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## EDITORIAL

Computer-mediated conferencing (CMC) continues to be a focal area for research in the field of distance education. Asynchronous Learning Networks (ALNs) are just one of the systems that allow students and teachers to interact using computer conferencing software. In this issue of DEOSNEWS, Donald Winiecki responds to an expressed need to improve the interaction and communication of students and instructors in such an asynchronous learning environment. Through a discussion of the communications practices inherent in face-to-face interaction, the author illuminates the difficulties found in ALN interaction. The proposed interaction practices that conclude this paper are an attempt to facilitate students' and instructors' use of ALNs, making them a more conducive medium for learning.

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## KEEPING THE THREAD: ADAPTING CONVERSATIONAL PRACTICE TO HELP DISTANCE STUDENTS AND INSTRUCTORS MANAGE DISCUSSIONS IN AN ASYNCHRONOUS LEARNING NETWORK

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## INTRODUCTION

Asynchronous Learning Networks (ALNs) are a system of distance education in which the instructor and students interact through computer conferencing software and modem or network connections. An ALN is characterized by interactions that follow a many-to-many pattern -- students and instructors sending messages to the entire class and to individual students at the same time. In an ALN, asynchronous media systems permit students and instructors to address many topics concurrently, thus promoting a multi-voiced and multi-threaded discussion (Black et al. 1983; Quinn et al. 1983). This is unlike conventional face-to-face classrooms where there is typically a one-to-many interaction (from teacher to students) with only occasional one-to-one (student to teacher) interaction and where only one topic is addressed at a time (Quinn et al. 1983). Perhaps because of these differences between conventional classrooms and ALNs, novice students and instructors in ALNs often find that discussions are difficult to follow and that misunderstandings occur frequently -- sometimes having serious negative effects on learning and on the social atmosphere of the ALN classroom (Winiecki 1997).

This difficulty can be traced to the use of communication behaviors in the ALN that are common in

face-to-face interaction, which is based on a serialized, turn-taking system in which usually only one person talks at a time (Sacks, Schegloff, and Jefferson 1974). The nature of face-to-face interaction creates practices that are not appropriate in asynchronous, many-to-many text messages that typically do not occur in a serialized, turn-taking manner and which permit each message to introduce or address several topics at once.

While the capabilities of asynchronous messages to permit more than one speaker at a time and for more than one topic to be addressed concurrently can be confusing, they also have a "time saving" effect that improves the efficiency of ALN interaction (Black et al. 1983; Quinn et al. 1983). However, in order to improve the ability of novice students to realize this efficiency and learn through the many-to-many interaction in ALNs, it is necessary for students to learn and practice new strategies for communicating that permit them to better manage the different communication patterns inherent to asynchronous, many-to-many discussions.

This paper first describes the ways in which face-to-face conversational practices work to ensure the shared understanding of all interactions. It then describes how asynchronous interactions may violate these practices and inhibit the construction of shared understanding. Finally, it proposes methods for communicating in asynchronous interactions that adapt and preserve face-to-face conversational practices and permit students in an ALN to engage in "discursive" asynchronous learning (Laurillard 1993).

## CONCEPTUAL FRAMEWORK

In classrooms, interaction between students and the instructor follows a linear, "turn-taking" procedure in which the instructor typically initiates a dialog or question and occasionally chooses a student to answer one or several questions. The instructor then evaluates the student's input, and the turn-taking cycle continues (Black et al. 1983; Quinn et al. 1983; Mehan 1980; 1979). ALNs permit the occurrence of different types of interaction than are usually found in face-to-face classrooms. Most notably, ALNs are characterized by the capability for many people to interact and many topics to be discussed concurrently. In particular, messages from students and the instructor frequently introduce new discussion topics, change the focus of existing topics, and respond to existing discussions, all in the same message (Black et al. 1983; Quinn et al. 1983).

Due to this multidimensional and interactive pattern of interaction, ALNs have been associated with constructivist learning methods in which the teacher acts as a more capable peer (Vygotsky 1978) to assist learners as they actively negotiate an understanding of curricular content (McDonald and Gibson 1998; Jonassen et al. 1995). This instructional method has also been described as "discursive" (Laurillard 1993). Discursive interactions are those in which each participant actively attempts to understand the viewpoints of others in the interaction and then to modify his or her own utterances to help others better understand that viewpoint. That is, discursive interactions naturally require the participants to adapt to others in the environment (Laurillard 1993). Thus, interaction in an ALN can facilitate a shared construction of knowledge that is valued in constructivist learning environments (Salomon 1993).

Successful learning in a discursive interaction demands that the participants be able to "follow" the interaction from beginning to end. This is because the discursive negotiation of understanding may

traverse a very circuitous path as the instructor and students search for ways to communicate, understand, and learn embedded concepts, knowledge, and skills. In the course of this process, participants may literally construct linguistic tools and artifices to help communicate particular examples or subtle variants on a theme being discussed. Examples of these tools and artifices are ad hoc phrases and indexical terminology (Garfinkel 1967), sarcasm, "inside" jokes, and "embodied acts" or hand and body motions that somehow embellish or clarify what is being said (Jarmon 1995). Entering such a discursive interaction mid-way through and without a "history of the conversation" with which to decode these ad hoc communication tools and artifices might leave the learner at a loss, unable to understand the conversation and prone to misinterpret statements.

In face-to-face interactions there are many tacit verbal practices that permit participants to keep track, update, or even repair gaps in their understanding of a conversation (Hutchby and Wooffitt 1998; Sacks, Schegloff, and Jefferson 1974). These practices are related to the serialized turn-taking of face-to-face interaction (Hutchby and Wooffitt 1998; Jarmon 1995; Sacks, Schegloff, and Jefferson 1974).

Discursive ALN instruction demands that students and teachers be similarly able to "follow" the interaction; but unlike face-to-face interaction, messages in an ALN are not serial and do not occur in an orderly, turn-taking pattern. Instead, messages on one or many other topics may be received and read in any order. Participants cannot simply "apply" known conversational habits to help them piece together the meaning of these non-sequential messages. Thus, for ALN students and instructors, one common problem is that of following the "thread" of multiple discussions that are transacted between many persons concurrently.

## FACE-TO-FACE CONVERSATION PRACTICES

In face-to-face communication, all participants are aware of 1) the contents of each utterance and action and 2) the sequence of utterances and actions (Hutchby and Wooffitt 1998; Mehan 1980; 1979; Hymes 1974). There is also a very high probability that each utterance is a response to its immediate predecessor and that the ideas codified in each utterance are reflexive to the entire sequence of ideas encapsulated by prior statements made in the discussion (Hutchby and Wooffitt 1998; Sacks, Schegloff, and Jefferson 1974). Additionally, as a result of their participation in a discussion, participants acquire knowledge of it gradually and while the interaction is taking place. Entering the discussion "part way through" may leave a person unsure of what is being discussed and what has already been discussed.

However, there are tacit practices that participants use to repair breaks in understanding or recall and other techniques that are used to narrow or alter the focus of a face-to-face interaction (Hutchby and Wooffitt 1998; Sacks, Schegloff, and Jefferson 1974). These practices and techniques can be used to assist participants in keeping the thread of an ongoing conversation and even to "catch up" if it is necessary to refer to an earlier conversation or an earlier statement from the current dialog (Hutchby and Wooffitt 1998).

## KEEPING THE THREAD IN FACE-TO-FACE CONVERSATIONS

In face-to-face interactions, members of a conversation rely on several tacit communication practices to maintain a discursive flow of messages and a mutual understanding of others in the conversation

and the topic(s) being discussed. These practices are 1) turn-taking, 2) repair, 3) overlap, and 4) formulations.

Turn-taking is basic to conversation -- one person speaks, then another speaks, etc. The information embedded in each turn in a conversation and references to earlier turns are used like bricks and mortar to construct and display a tacit and shared knowledge that is accessible to all participants. For such a construction of knowledge to occur for each learner, it is necessary for him or her to remember what has been mentioned and elaborated upon during the conversation. However, according to the psychological principle of primacy-recency, participants in a dialog are more likely to recall the beginning of the conversation and the most recent utterances, but tend to forget what was said in between (Ormrod 1990). If participants did indeed forget these "middle" messages, conversations would not be very effective in transmitting quantities of information.

Conversational repairs are used to fix this kind of problem in communication. One type of repair is used to overcome participants' difficulty in remembering middle messages. This repair is accomplished through the use of statements that refer back to things that were said earlier in the conversation or in a previous conversation. For example, the following conversational fragment shows statements from two turns of a dialog that occurred between two students before class in the author's face-to-face classroom. This conversational fragment demonstrates an indexical repair that reminds the listener of something said previously and that is necessary to understanding the current utterance. The text marked by asterisks (\*) shows the indexical repair:

A: I'm worried that I don't understand exactly what (the teacher)

wants in the project. I might do it in a way that he doesn't

like, and.

B: Okay, but \*you also said\* that we can turn in a draft copy and

get feedback so we can revise the paper before the deadline.

By repairing the conversation in this way, speaker "B" reintroduces prior (and perhaps forgotten) utterances into the discussion so that all participants remain aware of important topics or subtopics. Thus, even though the psychological principle of primacy-recency creates the possibility of not remembering everything that was said in a dialog, indexical repairs may be used to prevent it from actually causing a problem.

In conversations that include more than two people, the desire to take a turn can be signaled visibly by a movement of the face, head, hands or a shift in posture. A desire to take a turn can also be marked by conversational overlap (Hutchby and Wooffitt 1998; Sacks, Schegloff, and Jefferson 1974). Overlaps occur when a listener begins speaking before the first speaker is completely finished. Overlaps are not necessarily interruptions. Instead, they usually occur at a point in the conversation where a speaker has just completed a thought -- even when the current speaker intends to continue (Sacks, Schegloff, and Jefferson 1974). They may also indicate that the listener believes he or she understands the gist of the first speaker's message and can now begin his or her conversational turn. Additionally, overlaps have the implicit effect of indicating that a person is responding to what was

being said when the overlap started. Thus, similar to the indexical repair, an overlap can also signal to what the next statement refers. The following conversational fragment is the same as that shown above. However, in this version, overlaps that existed in the original conversation are represented. The "[" character indicates the point at which overlap occurs between turns:

A: I'm worried that I don't understand exactly what  
(the teacher) wants in the project. I might do it in way  
that he doesn't like, and  
[

B: Okay, but you also said that we can turn in a  
draft and get feedback and revise (it) before the deadline.

[ [

A: Yeah Yeah

This conversation fragment also illustrates another feature of overlaps. Because people tend to manage turns so that there is as little overlap as possible (Sacks, Schegloff, and Jefferson 1974), one speaker will quickly relinquish "the floor" to another speaker. In the previous example, speaker "A" demonstrates this by terminating his turn shortly after speaker "B" begins an overlap. As a result, overlaps have the effect of keeping conversational turns relatively short which also limits the number of new ideas per turn. When fewer new ideas are introduced per turn, the flow of conversation may be easier to follow and remember.

Finally, as described above, in discursive interaction individuals actively attempt to understand what is being said in terms of what has been said earlier and what they already know. Through this process, participants create a new understanding by combining new and old information and knowledge. To test or expose this understanding, a person may offer it as a formulation.

Formulations are conversational artifices that have the effect of "summarising, glossing, or developing the gist of an informant's earlier statements" (Heritage 1985, 100). Formulations can serve several purposes in a conversation. First, a formulation may check for validity. When this is the case, the person's formulation implies the question, "this is what I understand, am I correct?" An illustration of this kind of formulation is found in a continuation of the conversation introduced earlier. In the example below, the text marked by asterisks (\*) indicates the formulation. Additionally, the response from "B" confirms the formulation offered by "A":

A: \*So you mean that (the teacher) told you that he will accept  
draft copies of our project, and give us feedback so we can  
make changes before the deadline?\*

B: That's what he said!

Second, a formulation may function to change the direction of a conversation by repackaging what is being said and adding a new idea. Thus, formulations may be used to verify one's evolving understanding of the conversation, or they may be used to refocus or redirect the conversational topic. The following conversation fragment illustrates this second type of formulation. The text marked by asterisks (\*) indicates the formulation that serves to refocus the conversation:

A: I'm worried that I don't understand exactly what (the teacher)

wants in the project. I might do it in a way that he doesn't

like, and.

