoral students have a variety of interactivity research projects to choose from. Hopefully, new studies will offer new and relevant insights that should assist students, administrators and distance educators.

**Conclusion**

Distance education leaders must develop an instructional support system that provides effective assistance to adults who flounder without it. Administrators and teachers realize that their student population has a diversity of educational needs, and that today’s students vary greatly in their ability to perform as self-directed students. For instance, some students lack confidence in their academic abilities and need more individual attention, while other adult students are highly autonomous and have different kinds of academic needs. Yet, effective instructional planning requires an accurate profile of adult learning needs. Often, the student’s perspective on interactivity has not been adequately addressed by contemporary research studies (Burge, 1994).

The review of interactivity studies highlighted the fact that on-line higher education is an evolving entity that challenges both students and tutors to reflect on their respective roles and responsibilities. Students must develop their self-directed learning skills and adapt their communication habits to be effective in the on-line
environment. Yet, educators play a vital instructional role in promoting consistent and relevant interaction between students and with their tutors.

References


**Post-discussion Summary**


**Brent Muirhead.** Brent relates that:
Our discussion on interactivity should address the following issues:
1. Explore learning theories that encourage online interaction.
2. Investigate the role of instructional delivery systems in fostering critical thinking skills and cultivate interaction within online classes.
3. Outline vital teacher competencies that promote online interactivity, self-directed learning and collaboration with other students.
4. Discuss possible research topics for future interactivity projects.

Specific questions to start on our discussion on Monday, August 28th:
1. What is a good operational definition of the term “interactivity”?
2. What are the essential teacher competencies that are necessary for promoting genuine interaction?
3. What type of teacher education classes or workshops would be the most relevant in helping equip teachers to be effective online instructors?

**Bob Leamnson.** Bob raises questions about today’s college students interacting online. "The fact that so many of us appreciate, and learn from, a variety of listservs demonstrates that electronic communication is the answer to one particular and very real need. That undergraduates can be satisfactorily educated by this means remains to be demonstrated. Where it has been tried on this campus there is always a *demand* by students that they get together in the same room and talk to one another and their teacher--and listen. James Garfield's version of an ideal learning environment (1871) was ‘...a log hut, with only a simple bench, Mark Hopkins on one end and I on the other.’ Whatever difficulties can be solved by distance learning, I doubt it will ever take the place of teacher and students having ‘A Room of Our Own.’"

**Muhammad Betz.** Muhammad asks whether behaviorist principles are operating during online interaction. "Another angle related to learning and interaction is the principle of the immediacy of reinforcement or feedback, which is a behaviorist tenet. In Brent's introductory paper, he explains of the frustration of on-line learners when they do not receive timely feedback and are left waiting for responses from either instructors or other students. Is "interaction" or the perception of interaction related to this principle i.e., the presence or absence of feedback to questions or responses?"
Clark Quinn. Clark related how asynchronous discussion (delayed time) was successful because individuals had time to reflect and compose their responses. “We made some concrete suggestions about how to improve the likelihood of quality discussion outcomes that I think have not lost their validity nor value. For example, learners can handle what we termed “multiple threads of discourse”, but managing those requires some support in communication (e.g. meaningful subject headers) and in moderation (instructor guiding and closing lines of discussion), as well as planning (starting parallel topics earlier to get them all covered by the end of class).”

Bob Leamnson. Bob seeks to clarify the term ‘interaction’ to help avoid confusion. “While ‘interacting’ with a book might be an expression to suggest a strong ‘reaction’ to the author's thoughts, it is in fact a misuse of the word since the reader's thoughts and ideas do not in any way have an effect on the book. So it is that a student can ‘react’ to a website but can ‘interact’ only with another living person.”

Sanjaya Mishra. Sanjaya shares her insights on interaction from a workshop on Interactive Learning Technologies. "Interaction: It is the element of human dimension that makes learning complete by providing either one-to-one or one-to-many or many-to-many sharing of experience and knowledge. So interaction can be of three types: teacher-learner, learner-learner, and learner-content. There is also another type of interaction, (as propounded by many) called learner-interface interaction. However, we try to put it as interactivity function of the system.” Sanjaya wonders where there are several levels of interaction involving the social and academic dimensions of learning.

David Mallows. David observes the need to study ways to maximize student interaction “If we examine the use of asynchronous text-based messaging in educational contexts there is the possibility of interaction with our own emerging ideas and tentative understandings. With CMC these are publicly posted enabling us to a certain extent to objectively reflect on them. Others also comment, develop and reformulate the ideas according to their own perspective and we then have the opportunity to repost them or formalise them in academic papers or professional projects. The forum created by CMC enables us to interact with our own thoughts, in effect to interact with ourselves and to reflect on our own thinking. This seems to be a truly different aspect of the learning community created through the use of CMC...Brent mentions class ‘covenants’ that are created by the students and pledge their dedication to be active participants in group assignments. If students could be made aware of the positive effect of posting ideas to an electronic forum, such covenants may be more enthusiastically embraced.”

Stephen Downes. Stephen notes that discussion forum has stressed human interaction and relates that the delivery of information is not important. “But because interaction is constituted of the exchange of information, I would think that the modality of interaction (specifically, human vs. non-human) is not a factor inherent in the quality of the interaction.”

Deirdre Bonycastle. Deirdre highlights the fact that interactivity research must go beyond just studying education students. "I'm an instructional designer at a technical school and I find that there are different needs for interaction within different learning environments. For example a nursing student would desire interactions that were affectively and reflectively intense, while an accounting student might be interested in problem based interaction and a carpenter might be interested in seeing and critiquing other students' projects. Each environment requires a different set of skills in instructor and student and I would like to see more research in non-university settings.”

Dario Anthony Nardi. Dario notes that online students have a variety of needs and expectations. "Some students I've found want immediate feedback, not a lot of elaboration is needed but it should be honest and useful.”

"Some students want highly personalized feedback; the "do it with me" preference. They want a real person and some depth. The second student above, she was a good example.”

"Some people often think of learning something as learning a concept or technique. (I find I must remind these students that affect, motivation, flow, and non-verbals are critical in making effective web sites.) If they want feedback, it should be coming from someone who's the expert (like the professor, me) and not a random student.”

"Some people don't really care about the learning as much as what it will do for them, such as the grade they will get on it a means to something else.”
Kathleen Warren. Kathleen shares that educators must define quality online learning. “In a prototype study of students' interactivity in several on-line courses, I found that the structure provided by the computer-mediated communication system, coupled with guidelines for use, provided by the instructor, made a significant difference in the volume of messages exchanged. The more well defined the structure and guidelines, the higher the volume of communication among students. However, higher volume, generated in response to a requirement that students interact with each other using a structured, monitored system did not necessarily equate to quality learning. As educators, we need to define what the ‘quality learning’ is that we are aiming for and teach students how to judge both the communication of their peers and their own communication for level of quality.”

Susan Cornish. Susan defines interactivity: “I am a long time lurker … my view is that interactivity is an aspect, potential or description of a thing or system, while interaction is an actual exchange involving people. So we talk about interactivity when we are designing websites but we describe the interaction that takes place when a user tests it.”

Nancy Fire. Nancy relates experiences talking with individuals who have dropped out of online courses. “I have found in my very informal interviews that most people who never want to take an online course again have complaints like: It was boring The professor never got back to me. I think it’s very hard to determine whether in these cases it was characteristics of the learner or the quality of the online learning itself. I think both are relevant factors.”

Yannis Karaliotas. Yannis discusses various perceptions of interaction in online learning. “If, on the other hand, the distance which separates the learner from the knowing is the one that matters and its presence is recognised in both f2f and DL environments, dialectic interaction, as an element capable of reducing the distance between learners beliefs and the contexts of relevance in relation to which educational goals and methods are formulated and put into practice, should be seen as an inseparable part of the teaching/learning process (pedagogical dynamic function naturally combining with existing technological function, giving choice to learners -i.e. ignore, lurk or contribute at any given point in time).”

