Case Analysis Data

**Case#**  C101  **Citation**  Cifuentes, L., Murphy, K. L., Segur, R., & Kodali, S. (1997). Design considerations for computer conferences. Journal of Research on Computing in Education, 30(2), 177-201.

**Level:**  undergraduate  **Topic:**  Technology in the Classroom

**Value:**  Online Collaborative Learning  **Classification:**  collaboration

**Goal:**  Learner's retain some control over the design and content of their learning.  **Classification:**  student control

**Method:**  Students are required to choose a discussion topic and then prepare and moderate a weekly discussion on that topic for the entire class.

**Classification:**  Asynchronous  Student-student  Discussion

**Effectiveness:**  When students chose topics that interested them, they participated more in the discussion. Also, when students were responsible for a topic, other students purposefully supported them with their participation, hoping for subsequent reciprocal support.

**Condition:**  Instructors with more experience in using CMC found it easier to allow students to choose topics and moderate discussions than did instructors without much CMC experience.

**Classification:**  Instructor  Background

**Effectiveness:**  When the instructor chose all the discussion topics, the students did not find the discussion relevant (in their opinion) or interesting. Therefore, they did not feel the discussions were valuable nor did they participate very much.

**Condition:**  Students must value the use of CMC discussions, especially if there are other methods of communication available. The students must consider the general topic of the class interesting.

**Classification:**  Student  Values

**Value:**  Online Collaborative Learning  **Classification:**  collaboration

**Goal:**  Students will collaborate in each other's learning.  **Classification:**  collaboration

**Method:**  Require student's weekly participation in CMC discussions.

**Classification:**  Asynchronous  Student-student  Discussion

**Effectiveness:**  Students without web access at home logged into the discussions much less frequently than those who had home access, leading to an uneven rate of student participation. This uneven participation hindered the creation of online community.

**Condition:**  Students have convenient access to the discussions from home, work, and school.

**Classification:**  Technology  Access
Value: Online Collaborative Learning
Goal: Students will collaborate with peers as they learn.
Method: Each student prepares and moderates one class discussion with one peer.

Classification: Asynchronous  Student-student  Collaboration

Effectiveness: Some students were more interested in participating and moderating the discussion than others. When students of mixed interest were paired together, some conflict arose due to an uneven sharing of the moderator workload.

Condition: Each student must be committed to the success of the discussion and be willing to do their fair share.

Classification: Student  Motivation

Value: Online Collaborative Learning
Goal: Students will learn through collaboration with the instructor and their peers.
Method: Use computer-mediated-communication for instructor-student and student-student communication.

Classification: Asynchronous  Instructor-student  Discussion

Effectiveness: When either the instructor or the students lacked technical skills or confidence using CMC software, online discussions faltered or never started. It often took several weeks for new CMC users to become familiar with the basic functioning of the software.

Condition: Both the instructor and students must be adequately prepared to use the CMC software. External technical support should be available to class participants when needed.

Classification: Student  Skills and Ability - Technical


Value: Online Learning Community
Goal: Students control part of the learning process.
Method: Assign each student as a moderator for a discussion topic they choose.

Classification: Asynchronous  Student-student  Discussion

Effectiveness: When students chose and moderated a topic, they posted three times as many messages during that week.
**Condition:** Students must be willing and prepared to choose a topic and act as moderators.

**Classification:** Student Motivation

**Effectiveness:** When students chose and moderated a topic, they posted three times as many messages during that week.

**Condition:** The instructor must be willing to give up some control over the discussion.

**Classification:** Instructor Values

**Value:** Online Learning Community

**Classification:** community

**Goal:** Students will collaborate in each other's learning.

**Classification:** collaboration

**Method:** Provide chat as a tool for synchronous communication between collaborative pairs of students.

**Classification:** Synchronous Student-student Collaboration

**Effectiveness:** If students had email access, they tended to use it instead of chat. For these students, e-mail was more familiar and enabled all the communication they needed in order to collaborate. There was no reason to use chat.

**Condition:** There must be a good reason for students to use chat - either they do not have e-mail or the collaborative task requires immediacy. Students must know how to use chat.

**Classification:** Student Motivation

**Method:** Require student's weekly participation in CMC discussions.

**Classification:** Asynchronous Student-student Discussion

**Effectiveness:** Students without web access at home logged into the discussions much less frequently than those who had home access, leading to an uneven rate of student participation. This uneven participation hindered the creation of online community.

**Condition:** Students are willing to participate in discussions frequently.

**Classification:** Student Motivation

**Value:** Online Learning Community

**Classification:** community

**Goal:** Students will participate in an engaging online discussion.

**Classification:** discussion

**Method:** Assign one student to the role of an instigator using a pseudonym (false identity).

**Classification:** Asynchronous Student-student Other - anonymity

**Effectiveness:** The student instigator generated and provoked discussion through provocative statements and questions posted to the discussion. However, some of the students were offended to find out one of their peers was using a false identity.
**Condition:** Students should be accepting of and willing to assume out-of-character and concealed identity roles as a means of inspiring interaction in the online discussion.

**Classification:** Student Motivation

**Case#** C103  
**Citation** McAlpine, I. (2000) Collaborative learning online. Distance Education, 21(1), 66-80.

**Level:** graduate  
**Topic:** Land and Food Resources

**Value:** Online Collaborative Learning  
**Classification:** collaboration

**Goal:** Students develop shared meaning.  
**Classification:** collaboration

**Method:** Instructor opens discussion with a question, and closes the discussion after a specified time with a summary post.

**Classification:** Asynchronous Instructor-student Discussion

**Effectiveness:** Students generally posted to the discussion only once and did not return to the discussion forum to interact. This method was not effective in creating true online discussion.

**Condition:** Students must be able to facilitate discussion among themselves without relying on daily instructor interaction.

**Classification:** