Mapping Conversation Patterns in the Asynchronous Classroom

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Abstract

Distance education via asynchronous learning networks (ALNs) is an increasingly common method of educational delivery. To add to a practical and academic understanding of asynchronous, computer-mediated communication this article reports a conversation analysis study to 'map the ground' of ALNs by identifying and describing conversation practices of ALN students in terms of conversation analytic structures of talk-in-interaction. Conclusions of the research indicate that ALN participants engage in discourse that resembles face-to-face (F2F) talk in substantive ways, and in some cases invent and implement communication techniques that serve to reconstruct features associated with synchronous interaction, including turn-taking, overlap, repairs and formulations. In this sense, asynchronous conversations in education are a special form of conversation (or "talk-in-interaction," as it is known in the literature) that is distinct from both classically "written" forms of instruction, such as correspondence instruction methods and traditional face to face instruction.

Introduction

As we proceed into the 21st century, distance education via asynchronous learning networks (ALNs) is an increasingly common method of educational delivery. To add to a practical and academic understanding of asynchronous, computer-mediated communication this article reports on a data-driven, empirical study to identify and describe conversational practices of ALN students in terms of conversation analytic structures of talk-in-interaction. This research was prompted by the author's experience as an instructor in ALNs. This experience provided insight similar to that realized through the "unmotivated looking" at authentic talk-in-interaction that is characteristic of beginning phases in conversation analytic research (Psathas 1995).

Conclusions of the research indicate that ALN participants engage in discourse that resembles face-to-face (F2F) talk in significant ways, and in some cases invent and implement communication techniques that serve to reconstruct features associated with synchronous (e.g., real time) interaction, including turn-taking, overlap, repairs and formulations (Sacks, Schegloff, & Jefferson 1978; Winiecki 1999). In this sense, asynchronous conversations are a special form of conversation (or "talk-in-interaction," as it is known in the literature), that is distinctive from classically "written" forms of instruction, such as correspondence instruction methods.

In doing this, students in ALN conversations take advantage of the unique attributes and capabilities of ALNs to make up for gaps in the "*conversational* efficacy" of asynchronous, computer-mediated communication. The result is a technologically mediated and time-shifted form of talk-in-interaction that permits ALN interactants to engage in concurrent multi-topic and multi-party discussions (Black, Levin, Mehan, & Quinn 1983; Quinn, Mehan, Levin, & Black 1983) that are interactive, expressive, and easy to "follow" (Winiecki 1999).

This discussion begins with a short description of the gross features of face-to-face (F2F) and ALN interaction. The following section describes some of the hypothesized benefits of ALNs and their companion pitfalls. I will then describe principal features of the ALN software in use by classes that are included in this study. Finally, I will provide examples and analytic descriptions of ALN-talk-in-interaction to (a) demonstrate how conversation analytic methods and constructs may be used in the study of this form of interaction, and (b) merge the study of online ALN-talk with mainstream conversation analytic research.

All of the transcripts used in this article are taken from a semester-long graduate course delivered in an ALN hosted by a mid-sized university in the Intermountain United States. Names and identifying characteristics in the text of these transcripts have been altered to protect the identity of the participants in these ALN conversations. The class from which these data were taken was populated with 19 students. The average age of students at the time of this class was 43 years old.

Patterns of Classroom Talk

Face-to-Face Classrooms

Several features typify interaction in traditional, F2F classrooms. First, instructors and students are in the same place at the same time (co-presence). Second, interactions follow a serialized turn-taking pattern of interaction. Turn-taking is also accepted as a uniform and universal characteristic of conversation or "talk-in-interaction," in general (Sacks, Schegloff, and Jefferson 1978). Third, in classroom dialog there is one dominant person; usually, this person is the instructor and instructional interactions comply with an overall pattern where the instructor leads students through instructional information in a didactic format (McHoul 1978, 1990; Mehan 1980).

The "formality" of classroom talk has been correlated with the physical arrangements and distance between interactants (McHoul 1978). When the distance between interactants is large or when interactants are immobile, for example, when the instructor is lecturing from the front of the room and/or students occupy "assigned seating," the pattern of turn-taking is shown to be highly asymmetrical and "pre-allocated," with few instances of overlap or other initiated repair (McHoul 1978). In contrast, when the distance between interactants is small and/or when interactants are mobile, for example, when the instructor is working in close proximity with a group of students, the pattern of turn-taking is shown to be more symmetrical, with relatively frequent instances of overlap and other initiated repair (McHoul 1978, 1990).

"Membership" (Garfinkel & Sacks 1970) in a classroom culture characterized by this form of interaction mandates that instructors and students both know and comply with this pattern. Although this method has been criticized as didactic and instructor-centered (Jonassen, Davidson, Collins, & Haag 1995), it is familiar and perhaps "comfortable" to both instructors and students. At the very least, it is a feature of classroom interaction that students and teachers exhibit mutual orientation to, and recreate when "school" is the task to be done (McHoul 1978, 1990; Mehan 1980).

Asynchronous Learning Networks

In an ALN students and instructors interact through computer conferencing software and interactants are not physically co-present, nor must they be "online" at the same time. Additionally, physical distances between interactants are essentially imperceptible -- a student participating from across the street is no "closer to" or "distant from" the instructor or classmates than is a student participating from another town, state or country. From this, the formal distribution of turns as described by McHoul (1978) may not be appropriately applied to the description of turn-taking in an ALN.[i] Additionally, "messages"[ii] in an ALN may be sent, received and read in any order depending on strategies employed by the student reading messages. The order in which messages are sent, received and read may even differ for each participant in the ALN (Winiecki 1999).

Instead, ALNs contain interactions that follow a many-to-many pattern where participants may send messages addressing one or more topics to one or more persons (Black et al. 1983; Quinn et al. 1983). The result of this many-to-may pattern is a profusion of topics "on the table" in the ALN at any one time (Black et al. 1983). This multi-threaded and multi-voiced discussion format differs markedly from typical classroom instruction or F2F conversation where one-speaker-at-a-time, turn-taking and single-topic sequences are the norm (McHoul 1978, 1990; Mehan 1980; Sacks 1995). Attributes of asynchronous, computer-mediated communication in ALN impede the possibility of one-speaker-at-a-time turn-taking system found in conventional conversation and F2F classrooms.[iii]

This multi-topic pattern of interaction has the potential to facilitate constructivist classroom cultures(Brooks & Brooks 1993; Jonassen et al. 1995; Vygotsky 1978), and discursive and adaptive methods of instruction (Laurillard 1993).[iv] However, beginning students in ALNs frequently report difficulty in "following" and constructing meaning from online conversations.

The difficulty expressed by novice ALN students may result from an expectation that ALN interaction will be similar to F2F instruction or unfamiliarity with specialized patterns of communication practiced by experienced ALN students.

This difference between the expectations and conversational competence exhibited by novice and experienced ALN students may be an indication of their non-membership or membership status (Garfinkel & Sacks 1970) as students in an ALN "classroom culture." "Membership" in a culture has been defined in terms of the mastery of language used to communicate what is known and how it is known (Garfinkel & Sacks 1970, p. 342). From this definition, it can be hypothesized that membership in ALN cultures requires students to adopt the modified form of conversation practiced in ALNs, and described below.

Benefits and Pitfalls of ALN Conversations

As described above, in conventional classrooms interaction between students and the instructor typically follows a linear "turn-taking" procedure in which the instructor initiates a dialog or question, and chooses a student to answer one or several questions. The instructor then evaluates the student's input and the cycle continues (McHoul 1978, 1990; Mehan 1980). As suggested above, ALNs permit different types of interaction to occur than are usually found in face-to-face classrooms. Most notably, ALNs are characterized by the ability for many persons to interact and many topics to be discussed concurrently. Additionally, messages from students and the instructor frequently carry more than one purpose. For example, a single comment in an ALN may introduce new discussion topics, change the focus of existing topics, respond to one or more prior messages, request a response, etc. (Black 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 to assist learners as they actively negotiate an understanding of curricular content (Jonassen et al. 1995; McDonald & Gibson 1998). This instructional method has also been described as "discursive" and "adaptive" (Laurillard 1993).

Discursive interactions are those where each participant is able to receive and send comments to others (either synchronously or asynchronously). Adaptive interactions are those where participants use information presented by others to determine the form of subsequent turns -- effectively customizing utterances in terms of an evolving knowledge and understanding of others in the dialog. Discursive interactions naturally require the interactants to adapt to others in the environment (Laurillard 1993).

Contributing to a discursive and adaptive classroom demands that the interactants are able to follow and contribute to both the gross and subtle topic shifts and evolving meanings in an interaction from its beginning to its end. This is because the discursive and adaptive 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 skill. Entering such an interaction part way through, and without a "history of the conversation" to use when decoding adaptive comments might leave the learner lost and unable to understand the conversation or to misinterpret statements. In either case, the result is a gap in the learner's understanding – a problematic situation when learning is the goal.

In face-to-face interactions, there are many tacit verbal practices that permit interactants to keep track, update, or even to repair gaps in understanding of a conversation (Sacks et al. 1978). These practices are related to the serialized turn-taking of real-time, synchronous interaction (Sacks et al. 1978). Discursive ALN instruction demands that students and teachers are similarly able to "follow" the interaction, but unlike face-to-face interaction, messages in an ALN are not ephemeral, not serial and do not necessarily occur in an orderly, turn-taking pattern. Instead, messages on one or many other topics may be received and read in any order. Thus, for ALN students and instructors one common problem is following the "thread" of multiple discussions transacted between many persons concurrently. Similar to what can occur when entering a face-to-face conversation when it is already underway, losing the thread of asynchronous discussions can leave students and teachers confused.

Mechanics of the Aln Software

This ALN utilizes a database inside Lotus Notes to host courses. Figure 1 displays a segment of the class database in which students and the instructor interact in the ALN described in this article.[v] The software splits this database into two "window panes."[vi]

The top "pane" ("A" in figure 1) displays titles of messages sent by participants in the ALN, and the relationship between these messages. Responses to prior messages appear beneath and indented to the message they are a response to. For example, the first message titled "Well-suited?" (dated 02-Feb), is a response to the message titled "Print Media – Discussion #4" (dated 01-Feb). This top-to-bottom and indented representation is referred to as a "threaded message display." Threaded message displays are common to many ALN systems, World Wide Web-based "discussion boards" and E-mail systems. The bottom pane ("B" in figure 1) displays the contents of the message currently selected in the threaded message display. The currently selected message is surrounded by a dark border (message "C" in figure 1). Participants in the ALN can compose a new message to be sent to the class by clicking on the "Comment" button ("D" in figure 1).

Not shown here is another function that permits the participant to send all of his or her new messages to the class, and to receive new messages from other participants in the class. Thus, unlike a F2F conversation, messages are sent and received in "batches" instead of one at a time. The threaded message display automatically sorts messages into threads according to the message they are a response to, and to the date and time they were composed by the sender. In this way, the threaded message display appears to arrange messages into a representation of turns. However, because each message in a thread can contain more than one topic, etc. it is problematic to treat a series of messages in a thread as a series of conversational "turns."[vii]
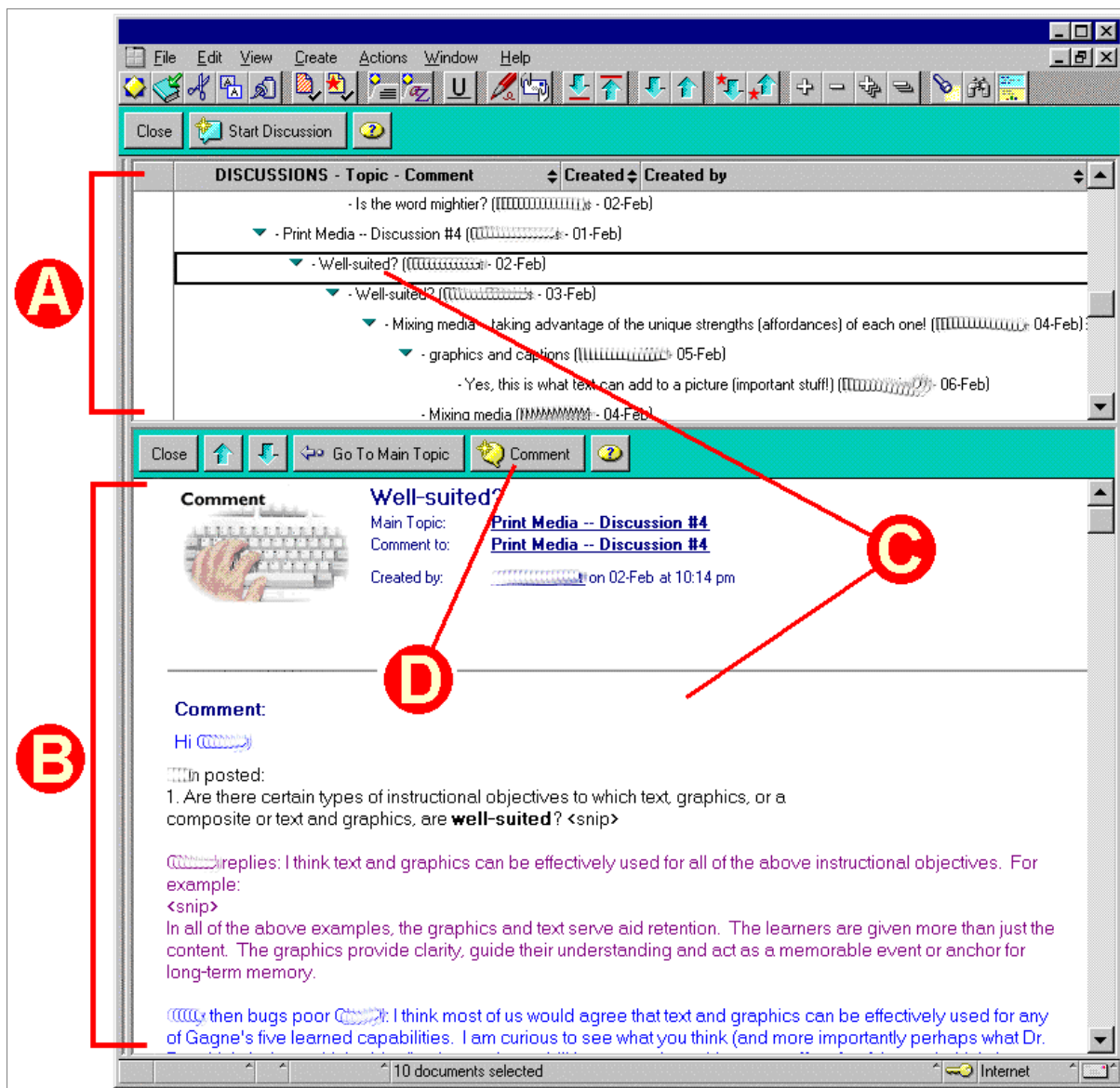

Figure 1. Views of message threads and the contents of an individual message.

Participants in the ALN can view the contents of each message by clicking on its title in the top "pane" ("A" in figure 1). The contents of each message so clicked will appear in the bottom "pane" ("B" in figure 1). This dual pane display permits participants in the ALN to easily review the contents of each message in a thread.

Analysis

Figure 2 focuses on the title of each comment in the short thread displayed in the top pane ("A" in figure 1). Each comment is coded with a letter. The text of these coded messages is explicated in the following section of this article. Remaining sections explicate features of "talk" as exhibited in this ALN in terms of its similarities to attributes of canonical conversation (Sacks et al. 1978). In particular, the remaining sections of this article illustrate the conversational constructs of turn-taking, overlap, formulation and repair as they are reconstructed by participants in the ALN.
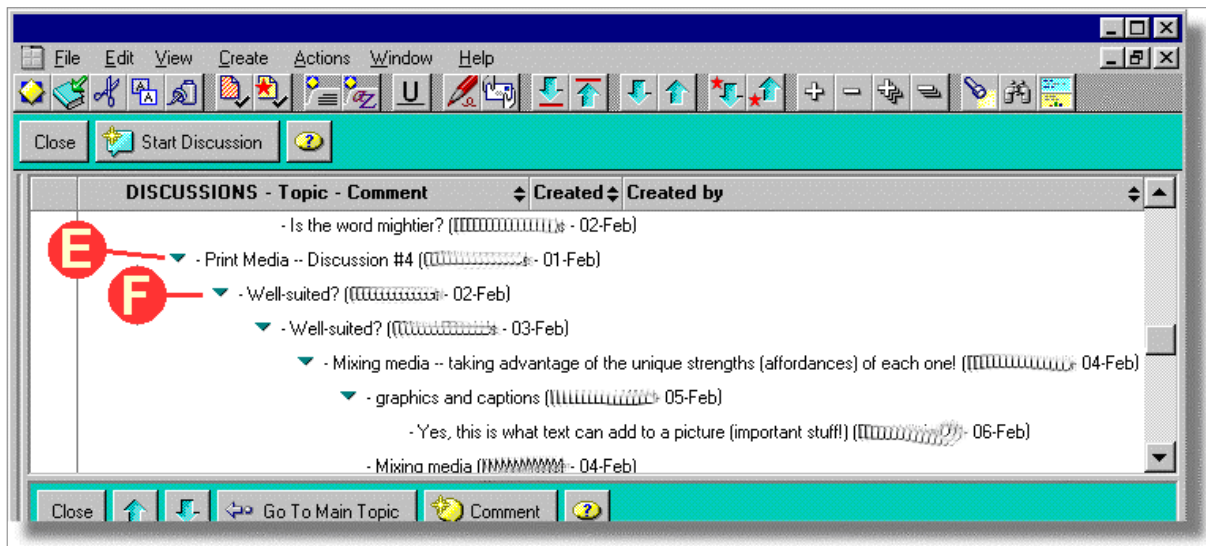
Figure 2, Comments in a thread. Lettered bullets correspond to discussion below.

Turn Taking in an ALN

There are two ways that the phenomenon of conversational turn-taking (Sacks et al. 1978) can be identified in this ALN. First, as described above each message in a thread (ref. figure 2) may be considered as a "turn" taken by a participant in the ALN. I term this first possibility "inter-message turn-taking." However, relying on "inter-message turn-taking" to assist oneself in following ALN discussions is problematic as described above.

Second, it is common for the creator of a message in this ALN to insert some part of the message being responded to, into a new message. When this occurs, features of the new message frequently exhibit turn-taking, formulations, overlap, repairs and recipient design in ways that closely resemble constructs described in conversation analytic literature.[viii] I will call this second possibility "intra-message turn-taking." This article addresses the conversational attributes that appear in "intra-message turn-taking" only.

A Problematic Case of Intra-Message Turn-Taking

Exemplar 1[ix] displays the text of message "E" (ref. figure 2, above). This message is the first response in a thread to a question from the instructor. The author of this message has copied lines #1- #14 from the instructor's question (not shown in figure 2). Lines #16 – #37 (text in the exemplar is truncated at line #25) were added by this student (Crystal).[x]

In addition to copying lines #1 - #14 from Dave's (the instructor's) message into her new message, Crystal has added the text "Dave posted:" (line #1) but she has not otherwise identified which parts of this comment were authored by the instructor and which parts were authored by her. As a result, it is not easy to distinguish the authors of these various "turns" represented by Crystal's text and the text copied from the initial message authored by the instructor. In particular, there is nothing to indicate "speaker change."[xi]

Exemplar 1: Contents of message "E" (ref. figure 2, above).		
Txt Color	Line #	Comment:
Black	1.	
|	2.	Dave posted:
|	3.	1. Are there certain types of instructional objectives to which text, graphics, or a
|	4.	composite or text and graphics, are well-suited? (I suggest that you might make use
|	5.	
|	6.	of Gagne's learning outcomes as a framework to classify instructional objectives.
|	7.	
|	8.	Gagne's learning objectives are:
|	9.	* intellectual skill
|	10.	* cognitive strategies
|	11.	* verbal information
|	12.	* motor skills
|	13.	* attitudes
|	14.	
|	15.	I think text and graphics can be effectively used for all of the above instructional
|	16.	objectives. For example:
|	17.	
|	18.	Intellectual skills - Graphics may be used to teach discriminations between types
|	19.	of the same class; such as types of birds or types of psychological disorders
|	20.	
|	21.	Cognitive strategies - When teaching problem-solving, graphics and text may be
|	22.	used to teach the rules that must be applied in the problem situation.
|	23.	<…>
|	24.	
|	25.	
|	26.	

As we will see below, this is an accountable problem for participants in the ALN – participants appear to value the ability to identify who, said what, when. As we will also see, however, this problem is normally overcome by the addition of self-identifiers and other-identifiers (a more careful and widespread application of what Crystal exhibits on line #1 in exemplar 1).

Prototypical Intra-Message Turn-Taking: Reconstructing Turn-Taking in an ALN

Exemplar 2 displays the contents of the next message in this thread that was created by Gus ("F" in figure 2). The differences between the features of Exemplar 1, and those exhibited in Exemplar 2 highlight the differences and similarities between turn-taking in conventional conversation, and how intra-message turn-taking is reconstructed in this ALN.

Txt Color	Line #	Comment:
Blue	1.	
Black	2.	Hi Crystal,
|	3.	Dave posted:
|	4.	1. Are there certain types of instructional objectives to which text, graphics, or a
	5.	composite of text and graphics, are **well-suited**? <snip>
Purple	6.	
|	7.	Crystal replies: I think text and graphics can be effectively used for all of the
|	8.	above instructional objectives. For example:
|	9.	<snip>
|	10.	In all of the above examples, the graphics and text serve aid retention. The
|	11.	learners are given more than just the content. The graphics provide clarity, guide
|	12.	their understanding and act as a memorable event or anchor for long-term
|	13.	memory.
Blue	14.	
|	15.	Gus then bugs poor Crystal: I think most of us would agree that text and graphics
|	16.	can be effectively used for any of Gagne's five learned capabilities. I am curious
|	17.	to see what you think (and more importantly perhaps what Dr. Dave thinks) about
|	18.	which of the five learned capabilities text and graphics are **well-suited** for, and
|	19.	which they are not particularly well-suited for. I believe there must be a
|	20.	difference in the suitability of text and graphics otherwise Dr. Dave wouldn't have
|	21.	asked it (or would he?).

(Above: Exemplar 2: Contents of message "F" (ref. figure 2, above).)

First, Gus has inserted a greeting to Crystal at the top of his comment (line #1). Greetings are usually the first utterance in face-to-face encounters (Sacks 1995) and are so common in telephone interaction that they have been considered to be a component of canonical openings (Hopper 1992; Schegloff 1986). Use of such a feature in this ALN talk suggests that Gus is treating this venue to be similar to other conversational encounters.

Second, Gus has also copied contents of Crystal's previous comment (lines #2 - #12) that also contained Dave's original comment. However, Gus has not copied *everything* from Crystal's previous comment – he has added "<snip>" in places where he has intentionally deleted text (lines #4, #8). Such "strategic snipping" provides evidence that Gus is building his comment from the materials provided earlier by Dave and Crystal. He is reconstructing a conversational sort of turn-taking by altering prior turns and composing his new text to formulate a new discussion out of pre-existing pieces. I refer to this as "reconstructing turn taking." This reconstruction of turn taking is a common occurrence in discussions in this ALN (this practice of snipping is also implicated in a phenomenon that similarly reconstructs the conversational artifact of overlap, as described below).

Third, Gus has inserted attributions at the start of Crystal's comment (which, she did not add herself), and before his own comment (lines #6, #14). These attributions serve to signify speaker-change. Fourth, Gus has changed the color of text blocks previously authored in this thread (blue for his own text, black for Dave, and purple for Crystal). Changing the color of text in a message is not difficult, but it does require deliberate actions on the part of the message composer. Because Gus has deliberately changed the color of text in this message in the way that he has, it is reflexive of intent to signify speaker-change, and that this message is a composite of his original text and text composed previously by others.

Finally, Gus has added his original text at the bottom of this "reconstruction of turn taking." By arranging the various "turns" in his message in a chronological sequence, he is making it possible to read the text as a series of statements similar to a transcript of a face-to-face conversation. This is a very common phenomenon in this ALN. Reconstructing turns, adding attributions and colors makes it easier for readers to follow the flow of this "conversation." These phenomena also reflect "recipient design" in that this message is built in a way that fits into the context in a manner that is designed for its intended recipients and makes its conversational quality (who said what, to who, when) easier to 'see' (Sacks et al. 1978; ten Have 1999).

Orthographic Variations for Representing Reconstructed Turns

The orthography represented in Exemplar 2 is the most common form of "reconstructing turn-taking" found in the ALN represented in this study. However, it is not the only way that participants represent and reconstruct turns. Exemplar 3 displays a message in which the author relates to the class, a conversation he had with schoolchildren about his vocation (this student is a pilot). In this extract, the author also uses colors to distinguish the various authors, however, reconstructed turns are blended together into one paragraph (because color cannot be represented here, in Exemplar 3 a bolded, and sans serif font is used to represent text formatted in red by the author, and a serif font is used to represent text formatted in blue by the author).

Exemplar 3: Alternate orthography for representing a reconstruction of turns.		
Txt Color	Line #	Comment:
Blue		<…>
|	1.	Well, yesterday I attended a career day at an elementary school. I was later told
|	2.	afterwards that the children sat the quietest while I said my say about being a pilot.
|	3.	I had kindergarteners through 6th grade at various times. I didn't need to raise my
|	4.	voice to keep their attention, perhaps it was my uniform, but I kept their attention
Blue/Red	5.	quite focused when they asked certain questions like: "Have you ever Crashed your
Red/Blue	6.	airplane?" *"No I haven't. If I can't land the airplane on a runway, nor eject, then I*
Blue/Red	7.	*die."* "What would happen if you passed out while flying?" *"Well, it takes 20*
Red	8.	*seconds for you to wake up after you pass out, and another 20 seconds for you to be*
|	9.	*able to think and control the airplane. In most cases, the airplane has already hit*
Red/Blue	10.	*the ground and your dead."* Okay, so I'm a morbid SOB, but I've learned you tell
Blue	11.	kids the whole truth and not sugarcoat it. But, just using my voice at a normal level
|	12.	and explaining to them concepts that was way above their education, in a manner
|	13.	they could understand, I gained and kept their attention. So, I think if you can
|	14.	explain something in a manner that interests them or shows them how something
|	15.	will apply to them, you can gain attention, just like you can with a loud noise, or
|	16.	some other flashy media. Oh, by the way, I'm quite adept at not directly answering
|	17.	the question (after I reread my response).
|	18.	
|	19.	
	20.	

Another orthographic method blends some features of reconstructed turn-taking as represented in Exemplar 2, with that represented in Exemplar 3. This method is displayed in Exemplar 4. This orthography splits each reconstructed turn into separate paragraphs of different colored text, but speaker identifers (names of the participants) are not added throughout.

Exemplar 4: Second alternative orthography for representing a reconstruction of turns.		
Txt Color	Line #	Comment:
Blue	1.	
|	2.	Molly. ponders (maybe going a little off-track): I wonder if the real issue is the learner's
|	3.	locus of control. A very timid person who believes that they have some possibility of
|	4.	changing their behavior may be more likely to succeed with Covey's program than even a
|	5.	very extroverted person who does not believe they can change. Of course, this is still not
|	6.	something the ID'er can do anything about, but it will have an impact on who can benefit
|	7.	from the training!
Green	8.	Hmmm, an interesting thought! I would wonder however if a very timid person who
|	9.	believes that they have some possibility of changing their behavior would not have a
|	10.	serious inferiority complex. As for the extroverted person, you have a good point. <…>
|	11.	

These alternative orthographies depend upon color to distinguish turns. Under normal circumstances, these orthographies are effective at communicating speaker change, but not who the speaker's are. Under some circumstances, as described in the section below, using colors alone to identify speaker change may be problematic.

Another variant orthography for representing the reconstruction of turns is shown in Exemplar 5. In this message, the author snips from another comment to reconstruct turn-taking in his message. Additionally, he attributes each speaker's comment by prefacing the comment with that person's initials (lines #3, #7, #11, #19), and also provides a "key" at the top of the message so that speaker change and speaker identity is reflected (line #1). This variant ensures that both speaker change and speaker identity is reflected in the message. As seen above, colors are also used to identify speaker change and speaker identity in Exemplar 5.