B: Okay, but you also said that we can turn in a draft copy and

get feedback so we can revise the paper before the deadline.

A: Yeah, yeah

B: \*But we'll have to start working on it soon, so that we can

give him a draft copy.\* When do you want to get started?

From the student's standpoint, formulations may also serve as an elaboration activity in which the student deconstructs what has been said and then reconstructs it into a format that fits or accommodates his or her mental models. Through subsequent statements, the student may expose his or her mental models for inspection. To the instructor, such a formulation can provide an opportunity to inspect the logic and veracity of the mental model displayed by a student.

In each case a formulation serves to 1) disclose the speaker's understanding and 2) keep other participants aligned with this understanding. Without formulations, participants may not be made aware of each other's views and understanding, and the discussion may erode into one in which the participants are engaged in separate monologues that appear to change topics suddenly and unpredictably. Instead of having one discursive interaction in which the group constructs a mutual understanding, there are many discussions in which those present are not aware of what others are talking about nor able to take advantage of the distributed knowledge in the group.

Together, the conversation practices of turn-taking, repairs, overlaps, and formulations are used to keep all participants "aligned" in a discussion and to permit all parties to construct an understanding over the course of the conversation. Asynchronous interactions differ from face-to-face interactions in many ways. Some of the most important differences come from the loss of conventional turn-taking and the loss of one-speaker-at-a-time. The following section of the paper explicates these differences and details their potentially damaging effects on asynchronous conversations.

## THE LOSS OF CONVERSATIONAL PRACTICE IN AN ALN

### Turn-Taking and Overlap

In an asynchronous classroom which permits many-to-many interactions, the conversational practice of turn-taking cannot be easily maintained because there is no way to overlap or otherwise signal the desire to take a conversational turn. Without the ability to signal the desire to take a turn, any student can become the "next" speaker in the interaction. The frequent result is that many people respond to one message, each potentially introducing one or several slightly different ideas that may fragment the discussion into many small pieces. If other students respond to each of these sub-ideas there is the likelihood that one or more of them will lose coherence with the main topic.

This is not an inherently bad situation since many ideas can be introduced and a wide (if not deep) range of issues can be addressed (Black et al. 1983; Quinn et al. 1983). However, this situation can easily decompose to the point where sub-threads spawn even smaller fragments. If this happens, it becomes increasingly difficult to manage and follow these many sub-threads. Participants can become disoriented and lose sight of the goal of the discussion.

Additionally, as noted above, one of the benefits of serialized turn-taking is that participants are able to respond to statements made in the turn immediately preceding it and, either through overlap or indexical repairs, indicate what part of the prior turn is being referenced. Without the ability to utilize either turn-taking or overlap, there is the likelihood that each additional response to a message will be more and more difficult to understand.

#### Turn-Taking and Indexical Repairs

As described previously, potentially dangerous side effects of the principle of primacy-recency are mitigated by the reintroduction of information in a face-to-face conversation. In this way listeners are reminded of important, but potentially forgotten, information necessary to interpreting statements that will follow. However, in an asynchronous, many-to-many discussion where turn-taking does not exist and where students can connect to the ALN at any time, the most recent messages read and responded to will be different for each student, and each student's "recency" recall may be different.

Additionally, even though individual messages may contain indexical repairs of the kind described above, students can read messages in any order. Further, students frequently do not even read all messages that are delivered to them in an ALN. Thus, there exists a possibility that a student may read such an indexical repair before he or she reads the original message to which it refers. In each case, the result can be disorienting to the reader.

#### Turn-Taking and Formulations

As described previously, a formulation is a "repackaging" of ideas that have been mentioned in earlier turns. As a result, formulations also rely on the idea that a listener is already familiar with all previously mentioned ideas in the present discussion. Missing one or two of the component ideas in a conversation can harm a listener's understanding, and the formulation may not be understood, leaving the learner without important information. As with other gaps in conversational practice, the result can be very disorienting.