Norma Benesdra. Norma related a personal story about the importance of allowing students to interact with teachers in making decisions about their learning. “…I was delighted to look back on the process and realise that we had made an 'interactive decision' which succeeded in both relieving me of my anxiety and allowing the student to have an active status in her own learning process.”

Chris O'Hagan. Chris describes how students learn online by participating in an external dialogue that promotes cognitive knowledge. “In this sense, real interaction with so called 'passive' or 'linear' material is possible because the 'reading' changes subtly (or not so subtly sometimes). This is often very much a sought-for phenomenon by creative artists (for that feeling one has with good art, that one never tires of it). Indeed, perhaps some of the best resources for learning have a certain 'openness' to this kind of internal/external dialogue, which enables the assimilation of the 'new' into the 'old' - it might partly explain that feeling one has with some texts that the words make sense but are simply 'flat' in terms of meaning.”

Nancy Fire. Nancy observes, “quality interaction is when the designer of the interaction perceives that the response from the participants matches the objectives of the interaction. In other words, if the objectives of the interaction were to achieve higher order thinking about a topic then, then quality interaction would achieve this outcome.”

John Laurie. John stresses the importance of establishing a democratic online climate. “Each learner as an equal collaborator in the construction of knowledge. Many people can find this difficult. But the most difficult, and most necessary, of all tasks in preparing for OLL, is I believe the construction of a virtual space where collaborators perceive and own the space, equally and confidently. Only when that's occurred can interaction of any description take place effectively. Maybe too much thought goes into the end points of OLL transactions and not enough into the virtual space where these transactions take place.”

Bob Leamson. Bob observes that online learning does not always require human interaction. "Which brings me to Brent's point, that interaction is not in all cases a necessary condition of learning. Intelligent and highly motivated students might learn quite adequately through reflective reading and listening. For them interaction would be supererogatory. For others, the need to verify consonance between their understanding and that of the rest of the world might be palpable. They do indeed need interaction with another mind.” Bob relates that “these
Deirdre Bonycastle. Deirdre relates that teachers determine what is a quality outcome. “In some cases it is demonstrating a higher order thinking skill; in some cases it is development of emotional support/conflict resolution skills; in other cases it might be illustrating practical knowledge or combinations thereof. The instructor needs to be clear about the desired outcome and then create an on-line environment that supports the development of that outcome. Clear, written criteria based on the learning outcome is essential.” Deirdre argues that teachers help students acquire new online learning skills. “Information transmission tends to see the conversation ending once the ‘right’ answer has been given. I think students tend to give a lot of “good answer” messages because they want to offer support and agreement but are unclear about what other roles are available. Most of them grew up in a school system that supported memorized answers and discouraged co-operation, so they need to learn new skills outside of the information transmission model.”

Martin Owen. Martin argues for a change in terms for online interaction. “Perhaps one of the most useful insights it has allowed me is to replace notions of ‘interactivity’ and ‘interaction’ with ‘engagement’ and ‘participation.’ It would seem appropriate to concentrate on developing tools that allow for customisation rather than tools or rules that provide ‘the answer.’”

Marshal Anderson. Marshal shares the importance of distance educators providing adequate feedback on assignments. “There seems to be a need to set up an on-line dialogue between teacher and student in which the needs and concerns of the student come across and I feel that on-line teachers need to take account of the fact that the comments provided in marking often form the only feedback a student gets.”

Sally Mavor. Sally strives to help the discussion group reach a consensus on the term interaction. She relates that distance educators (e.g. Moore) assign interaction a variety of meanings. Sally encourages the group to look at defining specific submeanings to help clarify the issue. “In which case, could we (as a group) discuss the idea that social interaction could serve as an umbrella term for a range of different interaction types which require a collocation for their clearer definition and understanding? For example, could social interaction not usefully include: informational interaction, reflective interaction and critical interaction.”