Txt Color	Line #	Comment:
		Exemplar 5: Third alternative orthography for representing a reconstruction of turns.
Black	1.	
|	2.	Diane = DA, Harvey's comments = HS
|	3.	
|	4.	DA: I apologize for once again joining the discussion late. I've been teaching a
|	5.	pilot this week and my evenings have been busy preparing for the next day. As a
|	6.	result, tonight is my first chance since Tuesday to login.
Blue	7.	
|	8.	HS: You mean to say you have a life outside of BSU??!! :)
|	9.	I think you made up for being late by answering more than just one question and
	10.	answering them well!.
Black	11.	
|	12.	DA: #1. Laurillard's Model: I will compare Programed System Instruction (PSI)
|	13.	with Cooperative Simulations. In terms of Laurillard's model, PSI is NOT
|	14.	discursive because it does not allow open dialog between the instructor and the
|	15.	students. The student works alone at his/her own pace. There is no one with
|	16.	whom he/she can share comments. Cooperative Simulations are very discursive.
|	17.	There is frequent interaction between the instructor and learners.
	18.	
Blue	19.	HS: Learning styles would probably really matter in this example, abstract
|	20.	randoms would love the cooperative simulations (CS) but loathe the PSI!
|		Abstract Sequentials would do the opposite. <…>

In all cases, while the orthography used by participants to represent their reconstructed turn-taking varies, there is a consistent and permeating orientation to the reconstruction of F2F-like turn-taking, speaker-change and speaker identity.

Overlap in an ALN

"Overlap" is a phenomenon of conversation that occurs when a prospective speaker begins his or her turn while the current speaker is still talking. Sacks et al. (1978) indicate that speakers routinely minimize overlap so that speaking turns occur smoothly. However, by all accounts, overlap is a very common occurrence. Hopper (1992, p. 107) found 12 instances of overlapping speech in a random sample of 100 telephone "openings."

Overlaps are not necessarily interruptions. Instead, Jefferson (1986) has shown several patterns relative to conversational overlap. First, conversational overlaps usually occur at particular junctures in utterances called "turn construction units" or TCUs (Hutchby & Wooffitt 1998, p. 48). The actual point where overlaps occur is called a transition relevant position (TRP). According to Hutchby and Wooffitt (1998, p. 48), TCUs correspond to the linguistic categories of sentences, clauses, single-word utterances (e.g., "hey," "what") or phrases. However, while this may classify the TCU, it is the speakers in a conversation themselves, who indexically define when a TRP occurs.

Hutchby and Wooffitt describe the TCU and thus, the point of transition, as a "member's problem" (p. 48) – the TCU is "essentially anything out of which a legitimate turn has *recognizably – for the participants – been built*" (p. 48, italics mine).   When a prospective next speaker overlaps at a TRP it is referred to as "transitional onset" (Jefferson 1986). Next, overlap also occurs in instances where the current speaker's turn completion or meaning may be assumed by a prospective next speaker such that a response may be begun.   Jefferson calls this "recognitional onset." Finally, overlap has also been shown to occur when the prospective next speaker finishes his or her partner's utterance in order to expedite his or her next turn.   Jefferson named this type of overlap "progressional onset." By these definitions, overlaps are reflexive of interactants' mutual orientation to the topic and the continuity of a conversation.

In the case of a F2F conversation (or where participants are "together" in a temporal sense, although perhaps separated by distance, such as may occur in a telephone conversation), speaker change through overlap or other means is considered to be a "competitive" feature of conversation (Cherny 1999, p. 157) because more than one speaker may attempt to become the next speaker at any given TRP. In a study of synchronous, computer-mediated communication, Cherny (1999, p. 159) suggests that competition is for "the floor" instead of for the "next turn." In an ALN, the author of any message will automatically acquire "the floor" whenever his or her message is read by other participants. As a result, competition of the sort described by Cherny (1999) does not exist in ALNs.

Reconstruction of Overlap in the ALN

Instead, as with a reconstruction of turn-taking, participants in an ALN may effectively "overlap" messages created by others in the process of selectively snipping text from those messages, and inserting their own comments. Exemplar 2 (repeated below) exhibits some attributes that are similar to the recognitional onset form of overlap described by Jefferson (1986). Recall that Exemplar 2 is a message created by Gus in response to a message created by Crystal (that was in turn a response to a message created by Dave).

Exemplar 2 (repeated):		
Txt Color	Line #	Comment:
Blue	1.	
Black	2.	Hi Crystal,
|	3.	Dave posted:
|	4.	1. Are there certain types of instructional objectives to which text, graphics, or a
	5.	composite of text and graphics, are **well-suited**? <snip>
Purple	6.	
|	7.	Crystal replies: I think text and graphics can be effectively used for all of the
|	8.	above instructional objectives. For example:
|	9.	<snip>
|	10.	In all of the above examples, the graphics and text serve aid retention. The
|	11.	learners are given more than just the content. The graphics provide clarity, guide
|	12.	their understanding and act as a memorable event or anchor for long-term
	13.	memory.
Blue	14.	
|	15.	Gus then bugs poor Crystal: I think most of us would agree that text and graphics
|	16.	can be effectively used for any of Gagne's five learned capabilities. I am curious
|	17.	to see what you think (and more importantly perhaps what Dr. Dave thinks) about
|	18.	which of the five learned capabilities text and graphics are **well-suited** for, and
|	19.	which they are not particularly well-suited for. I believe there must be a
|	20.	difference in the suitability of text and graphics otherwise Dr. Dave wouldn't have
|	21.	asked it (or would he?).

On line #4, Gus has "snipped" some of Dave's comment and on line #8 he has similarly "snipped" some of Crystal's original comment (Gus' own text starts on line #14). Retrospectively, these snips are like recognitional onset in the sense that Gus has (a) *recognized* the meaning of each of these prior comments (or segment of a comment) and (b) retrospectively assembled snips from prior messages into turns (effectively truncating or *overlapping* onto these turns) so they provide a lead-in to his new comment (lines #14 – #21).

Thus, Gus has not only reconstructed turn-taking, but has also reconstructed overlapping to "condition" these turns such that his new text appears to arise from the same contextual sequence of utterances. As described above, transitional overlap occurs when the next speaker begins his or her next utterance at a projected TRP. In F2F talk, transitional overlap occurs when the next speaker "projects" the completion of TCU that is currently underway. In an ALN, this sort of "projected completion" is impossible because each message has been effectively "completed" by its author. However, in the process of reconstructing turns, a message's author may insert his or her comments in-between linguistic units (e.g., sentences, clauses, single-word utterances or phrases – as described by Hutchby and Woofitt (1998, p. 48)) of these prior messages. This insertion process reconstructs transitional overlap.

Exemplar 6 shows a message created by Clint. Exemplar 7 shows a response to this message, created by Nancy. In Exemplar 7, Nancy has "snipped" lines #16 – #28 from Clint's original message (as shown in Exemplar 6), and included it in her message (the text colored black, lines #1 - #11, and #20 - #21 in Exemplar 7). Nancy has then inserted (e.g., reconstructing overlaps) her own comments in-between linguistic units of the text snipped from Clint's original message (lines #13 - #17 in Exemplar 7). Nancy has also added attributions to each segment of Clint's message (line #7 and #19), and a formulation[xii] of what Clint was commenting on, in line #1 of Exemplar 7. As shown in exemplar 7, Nancy has also used color and speaker change markers (lines #1, #13, #19, #23) to indicate turns, speaker change and the initiation of her "reconstructed" overlaps.

