Becoming a student in an asynchronous, computer-mediated classroom

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Abstract
Graduate instruction is traditionally delivered in face-to-face classrooms in university settings. However, with the decentralizing of corporations and workforces in the late 20th century, potential students have been distributed far from traditional academic centers. Distance education is a viable option for these persons.

Asynchronous learning networks (ALNs) are an increasingly available option for distance education. However, ALN environments impose unusual constraints on the way individuals perceive themselves, their fellow students and their teacher, and how they interact as students and teachers. The transition from face-to-face classroom to ALN classroom is, as a result, tricky for students and teachers alike.

This paper describes characteristics of competent students in a face to face classroom and then contrasts them with problems typically experienced by students in an ALN. Solutions for these problems are described and used to create a model of instruction for helping students become competent and collaborative learners in an ALN.

Introduction
Graduate instruction is traditionally delivered in face-to-face classrooms in university settings. However, with the decentralizing of corporations and workforces in the late 20th century, potential students have been distributed far from traditional academic centers. Faced with this situation, persons wishing to pursue continuing professional education have been forced to choose between employment, or leaving a job to attend school full-time.

Distance education has emerged as a viable option for these students. Instead of *moving to* the education, a student can have educational opportunities *sent to* himself or herself. Students can enroll in courses, participate in them, and graduate with degrees without every actually "being with" their instructors or classmates.

Many delivery options exist for distance education. For example, correspondence courses, compressed video or satellite television, and computer based asynchronous learning networks (ALNs) are common distance education delivery-systems. ALNs have the advantage of permitting students to participate in educational experiences in a "time shifted" environment. In other words, because students and teacher are not required to meet at the same time, ALNs permit students from different time zones, and with different work schedules to interact in the same "classroom."

The skill of being a competent classroom student is a status and skill learned implicitly over many years of experience in traditional face to face classrooms. However, ALNs impose

unusual constraints on the way individuals perceive themselves, their fellow students and their teacher, and how they interact as students and teachers. The transition from face-to-face classroom instruction to ALN instruction is, as a result, tricky for students and teachers (Harasim, Hiltz, Teles & Turoff, 1995).

A theoretical model of the competent classroom student
Hymes (1974) indicates that there are several skill-sets required for competent interaction. First is a mastery of the behavioral elements of interaction. Second is a mastery of the linguistic components of interaction, and third is skill at mixing the first two – knowing how to behave in interaction, and saying appropriate things at the right times. Hymes (ibid.) indicates that this third skill is what makes a person a functional and contributing *member* of a culture or community. However, before this skill may be practiced, the first and second elements must be mastered. Each of the three interaction skills is necessary for competent classroom interaction, but none is sufficient for competent classroom interaction.

Hymes' (ibid.) constructs are intended to describe competent members of interactive social communities. However, his three-part model is readily applicable to classroom settings – whether they are instantiated in traditional face-to-face classrooms, or asynchronous classrooms. This is especially true in highly interactive, or cooperative classrooms. Highly interactive classrooms are sometimes very desirable, for example in a design-based engineering classroom where ideas and technologies are discovered, tested and refined. In fact, Salomon (1993) and Schrage (1990) explicate that interactive or cooperative communities provide a richer environment in which to share and develop ideas and engage in learning, than do more didactic instructional environments. When members of a classroom possess and practice all three of Hymes constructs, cooperative learning communities can exist and thrive.

The task of becoming an asynchronous student
<u>Problems</u>. Distance education in general, and ALNs in particular permit access to educational opportunities to persons who might not otherwise have it. However, there are several roadblocks to competent classroom membership in the ALN classroom. The first can occur immediately upon entry to the distance education environment and is associated with using the technological tools of the distance classroom.