William Klemm. William responds to Bob Leamnson’s remark that “whatever difficulties can be solved by distance learning, I doubt it will ever take the place of teacher and students having ‘A Room of Our Own.’ William offers a different perspective by noting, “… that a well-run on-line conferencing system does give teacher and students a ‘Room of Our Own’ and the virtual room does some things much better.”

Noel Eyre. Noel briefly discusses web methodologies that enable users to develop systems that help them monitor, monitor and change their learning environment. “Yes, there are such methodologies being developed that enable ‘readers, viewers’ (don’t you just hate the term ‘users’) to access and organize a sub set of a stored corpus of ‘knowledge’ according to their own set of criteria. These methodologies are based on XML (Extended Markup Language which is similar to HTML the scripting language of the web - but more flexible).”

John Laurie. John responds to Sally Mavor’s comments about interaction difficulties arising from creating threads for one-to-one communication but restricts group discussion in the IFETS online discussions. John states that “… I find the current system excellent because a), everyone is equal, and b), the widest range of views is canvassed. Threads formalise, standardise and empower sub-groups; fine in some situations, but it’s inspirational to read the scope of interpretation and it provides a great dynamic for the discussion – who knows where it will lead, or what ideas will spring up. I’ve found this current discussion on interactivity fascinating, where contributors jump in without constraint, creating just the sort of serendipitous conjunctions which interactivity really needs.”

KC Starguy. KC argues that the term “engaged” is not a good term to substitute for interactivity. KC prefers using the term experiential an relates that “being engaged has very little to do with learning as my research shows with simulation and software use. At the most engaged is a tiny part, in the beginning. But overall the
word ‘engage’ is what Jean Luc Picard says for the Enterprise to go somewhere - it should not be used to indicate what students are learning with computers and technology.”

**Muhammad Betz.** Muhammad observes that “… the growing diversity of students and the concomitant growing diversity of preferred learning styles, which in turn should affect the teacher's (on-line or not) methods of interacting with learners. To this end, I point readers to the September 2000 edition of Educational Leadership, with the theme: ‘How to Differentiate Instruction.’ Personally, I relate better to the concept of instruction and its differentiation better than the concept of interaction, which even when defined by a dictionary, remains enigmatic and/or spurious.”

**Martin Owen.** Martin supports the use of the term engagement because it is a critical educational issue. He observes, “Eric may associate ‘engage’ with Luc-Picard’s faux militarism (which relates to the engagement of gear wheels... when they start working together).”

**Chris O’Hagan.** Chris emphasized the importance of experienced teachers promoting critical thinking in their students. “Thus we need to focus on external ‘interactions’ with people, computers or books etc which generate engagement for as many students as possible. This is where teacher experience counts, whatever the intended learning mode. This is what I miss so often in debates about interaction and interactivity - this sense of or recognition of the need for it to stimulate an internal process. And then of course, a discussion of the ways we can use to identify that this invisible, internal process has taken place in some way. For me, this is the real reason why experienced teachers are important, rather than the fact that they can sometimes discuss things with students, which may be useful, even desirable (for social or motivational benefits), but is neither necessary, nor sufficient for effective learning.”

**Christopher Eliot.** Chris briefly mentions that a sociological study of Internet newsgroups would be informative. Also, that today’s newsgroups have a variety of characteristics and have a history of providing individuals with educational opportunities and places to cultivate online communities.

**Norma Benesdra.** Norma responds to Martin Owen’s questions by relying mainly on her experience in traditional education.

*How much time delay is permissible/ effective?*

“As usual, if you can explain why you took long to answer emails that should reassure students that your intentions were good and they should not feel ignored.”

*How long should my postings be?*

“I'm afraid as long as necessary.”