Exemplar 6: Original message created by Clint		
Txt Color	Line #	Comment:
Black	1.	
|	2.	Clint responds to the discussion starter:
|	3.	
|	4.	Generally the process we use in our training at my company is simulation. The
|	5.	media varies from classroom to computer-based.
|	6.	
|	7.	<… lines #6 - #18 truncated>
|	8.	
|	9.	One simulation that I developed a couple of years ago involved putting students in
|	10.	the role of consultants who have been given a request for proposal. Their task for
|	11.	the week is to work with the client executives and create the engagement
|	12.	proposal.
|	13.	
|	14.	The simulation is true to life and helps the student build skills and knowledge they
|	15.	can use on the job.
|	16.	
|	17.	The simulation is realistic. The course I worked on was for financial services
|	18.	consultants so the case was a credit card company in Elbonia. The setting
|	19.	included Elbonian tapestry, pottery and other artifacts of the culture.
|	20.	
|	21.	The fictitious client executives were actual retired executives from the financial
|	22.	services industry. This helps in giving realistic feedback in their interactions.
|	23.	Furniture is also brought in to simulate the client's place of business. It is realistic
|	24.	down to the point that there are fictitious secretaries who schedule appointments
|	25.	for the executives.
|	26.	
|	27.	It is also a safe learning environment. If the students mess up, they'll receive
|	28.	feedback, but there is no risk to real clients or my company.
|	29.	
|	30.	<…message continues to line 46.>

Txt Color	Line #	Comment:
Black	1.	
|	2.	Clint is explaining how his company uses engagement-based simulation:
|	3.	The simulation is realistic. The course I worked on was for financial services consultants
|	4.	so the case was a credit card company in Elbonia. The setting included Elbonian tapestry,
|	5.	pottery and other artifacts of the culture.
|	6.	
|	7.	
|	8.	The fictitious client executives were actual retired executives from the financial services
|	9.	industry. This helps in giving realistic feedback in their interactions. Furniture is also
|	10.	brought in to simulate the client's place of business. It is realistic down to the point that
|	11.	there are fictitious secretaries who schedule appointments for the executives.
|	12.	
Blue	13.	Nancy says: Some of the most effective training for management, leadership, and
|	14.	customer service that I've participated in or observed has been this type of realistic
|	15.	simulation. This can provide both intrinsic feedback during the simulation, and very
|	16.	productive one-on-one or group feedback afterwards.
|	17.	
|	18.	Clint continues:
Black	19.	It is also a safe learning environment. If the students mess up, they'll receive feedback,
|	20.	but there is no risk to real clients or the company.
|	21.	
|	22.	Nancy comments: Simulations feel "safe" to the learner when they have mastered the
Blue	23.	prerequisite skills required to perform acceptably, and have become
|	24.	<…same pattern continued to line 38>
|	25.	

Exemplar 7: Nancy's response to Clint's message, exhibiting a reconstruction of transitional overlap.

In exemplar 7, reconstructed overlaps are a part of reconstructed turn-taking that "condition" reconstructed turns so that the flow of a message follows the intent of that message's author. While it would certainly be possible given the retrospective nature of these features, reconstructed overlaps are not used to alter another person's meaning or to otherwise "take a message out of context." Instead, reconstructed overlaps are a mechanism of members' ALN talk that allows a message's author to specify relevant components of comments made by classmates in the ALN in the service of constructing a shared representation of the subject matter currently being addressed.

Conversational Repair in the ALN

In talk-in-interaction, repair is classified as an instance where items of discourse (words, phrases, entire utterances) are altered by subsequent turns at talk (McHoul 1990). Repairs serve to correct or reorient prior statements. Four forms of repair have been classified by Schegloff, Jefferson, and Sacks (1977). These four forms are shown in table 1.

Form	Turn	Work of Each Turn	Participant Doing Work
1	Single turn	Initiation & Repair	Self
2	Single turn	Problem source	Self
	Turn transition	Initiation & Repair	Self
3	First turn	Problem source	Self
	Next turn	(other conversation)	Other(s)
	Third turn	Initiation & Repair	Self
4a	First turn	Problem source	Self
	Next turn	Initiation & Repair	Other
4b	First turn	Problem source	Self
	Next turn	Initiation	Other
	Third turn	Repair	Self

Table 1: Forms of Conversational Repair

Schegloff et al. (1977) indicate that types 1 and 2 (ref. table 1) are the most common form of repair in adult conversations. McHoul (1990) reports that in the classrooms he studied, form 4b (other-initiated, self-repair) was the most frequent form of repair. He concludes that this is the case because the teacher is often the "other" who initiates the need for a repair, and the student then self-corrects his or her misstatement made in the first turn.

In the ALN included in this research, repairs of form 1, 2 and 3 were not found. This may be because the author of a message can "self-repair" any errors in that message before it is sent (thus hiding them from others in the ALN). Once it is sent, any repairs must be made in a subsequent message or reconstruction of turns. Repairs of both form 4a and 4b were found, however. Examples of these repair forms are explicated below.

Other-initiated, Other-repair in the ALN

Exemplar 8 illustrates an instance of form 4a (other-initiated, other-repair). In this message, Stella has snipped from messages by Dave and Charlie, added speaker-change markers (lines #1, #14, #24) before adding her comments on lines #24 - #30. In her comments, Stella is using reconstructed turn-taking to present prior comments by two other participants before initiating and repairing comments made by Charlie.

Txt Color	Line #	Comment:
		Exemplar 8: Example of Repair form #4a, other-initiated, other-repair.
Blue	1.	
Black	2.	Dave nudged:
|	3.	Remember some of the advice that was given on the use of video materials? It
|	4.	was stated that the instructor/guide/more-capable-peer/etc. should (a) introduce
|	5.	the video before it is shown, (b) play the video, (c) interrupt the video where there
|	6.	is a poignant event {"teachable moment"}, and then (c) facilitate a discussion
|	7.	after playing the video. At a minimum, the facilitated discussion should play the
|	8.	part of Gagne's event #9 -- enhance retention and transfer. In other words, the
|	9.	discussion should provide a conceptual framework to attach what was seen and
|	10.	heard in the video to the goals of the instruction.
|	11.	Could a similar thing be done with role plays? I agree that the instructor would
|	12.	have to be much more resourceful to work things together ad hoc.
|	13.	
Blue	14.	Charlie responds,
Black	15.	Using Gagne's objectivist approach, I think it would be *necessary* to establish
|	16.	expectancies (event 2) so that the learner would be oriented to the import of the
|	17.	role-play. The role-play itself would inform events 4, 5, and 6. An after action
|	18.	review would inform events 7, 8, and 9. (I think.)
|	19.	But, if I'm approaching this as a constructivist, doesn't the mere act of "framing"
|	20.	expectancies taint the the learner with my "construction" of the right outcome?
|	21.	So, shouldn't the role playing leave the learner free to construct or derive meaning
|	22.	from the experience without prejudice?
|	23.	
Blue	24.	Stella counters:
Black	25.	Dave's explanation of framing role plays shows that they are suited to more than
|	26.	just constructivist approaches. But in my understanding, a constructivist approach
|	27.	doesn't mean you don't have objectives or goals of learning. The instructor
|	28.	introduces the role play and desired outcomes. The learner interacts in the role
|	29.	play, constructing his own interpretation or meaning in relation to the outcome.
|	30.	<...>

In Exemplar 8, three reconstructed turns are included. In her comment (lines #24 - #30) Stella relies on a prior message from Dave (lines #2 - #12) for support in framing her repair. However, the repair itself is not initiated by Dave and so this exemplar is analogous to the two-turn repair trajectory modeled by Schegloff et al. (1977) repair form #4b in Table 1.