In the asynchronous classroom, students normally use some form of E-mail to send comments to classmates and the teacher, and to receive messages from them. If a student is unfamiliar with the particular communications tool being used in class, he or she lacks the first of Hymes' constructs. There is a paradox associated with this problem. In order to be a contributing member of the classroom, a student must have mastered the tools being used to interact, and the ways they may be used. However, the novice ALN student must know how to use the communication tools before interaction becomes possible.

The second roadblock is related to the first. It is not enough to simply "know how" to use the required communication technologies. The student must also know when to use these tools in a way that will facilitate the learning process. For example, a student may know how to send and receive classroom messages (fulfilling part of Hymes' first competency construct), but if he or she does not know and practice the skill of filing messages in a way that facilitates retrieval (for

example, by a keyword, or in a particular folder arrangement) – and then *use* their system to organize efficient study of the material, learning may not be accomplished.

The third roadblock to competent classroom membership effects the second of Hymes' interactive skills, mastery of the linguistic components of interaction. While most students attending a distance class will be capable speakers of the language used in class (for example, spoken and written English), speaking and writing in the distance classroom is subtly, but importantly, different then what is familiar in a face to face classroom. For example, in a traditional face to face classroom, interactants make use of many non-language signals to create messages and to interpret and understand what is going on. For example, voice inflections, facial expressions, hand motions, linguistic devices (for example, sarcasm), etc., are used by speakers to embellish their messages. Once these paralinguistic devices are known and understood, they also assist listeners in understanding the message as intended. However, because the primary communication channel in the asynchronous classroom is written text, none of these para-linguistic devices may be used in their conventional form. However, because they are so common in face to face classroom interaction, it is very common for novice asynchronous students to use sarcasm, a cliché, or "insider knowledge," to embellish a written comment. However, without the benefit of familiar paralinguistic signals, these comments are often misunderstood – and may result in unintentional insult or embarrassment. Together, these three roadblocks may create an incorrigible problem for students in an asynchronous classroom. As a result, interactive learning communities may never develop.

Solutions. It has been observed, however, that when the instructor and students foster an open and interdependent exchange of instructional *and* social dialog in the asynchronous distance education classroom, students can simultaneously overcome both of these roadblocks (Winiecki, 1997). This process is similar to that described by Wittgenstein's "language games" (1958). Sociolinguists have argued that language games facilitate the development of pidgin languages and eventually permit individuals with vastly different backgrounds and languages to develop a mutually acceptable language. "Language games" are characterized by episodes of *showing* what is being spoken of, *speaking of it*, and negotiating understanding of a task *that involves it*, at the same time. The goal is to communicate not only the concepts being discussed, but also to negotiate a mutually understandable and acceptable way of communicating about it, at the same time.

For example, the following conversation occurred between two, first-semester graduate students in the ALN course, "Introduction to Instructional & Performance Technology," offered the Instructional & Performance Technology department of Boise State University's College of Engineering.

[start of transcript segment]

Rebecca (9/28/97, 9:20PM): I can't find last week's assignment! I remember reading it, but now it's disappeared!!

Instructor (9/29/97, 8:15AM): Hi Becky. You should be able to find it in your database of messages. Go into your database, and search for all messages sent on September 22nd. It will be easy to pick out of that list.

Rebecca (9/30/97, 6:23PM): What database! I don't have any database – all I see is a bunch of messages from everyone to everyone!! Nobody seems to be talking about the same thing!!! This is very confusing!!!!

George (9/30/97, 7:44PM): Hey Rebecca, did you follow the setup instructions in the computer conferencing guide? It's really easy and it tells you all about creating and using your messages database.

Rebecca (9/30/97, 8:03PM): It might be easy for you!!!!! I tried to follow those instructions but I can't understand them – I must not be computer literate enough to understand it all. Will *you* send me the assignment?!

Instructor (10/01/97, 8:27AM): Hi Becky, I'll send you the assignment again, but we've got to get your messages database set up. Try this: From the "message packets" screen, click the "Import" button, and then answer "Yes" when the software asks you if you "want to import all messages." The software will then build your messages database (you'll see a scrolling list of every message you've ever received, as it is inserted into the database). When it's done you'll see a new icon titled "Messages database." You'll be able to search through this to find any message.