The loss of conversational practice can lead to breakdowns in the discursive instructional potential of an ALN. If left unchecked, such breakdowns can lead to student disorientation, lack of motivation, and decreased student participation. The following section describes techniques for reconstituting

conversational practice back into asynchronous and discursive interactions, thus improving their instructional potential.

### KEEPING THE THREAD IN AN ALN

There is a clear need for ALNs presently and in the future. What can be done to help learners avoid the described breakdowns in conversational practice and their potentially damaging effects? To date, there have been several attempts to solve the problems associated with "keeping the thread" of asynchronous and discursive interactions. Many of these attempts have been implemented using specially designed software.

One set of attempted solutions proposes that the ALN should utilize a software system that displays a graphical map connecting messages in a "node and network" view (Ahern 1995). Another set of attempted solutions proposes representing discussions using structured writing methods such as the threaded topic listing. Each of these proposed solutions provides a topical map of the discussion that shows the sequence in which utterances were made and how the utterances are related to each other. However, because these attempted solutions only "map" the message title or the composer's name and date, they require the reader to reread the serial sequence of messages in the discussion in order to recover the thread. Additionally, these technologies are bound to particular software tools. As a result, to use these techniques for keeping track of an ALN discussion, students and instructors must reread related messages, and the ALN must be hosted on a software system that includes these features. In other words, the technology of interaction is constrained and even controlled by software features, not by the needs, abilities, or conversational patterns of the participants.

In contrast to these technological solutions, this paper proposes a reshaping of on-line communication conduct so that it adapts face-to-face conversational practices to the asynchronous environment. The communicative practices proposed herein do not rely on any particular set of software features and can thus be implemented on systems as common as e-mail and as sophisticated as groupware and other forms of document and information management systems.

### Using Strategic Snipping to Simulate Conversational Overlaps

Among experienced users of e-mail, listserv, and discussion groups, it is relatively common practice to include a short section of the message to which the person is responding in the message being composed. This may be called a "snip." Strategically extracting and embedding snips into a message will give readers a reminder of the exact portion of the message to which you are responding. When reading such a message it appears as a series of conversational turns.

The conversational fragment below was taken from an on-line class in a Masters of Science degree program delivered completely through an ALN. This conversational fragment demonstrates the use of strategic snips taken from prior messages. The statement marked with the initials AB is snipped from another student's message. Unmarked text is what the instructor added in response to the snip. Without the strategic snip, a reader of this message might not be able to understand the context or the purpose of this particular message in an ALN where many people are interacting and many topics are being discussed concurrently.

AB>Perhaps I missed it along the way somewhere, but I am not real

>clear on the meaning of indexical in the context of this JPA.

>Could you explain what you are thinking about here?

"Indexicality" refers to the notion that any utterance (or sign) is perceived and interpreted in terms of the environment in which it is said (or seen).

### Using Formulations and Indexical Repairs to Emulate Conversational Practice

While strategic snipping can indeed assist a reader in retaining or recovering the thread of a message, it can only provide exact references to what the message is responding. If a reader has succumbed to the primacy-recency effect (forgotten necessary components of earlier messages) or has not read enough of the preceding messages to enable him or her to grasp the embedded information, the reader may still fail to understand the message.

To overcome this potential problem, the practice of beginning messages with a formulation that provides a synopsis of "who said what, to who, and when" and how these earlier messages are important to the following comment may be adopted. The message fragment below was taken from the same ALN class as the one presented above, and it displays a formulation that performs this duty. The text marked by asterisks (\*) indicates the formulation. Sections that begin with CD and AB are comments "snipped" from earlier messages. The final paragraph in this fragment is the actual text of the message added by the instructor.

\*Carl and I are discussing the use of transformational graphics in JPAs. Carl offered that since they are somewhat affective (e.g., not objective), they don't belong in JPAs. I countered and made an example of the Trip and Cal characters on safety signs (mentioned by Tim and Bev).\*

CD>However, I will agree that their use is only called for in  
>special situations, for example when there is not a "direct"  
>way to communicate the desired meaning.

AB>I'm not sure what you mean by not being able to communicate  
>"directly" would you give an example?

