Conversational classroom

The environment we have attempted to create is one in which conversation occurs, where conversation is understood as active and engaged participants co-creating meaning and understanding in an emergent process characterized by a high level of turn-taking and unplanned interaction. "Conversation" might suggest that the classroom is informal or casual, but this is not our meaning. Nor do we mean simply interaction, which might be directed by a single individual, as in the Socratic method. The seminar is the model most similar to what we are calling the conversational classroom. In effective seminars, participants learn through a process of engaging one another's ideas, surfacing issues, experiencing surprise, and reflecting on one's own ideas. This is a learning that cannot exist without conversation.

This approach rests on a certain understanding of communication. Communication does not so much carry information between students and instructors as it provides the means for creating a context in which individuals can develop and coordinate shared understandings. A linear model of instruction, such as the lecture style that is typical in classes with large enrollments, is not a very rich context for interaction; hence learning occurs through the transmission of information. In a conversational classroom, with a rich interaction context, learning occurs through engagement and participation. This perspective aligns us with learning theories that emphasize emergence and reflection, such as Weick's theory of organizing, and Schon's concept of reflection-in-action.

The course used in this study was a sophomore-level programming course in data structures [?] enrolling between 80 and 100 students a term. The course posed a number of challenges to conversation. One challenge is the size of the course and the low "floor time" (time available for speaking) to student ratio. In such a situation, techniques must be used (1) to increase floor time (such as through breakout group discussions), (2) to create a climate in which students feel welcome to speak when they wish, and (3) to engage students as active listeners. For students, active listening means feeling and behaving in an engaged manner rather than in a passive, anonymous manner. Students must attend to the process of the classroom as well as to content. A second challenge is the level of the course. Sophomores generally have little experience with seminar courses in which the student guides the learning process; they are accustomed instead to lecture courses where the instructor provides the content. In a traditional classroom at this level, class time is the opportunity for the instructor to access students, or student attention. By contrast, in a conversational classroom, class time is an opportunity for students to access the instructor as a learning resource. Classroom techniques must help students to develop the skills needed for this type of environment. A third challenge is the culture of computer science and engineering education, which has been recognized as emphasizing lecture and students as receivers of knowledge [cites here]. Students
encountering a conversational classroom are likely to resist the approach as being ambiguous, uncertain, and nonroutine.

Techniques to support the conversational classroom

The techniques for supporting conversation are not remarkable in themselves. They are widely used by instructors in any number of courses. The distinction is the systematic use of the suite of techniques to create a communication environment that authentically removes the instructor as the oracle, as the definitive source of information. When used comprehensively, they place responsibility upon the student to engage and participate in knowledge creation and therefore in his or her own learning process.

The two primary techniques are those that create interactivity and those that create a sense of presence. Complementing these are two techniques that are critical to creating and sustaining the system as a whole.

Interactivity

Interactivity refers to the extent of give-and-take within the classroom. At a basic level, it refers to the level of exchange between the instructor and students, and among students themselves. More completely, it refers to the extent to which participants share the ability to shape the nature and direction of the conversation. Consequently, interaction techniques aim increase opportunities for talk, and to diversify those opportunities; however, they must be undertaken in a spirit of openness and collaboration, to co-create the conversation.

Examples of interaction techniques:

- Asking students questions about readings
- Developing opportunities for discussion, such as by identifying points in the readings and assignments and posing questions about them
- Using short (3-5) minute informal small groups to work on problems
- Using nondefensive, supportive language (not threatened by questions and critique, demonstrating a willingness to change)
- Encouraging students to ask questions
- Having students answer each other's questions rather than the instructor
- Giving students sufficient time to answer, even if it means noticeable periods of silence

Presence

Presence represents what phenomenologists would call authenticity or genuine engagement. It is a demonstration of one's commitment to being in the conversation as it emerges, regardless of what direction it takes or what outcome it has. Presence is also a commitment to regarding the other participants in the conversation as unique, as co-creators, and as having equal rights and responsibilities to one's own. Presence is exemplified by a sense of connection with one another. Techniques create both physical presence--decreasing the distance between instructor and student or among students themselves--and also psychological presence through a sense of attentiveness and focus.
Examples of presence technique

- Instructor walking the aisles - physically coming closer to the students
- Instructor taking part in small group discussion
- "Readbacks" to students to be sure question is understood before answering it
- Calling students by name
- Referring by name to earlier student contributions ("As Jane said earlier...")
- Not interrupting student contributions

Persistence

The techniques outlined above must be sustained in a comprehensive and systematic manner. That is, they must persist. Persistence refers to a commitment to a conversational classroom, even when that commitment is risky for the instructor, such as being unable to cover all desired material, or facing stiff resistance from students and perhaps from course assistants. Students are more likely to trust in conversational classrooms and take the necessary risks when instructors are persistent.

Important aspects of persistence

- Consistent use of techniques, particularly when use of "traditional" techniques would be easier
- Frequent use of techniques, such that they become the normal mode of operation
- Continuous attention to the use of techniques, such as through regular requests for student feedback on the process
- Intense use of techniques, meaning integrating techniques throughout all aspects of the classroom rather than only during specially created times.

Commitment to Emergence

Emergence is a quality of the conversational classroom, in which the actual experience of the classroom is created in real time by the interactions and presence of the participants themselves. Certainly instructors do need to plan lessons to some extent, but a commitment to emergence is a willingness to modify those plans in response to the dynamics present in the classroom. A commitment to emergence is fundamental to moving away from the "transmission model" of the classroom. Emergence gives students the ability to shape and direct their own learning.

Important aspects of emergence

- Student driven pacing, speeding up or slowing down depending on student feedback
- Discussion driven lessons rather than lecture driven lessons
- Impromptu or interlude lectures, used when there is evidence that students do not understand
- Being willing to cover material only partially rather than thoroughly
- Not imposing structure through pre-designed presentation (e.g., PowerPoint slides)
• Taking seriously the surfacing and elicitation of student ideas, even when they are unexpected
• A willingness to be seen as unprepared for answering a question