Rebecca (10/01/97, 7:10PM): Thanks for your help, **but how do I know which screen is the "message packets" screen**?!

George (10/02/97, 8:44AM): Oh, sorry about that... **The "message packets" screen is the one with the gray background, and has a list of many message "packets" in a blue rectangle**.

Rebecca (10/02/97, 7:37PM): Hey! I just did it – and now I've got a messages database. Should I keep all of the other files that are listed on this "message packets" screen?

George (10/03/97, 8:48PM): Super! It's a real feeling of accomplishment when you prove to your computer who's boss – isn't it!? I remember when I got my first BASIC program to run. I felt like jumping up and "high-fiving" everybody!

Rebecca (10/03/97, 9:15PM): Hey! You must be some kind of computer expert – writing programs and all! ...

[end of transcript segment]

In this interchange, Rebecca was unable to understand the language contained in a booklet that described how to perform some task in the communications software. Another student and the instructor attempted to communicate with her but found that she was not able to interpret their

language either. George then engaged in a "language game" with her (shown as boldface in the transcript, above) complete with descriptive references to the software screens and how she should proceed. This language game was used between the students to negotiate what was meant by "database," and "message packets screen" before they could actually solve Rebecca's problem.

Rebecca's inability to solve the problem is not unusual. There are as many "Rebecca" students as there are "George" students. Technical documentation is not enough to support all ALN students. Occasionally, it is necessary to engage in an interactive "language game" to find out what is not understood, and how to solve the problem. In some instances telephone calls between students or between the instructor and students are necessary, to work beyond problems – especially if the difficulties prevent asynchronous interactions.

Ability to control communications software is only a small part of interacting and learning in an ALN. Hymes reminds us that it is also necessary to know *how to communicate to other learners*. Students in an ALN classroom are very familiar with classroom interactions – they have all been students in conventional, face-to-face classrooms in the past. However, "talking" in an asynchronous classroom as if it were a face-to-face classroom can lead to unexpected results, as can be seen in the following transcript.

> [start of transcript segment]

>> Anna (10/12/97, 9:08PM): Hey, Wanda – old girl! How did your performance appraisal interview go at work yesterday?

>> Wanda (10/14/97, 7:23PM): Anna, I know we've been working on a group project this week, but I don't know how to understand your comment from last Sunday. Have I been too slow to finish my part of the project?

>> Anna (10/14/97, 8:10PM): Wanda, I had to go back to my message from Sunday to find out what I said. I apologize, I didn't mean to imply that you're moving slowly on the project (or anything for that matter). I was just teasing a little bit because we seem to be doing so well as a group.

> [end of transcript segment]

In this dialog, Anna appears to have been offended by Wanda referring to her as "old girl!" After these comments, Anna and Wanda appeared to remain somewhat uncomfortable with each other and their groupwork and classroom interaction suffered. A telephone interview by the researcher, with both Anna and Wanda disclosed that this incident was troubling to both of them, and that neither was able to "forget about it." However, following this experience, both Wanda and Anna reported that they were much more careful about how they worded messages to classmates.

Nevertheless, sometimes it will facilitate interaction if the "speaker" and "listeners" in an ALN are able to discern the attitude with which a certain comment is being voiced. For example,

sarcasm and hyperbole are important linguistic mechanisms with which to highlight misperceptions in a Socratic dialog. In some situations, comedy relief can be used to change the course of a discussion or to defuse tensions in a prolonged discourse. However, as displayed above, all of these linguistic techniques are easily misunderstood if the "listeners" are not savvy to the "speaker's" intention. On the other hand, these techniques lose their impact if the speaker is too obvious in "telegraphing" his or her plan.