Other-initiated, Self-repair in the ALN

Exemplar 9 shows an instance of repair form 4b in Table 1 (other-initiated, self-repair). In this message, Lloyd is responding to a prior message authored by Dave, in which Dave asked for clarification on a prior message (initiation of repair). In Lloyd's comment (lines #9 - #15) he confirms the problem and offers a self-repair.

Exemplar 9: Example of Repair form #4b, other-initiated, self-repair.		
Txt Color	Line #	Comment:
Black	1.	
|	2.	Dave ponders:
|	3.	
|	4.	Would a process technology -- and which process of those -- would be appropriate
|	5.	for technical skills training, and which would be appropriate for soft skills
|	6.	training?
|	7.	
|	8.	Are some process technologies better for teaching different sorts of SKAs?
|	9.	
|	10.	Lloyd suggests:
|	11.	
|	12.	I could see using many of the differnt process technologies mentioned in Heinich,
|	13.	et al, for various soft skills. As a look at my previous response more, I think I was
|	14.	really discussing media, not process. To me, I'd feel more comfortable using a
|	15.	more "hands off" (by the instructor) media for technical skills and a more "hands on" (by the instructor) for soft skills.

McHoul (1990) shows that conversational repairs (of form #4a and #4b in Table 1) that happen in the classroom are part of a technique that permits the teacher to guide students through curricular content and to provide a public record of the correctness and incorrectness of student responses. He also indicates that other-initiated self-repairs are more frequently performed by instructors than they are by students (p. 376).

Unlike the characteristics of repair classified by Schegloff et al. (1977) and McHoul (1990), in the ALN, other-initiated repairs are used by students to repair other student's remarks more frequently than they are used by the instructor. This may be due simply to the very different ratio of instructor to student comments in a conventional classroom as compared to the ALN.[xiii] Repairs serve to permit students to not only be evaluated by the instructor, but also to permit students to "conversationally" act on their evolving knowledge of the subject matter, and to test their understanding in discussions with their peers and the instructor.

Formulations in the ALN

Heritage (1985) defines a formulation as "summarising, glossing or developing the gist of an informant's earlier statements." Heritage goes on to elaborate that formulations are relatively rare in conversation but more common in institutionalized talk. The ALN is simply a different form of the institution of school, and formulations are in fact a very common occurrence in ALN talk.

Formulations in the ALN appear to serve two principal purposes. First, as suggested by Heritage (1985) they are used to summarize, gloss and encapsulate earlier statements. In particular, however, formulations of this type are used when a potential series of reconstructed turns grows long. In this sense, formulations are frequently substituted for long sequences of reconstructed turns to "collapse" the gist of those turns into a single utterance.

Using a Formulation to Collapse a Long Series of Prior Messages in a Thread

Exemplar 10 contains a message that is the sixth in a thread. The immediately prior message contained 31 lines. Instead of snipping and reconstructing turn-taking as is exhibited in the prior messages in this thread, the author (Ed) presents a formulation (lines #1 - #3) of the previous messages in this thread.

Exemplar 10: Use of Formulation to "collapse" a long sequence of reconstructed turns.		
Txt Color	Line #	Comment:
Black	1.	
		2.	Doug and Izzy are discussing the importance of "self-worth" as a learner attribute.
		3.	Izzy posited the importance of "self-worth" as an attribute that might affect a
Blue	4.	learner's ability to learn from audiotape instruction.
		5.	Doug replies: I would like a reference for a test of "self-worth". I checked
		6.	my reference on Psychological Test and measurements and couldn't fine any
Black	7.	reference to a "self-worth test. \<snip\>
		8.	Ed interrupts:
		9.	As in all disciplines, psychology has a special lexicon. Perhaps it would be
		10.	fruitful to check for references to "self-efficacy" instruments instead of "self-worth" instruments.

Using a Formulation to Clarify the Purpose of a Message

Formulations are also accomplished in the ALN in a way that marks the intended or understood purpose of a particular comment. In exemplar 11, Stella has reconstructed a turn using text from an earlier comment by Vera (lines #2 - #10). At the start of the copied text (line #2) Stella has added a speaker-change marker, and added a formulation to clarify Vera's comment as a "summarizing" remark. Similarly, on line #11, she adds a self-identifier and speaker-change marker and prospectively formulates her comment as a "speculation."

Exemplar 11: Use of Formulation to clarify the illocutionary force of a comment.		
Txt Color	Line #	Comment:
Black	1.	
Blue	2.	\<…\>
		3.	Vera summarized: The multimedia activity was too hot for the participant to
		4.	feel comfortable in navigating while I was watching. I didn't provide enough
		5.	feedback to keep him from stumbling through the activity which increased his
		6.	frustration. Although the subject matter interested him, he wasn't willing to
		7.	continue to stick with the subject matter to learn the navigational tools. This
		8.	confirms McLuhan's "cold media are better for novice," meshes well with
‖	9.	Bruners suggestion for considering the learner's interaction with the media,
Red	10.	and Laurillard's use of media in the learning process.
		11.	Stella speculates:
		12.	We also have to consider that our subjects "voluntarily" searched for a topic to
		13.	explore without any specific learning objectives. It seems like a lot of our learners
		14.	spent significant time just finding a topic to explore. If a learner went into Encarta
		15.	or other hypermedia with specific goals or focus, this might reduce the tendency
		16.	to be distracted by the "noise."

Using a Formulation to Disambiguate a Comment

At times, formulations that clarify the purpose of a message can include contents that serve to disambiguate a comment. For example, on line #5 of exemplar 12, Crystal offers a reaction to Gus' prior "turn" ("Why's everybody always pickin' on me?!") and then formulates that utterance as play ("No, seriously…"), and not as reaction against Gus' "bugging" committed on line #1.

Exemplar 12: Use of Formulation to Disambiguate an Utterance, or otherwise Symbolize the Author's Attitude. Note that "<…>" represent truncations made by the author, and not embedded in the actual message shown here.

Txt Color	Line #	Comment:
Blue	1.	<…>
|	2.	Gus then bugs poor Crystal: I think most of us would agree that text and graphics
|	3.	can be effectively used for any of Gagne's five learned capabilities. I am curious
	4.	<…>
Black	5.	Crystal replies: "Why's everybody always pickin' on me?!" No, seriously, thanks
|	6.	for the question. I pretty much agree with your original response to question 4.
|	7.	IMHO, I think text and graphics are very well suited for verbal information
|	8.	(declarative knowledge) and intellectual skills (discriminations, procedural
|	9.	knowledge). I think text and graphics can be suitably effective (How'd you like
|	10.	<…>

This use of formulations to clarify potentially ambiguous comments was identified as an important feature that can avoid a potential pitfall of text-only ALN talk. The following quote is one item from an ad hoc list of etiquette for ALNs, that was contributed by a student near the end of this class. In this quote, the student exhibits the potential value of such clarifying formulations and the potential outcomes if the advice is not heeded.

> 06-Apr (12:09PM)
> Use of "body language" <…> and emoticons is very important. I remember a discussion in an earlier class where someone had "said" something that was taken the wrong way (angrily) by another student. It was just a misunderstanding due to use of humor or sarcasm (can't remember which) which was not indicated by the author.

Using a Formulation to Signal Topic-Shift

In their study of ALN talk, Black et al. (1983) identified that ALN messages frequently include multiple topics. They termed these multiple topics "connectives" and indicated that they permit participants to economically address multiple topics in the time-shifted ALN. However, despite the economy realized through the use of connectives, Black et al. (1983) suggest that participants have difficulty pursuing these multiple threads.