*Is it permissible to address all my students simultaneously drawing on work sent in by a student (for instance should my marking of a students work be “in public” for all the other students to see?)?*

“I’ve always thought and done this: a general correction containing common errors and guidelines and a personal correction with very specific issues of each student.”

*School teachers criticise and praise students openly in class... not so common in higher education.... what about on line?*

‘I think if the praise and criticism could be done individually it would be better.’

*If a student has paid for their education, what obligation is there on me to ensure their participation or is it their right to not participate?*

“I think you should force them to participate, or encourage them to.”

*If the state is paying does this obligation change (my current students have quite a generous stipend)?*

“No, it doesn't as funds are spent to carry out a duty and not to occupy a seat uselessly.”

*From personal experience, I turn off in boring classes. Should I expect the same on-line?*

“I don’t think so, unless they turn off for a short break and then come back”

**Peter Price.** Peter relates that he is strongly opposed to what he calls “page-turning” software that offers very little mental interaction. He does support more interactive software … “such as ‘The Incredible Machine’ which invites the user to place devices on screen to “interact” with each other to solve a problem, or mathematics titles that present various representations of numbers that “respond” to input from the user. This really seems to me to be more interactive than many F2F learning contexts.”

**Muhammad Betz.** Muhammad relates that usually tries to respond to every e-mail or telephone call. “Nothing is more frustrating to me than to have my emails or telephone calls ignored, but ... I know not everyone looks at this issue in the same way. Some teachers and people in general do not consider answering every email,
question, or telephone call as a paramount virtue, implying a tacit understanding of participants. These nuances in teaching style are certainly apropos to a discussion about interaction between teachers and students in both the on-line and classroom contexts, but the question remains, is there one right way or correct way or exclusively successful way of interacting to ensure learning?” Muhammad concludes by noting that it is challenging to talk about educational issues because “there are so many variables involved in the educative process.”

**David Kennedy.** David uses five quotes to discuss online teacher competencies.

“Chris O'Hagan mentioned (1 Sep) that 'It is the experience and design that lies behind it [online learning] that counts'. He is not the only one who has mentioned teacher experience in posing questions, handling discussion and small group interaction, in both face-to-face and distance contexts, as essential competencies.”

“Deirdre Bonycastle stated that the instructor needs to be clear about the desired outcome and then create an on-line environment that supports the development of that outcome. This counsel applies equally to face-to-face education and online education.”

“Marshall Anderson mentioned the need for good feedback from the teacher to the student. That is fundamental in any educational enterprise, whatever the environment.”

“Brent has cited Gilly Salmon's five-step description of the development of the on-line participant as a 'model' to follow. These five steps (basically: joining, getting to know each other, exchanging information, knowledge construction and further development) are by no means exclusive to the online domain.”

“Most tellingly, I think, has been Norma Benesdra's clear responses to the questions about on-line learning, given from the perspective of an experienced traditional teacher. The skills she applies are the skills that any competent teacher possesses. They are not unique to the online environment.” David uses the quotes as evidence to support his argument that none of the teacher competencies are exclusive to the online environment.

**Chris O'Hagan.** Chris believes that technology can have a positive impact on online teaching and learning.

“However, I actually think technology can increase efficiency and quality at the same time, and enable extra student-friendly study options - we have to work towards this and endure all the 'face-to-face is best' lobbiers (whom I often suspect have a hidden, even sometimes an overt, elitist agenda). I see it as a liberating force for many people all over the globe who are currently denied educational opportunities.”

**Bob Leamnson.** Bob stresses that our discussion has a consensus on two areas: interaction involves communication between two people and this interaction is not an essential condition for all learners. He states that “the nodal problem then, would seem to be providing effective personal interactivity in distance learning for those students who happen to need or depend on it.” Then, Bob closes by stating, “Distance Learning is going to be the answer to a limited set of problems for a limited set of people. I believe the present discussion provides evidence that Barzun was right; education is not a problem waiting for a solution, but something that is intrinsically difficult to do--but not impossible.”