Interactants in online "chat" groups, MOOs, and MUDS (multiplayer, computer-based role playing games) have developed a technique that increases the possibility that these linguistic techniques will be recognized appropriately, but that does not reduce their potential impact. This technique is called "emoting" and is accomplished by embedding posture or attitudinal information in a message (Turkle, 1995). For example, to display embarrassment, and a childhood innocence, a message sender might write:

> <Don looks at his feet, and toes the sand> Gosh...

To display an almost fanatical devotion to an idea being discussed, the researcher once typed the following message:

> <Don stands on his desk, faces East, thrusts his right fist into the air and shouts> Long live B. F. Skinner!

To exhibit approval for a student's effort, but also to encourage him to press on despite persistent difficulties, the researcher once wrote:

> <Don emerges from a mist, and whispers in a solemn voice> use the force, Aaron.

Interestingly, the technique of "emoting" was spontaneously adopted by several of the researcher's students in their own messaging. Through telephone interviews with these students, I learned that my "emoting" comments elicited laughter, reflection and surprise – but in all cases, the students described that the use of "emotes" led to a much faster, and deeper understanding of the comment than they felt could have been realized otherwise.

Serendipitous side effects
The social processes and the cooperative development of technical skills and communication techniques described above has also had the serendipitous side effect of engendering a cooperative and interdependent learning culture among students (Winiecki, 1997). Soon after the emergence of "language games" and "emoting," students increased their mutual problem solving and help seeking activities. They became much less reliant on the teacher as a source of answers, and more reliant on each other and their individual areas of expertise, as the following set of messages displays.

[start of transcript segment]

> Rebecca (11/12/97, 12:14AM): George, I haven't been able to figure out what Gagne is talking about in chapter 4. Have you been able to make sense of it?

George (11/13/97, 7:18PM): Hi Becky, I've been away on a business trip and haven't had time to reread the chapter. But if I remember correctly, he was trying to classify the different kinds of things that people usually have to learn. I understood verbal, psychomotor and concrete concepts, but I don't think I really know what he means by defined concepts or rules. Is this where you're getting stuck also?

Rebecca (11/13/97, 7:45PM): Yes, George, I'm "not getting" what he means by "defined concept." Every time I think that I understand, I go back and read pages 59 – 61 and I start doubting myself again.

Aaron (11/13/97, 8:27PM): Rebecca and George, I think I've got an example of the difference between a concrete concept and a defined concept...

George (11/13/97, 8:36PM): Hi Aaron. Your example got me thinking. Do you suppose that ...

Rebecca (11/13/97, 9:17PM): Hmmm <rebecca scratches her head, and looks confused>, I'm still not sure – but I think that I'm getting closer to knowing what this stuff means. I don't know what I'd do without you guys. Here it is almost 9:30 on a Thursday night and we're still working on this stuff. Do you think we'll figure it out before the test next week?

    [end of transcript segment]

Aaron, George and Rebecca appeared to be the most active cohort in the class. Their interactions spanned both curricular and personal matters. On several occasions, Rebecca made reference to future interactions with her classmates. For example, as the semester neared its end, she sent a message to the class: "when we graduate, we're going to have to have a big party together!"

Since the semester when these transcripts were captured, Rebecca, Aaron and George have not taken another ALN course together. However, they still correspond in a public area of the ALN, called (aptly enough), the "Student Union." Their messages still refer to their experiences as classmates and they still task about taking other courses together. The experiences they shared were instrumental in facilitating an ongoing, and an interdependent learning relationship.

Conclusion
This paper describes tacit practices that are necessary for the successful accomplishment of "competent studentship" in a face-to-face classroom. It then described how these same practices are sometimes difficult to realize in asynchronous learning networks (ALNs). Finally, methods for aiding the ALN student to accomplish these tacit practices are described, and examples were given. While the concepts and techniques described in this paper are remarkably "unremarkable," their mundane appearance belies their importance in educational interactions.

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