The Trip and Cal characters represent the careless and careful practitioner (respectively). Because the reader can identify

with their overall behavior patterns, they evoke an indirect image [ . . . ]

It is important to note that the purpose of formulations in a message is to repackage the history of the discussion up to this point and provide a logical "lead in" to the point(s) being made in the current message. Failing to adequately package these items may leave a reader as confused as if no formulation were provided.

## CONCLUSION

Conversational practice contains many subtle and tacit techniques for allowing participants to keep track of conversations that transpire over time (Hutchby and Wooffitt 1998; Sacks, Schegloff, and Jefferson 1974). These techniques can also be used to facilitate instructional interactions that occur in a constructivist (Salomon 1993) and discursive mode (Laurillard 1993). By their very nature, asynchronous learning networks (ALNs) violate some of these conversational practices and increase the possibility that learners can "lose the thread" of ongoing discussions. Thus, there is a danger that interaction in an ALN may be difficult for students and instructors. This paper presented strategies for reconstituting conversational practice into ALNs that can improve students' ability to "keep the thread" of asynchronous discussions.

## REFERENCES

- Ahern, T. C. 1995. The effect of window state on user behavior in an on-line computer mediated conference. Paper presented at The First International Conference on Computer Support for Collaborative Learning, Bloomington, Indiana.
- Black, S., J. Levin, H. Mehan, and C. Quinn. 1983. Real and non-real time interaction: Unraveling multiple threads of discourse. *Discourse Processes* 6:59-75.
- Garfinkel, H. 1967. *Studies in ethnomethodology*. New York: Prentice-Hall.
- Heritage, J. 1985. Analyzing news interviews: Aspects of the production of talk for an overhearing audience. *Handbook of Discourse Analysis. Volume 3: Discourse and Dialogue*, ed. T. van Dijk, 95-119. London: Academic Press.
- Hutchby, I., and R. Wooffitt. 1998. *Conversation analysis*. Cambridge, UK: Polity Press.
- Hymes, D. 1974. *Foundations in sociolinguistics: An ethnographic approach*. Philadelphia, PA: University of Pennsylvania Press.
- Jarmon, L. 1995. Embodied actions and turn units in interaction. Available on-line at: [http://uts.cc.utexas.edu/~jarmon/embodied\\_actions.html](http://uts.cc.utexas.edu/~jarmon/embodied_actions.html).
- Jonassen, D., M. Davidson, M. P. Collins, J. Campbell, and B. B. Haag. 1995. Constructivism and computer-mediated communication in distance education. *The American Journal of Distance Education* 9 (2): 7-25.

- Laurillard, D. 1993. Rethinking university teaching: A framework for the effective use of educational technology. London: Routledge.
- McDonald, J., and C. C. Gibson. 1998. Interpersonal dynamics and group development in computer conferencing. *The American Journal of Distance Education* 12 (1): 7-25.
- Mehan, H. 1979. *Learning lessons*. Cambridge, MA: Harvard University Press.
- Mehan, H. 1980. The competent student. *Anthropology & Education Quarterly* 9 (3): 131-152.
- Ormrod, J. 1990. *Human learning: Theories, principles, and educational applications*. New York: Merrill.
- Quinn, C., H. Mehan, J. Levin, and S. Black. 1983. Real education in non-real time: The use of electronic message systems for education. *Instructional Science* 11:313-327.
- Sacks, H., E. Schegloff, and G. Jefferson. 1974. A simplest systematics for the organization of turn-taking in conversation. *Language* 50 (4): 696-735.
- Salomon, G. 1993. No distribution without individual's cognition: A dynamic interactional view. In *Distributed cognitions: Psychological and educational considerations*, ed. G. Salomon, 111-138. Cambridge, England: Cambridge University Press.
- Winiecki, D. J. 1997. *Becoming a student in an asynchronous, computer-mediated classroom*. Paper presented at the Third International Conference on Asynchronous Learning Networks: New York City.
- Vygotsky, L. S. 1978. *Mind in society: The development of higher psychological processes*, ed. M. Cole, V. John-Steiner, S. Scribner, and E. Souberman. Cambridge, MA: Harvard University Press.

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