In the ALN, students were seen to utilize formulations in a way that provides a signal of topic shift. In exemplar 13, Nancy prefaces her addition (lines #11 - #17) as "pondering" and announces that her message may be diverging from the current thread "(maybe going a little off track)" (line #11). In the ALN, this message marked the start of a new thread that pursued Nancy's "pondering." Thus, it appears that marking topic-shift with a formulation may provide a signpost to others, that eases their pursuit of multiple threads, or "connectives."

Txt Color	Line #	Comment:
Black	1.	
|	2.	Ed is responding to Charlie's question about "inferiority complex issues"
|	3.	impeding the learning process:
Red	4.	<snip>
|	5.	To benefit from the training, students must be motivated to learn. A person who
|	6.	possesses serious inferiority complex issues will have their fears interfering with
|	7.	the instructional goal. Their fears will hold them back from accomplishing the
|	8.	objective. I didn't mean to imply that they should be excluded from the
	9.	<…>
	10.	
Blue	11.	Nancy ponders (maybe going a little off-track): I wonder if the real issue is the
|	12.	learner's locus of control. A very timid person who believes that they have some
|	13.	possibility of changing their behavior may be more likely to succeed with Covey's
|	14.	program than even a very extroverted person who does not believe they can
|	15.	change. Of course, this is still not something the ID'er can do anything about, but
|	16.	it will have an impact on who can benefit from the training!
|	17.	

Exemplar 13: Use of Formulation to clarify the illocutionary force of a comment.

As shown here, similar to what is shown above, participants appear to orient to the use of formulations as a technique for improving the quality and communicative efficacy of discussions. In particular, formulations are used to encapsulate long threads and reconstructed turns, clarify potentially ambiguous utterances, and orient others to the topic-shift and multiple threads of discourse (e.g., connectives), in the asynchronous classroom.

Making "Reconstructing Conversation" an Accountable Practice in the ALN

As shown here, participants in the ALN consistently reconstruct turns, use color and add attributions to represent speaker change and speaker identity. They have also used turn-reconstruction in the service of representing conversational overlap, conversational repair and formulations. These features of ALN-talk are remarkable because there is no requirement for them to implement these things, nor are there any special features built into the software used in this ALN that automate these techniques – it would be much easier to author a message without any "snips," color changes, text manipulations or attributions. It appears then, that the reconstruction of turn-taking, overlap, repair and formulations as explicated above represents a deliberate effort to reconstitute the features of turn-taking found in conventional conversation.

Conversation analytic literature attaches unique importance to the sequential arrangement of turns in conversation (Sacks et al. 1978). In particular, each turn in a conversation has been shown to be "designed" (Sacks et al. 1978) by its creators in terms of the persons involved in the conversation, the overall meaning of the evolving conversation, and its preceding turns. Inability to determine who has said what in a particular message (or thread) may render any reconstructed turn-taking structure (and the entire message or thread) incomprehensible. Members of the ALN are made accountable for the reconstruction of conventional conversation as shown in the following message authored by Mike.

28Jan (8:35PM)
"I know that it's a bit of a pain, but is there a way that we can try to continue the labeling of who says what by using our "Bill says:" and "_maureen replies:" intros? I'm finding it hard to follow threads of discussion and to reply (I can't see some colors)."

Later in the semester, another student in the class reinforced the use of reconstructed turns, and in so doing authenticates Sacks et al. (1978) assertion that messages are "recipient designed" for a particular set of "listeners," a particular context and a particular place:

10-Apr (4:29PM)

"…I focus mainly on the last two - three comments in order to formulate one of my own or reflect on previous ones. I will only cut and paste the applicable info to my response. I will usually clearly state who said what previous to my comment so that it is clear to others what the thread of the conversation is. I tend to write in the first person and design my comments as if they are being used to 'speak' to the class."

Thus, it appears that the added steps to reconstruct turn taking, signify speaker change and speaker identity add substantially to the "recipient design" of individual messages. Such careful recipient design adds to the ease of understanding a particular message or thread, and serves to make ALN discourse more "conversational" despite its asynchronous nature and the surface characteristics of written communication. Failing to utilize the various strategies explicated here is an accountable doing and may also identify the offending participant as a novice or "non" member of the ALN culture. As has been argued above, these methods of reconstructing turn-taking have critical implications for the conversational efficacy of dialog conducted in the ALN.

Conclusions

Together, the practices of (a) reconstructing turn-taking, (b) reconstructing conversational overlaps, (c) using repair as a mechanism for testing and debating evolving knowledge of the curricular materials, and (d) using formulations to clarify meaning and topic-shift in the ALN reflect the assertion that conversation is both context-shaped and context-renewing (Drew & Heritage 1992). In addition, as quotes from members of this ALN indicate, these practices serve as a resource that improves the coherence and understandability of each other's messages, and in turn, facilitate the social and interactional-accomplishment of learning in the ALN. These quotes also reinforce that the use of these reconstructed features of conversation are desirable, accountable and even expected of members in the ALN.

Finally, these various features reinforce the idea that interactants in a text-intensive ALN do work to incorporate conversational forms of communication that transcend the fact that dialog in the ALN is written. The undeniably "conversational" use of text in the ALN makes it clear that this use of language is appropriately studied and modeled using theories and principles of conversation analysis.

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[i] However, as shown below, the *perception* of distance appears to contribute to patterns of interaction in an ALN.

[ii] In this discussion, I use "message" to mean the complete contents of a single contribution sent to the class by a participant in an ALN. As will be described later, the contents of such a "message" may be authored by that participant, or may be composed of a mix of original material and material copied from other messages.

[iii] This serialized turn-taking system is considered to be the canonical form of conversation (Sacks et al. 1978).

[iv] In this ALN, students are not led through information in a didactic pattern. Instead, more responsibility is placed upon students to construct, either independently or through social interaction, meaning from resources that include traditional texts, and highly discursive many to many dialog.

[v] Names of all participants have been obscured in figures. All names used in the transcripts are pseudonyms.

[vi] Features and functions in this database are similar to those found on most software that has been designed to support ALNs.

[vii] Black et al. (1983) describe how messages in a series (like threads) are dissimilar from turn-taking as it is found in conventional conversation.

[viii] The de facto standard for conversational turn-taking is described in Sacks et al. (1978).

[ix] Exemplars have line numbers added for ease of reference in accompanying text. In addition, the far left column in each exemplar indicates the color of text as it appeared. As is shown below, color is used instrumentally by participants in the ALN and thus must be considered as an attribute of ALN talk.

[x] The symbol "<...>" is used to signify that the transcript has been truncated for brevity. Spelling, grammar and punctuation errors found in the original text are maintained.

[xi] In face-to-face or telephone talk, speaker change is identified both visually and/or aurally. Participants co-present in the interaction can make use of either of these mechanisms for identifying the current speaker. Features of synchronous computer-mediated communication (for example, America Online's "Instant Messenger," Microsoft's "NetMeeting," etc.) contain functions that preface each participant's message with his or her name or self-selected moniker.

[xii] Formulations in the ALN are described in more detail below.

[xiii] The ratio of teacher to student talk in conventional classrooms is said to be 9:1 (Heinich, Molenda, Russell, & Smaldino 1999). The ratio of teacher to student talk in this ALN is close to 1:4.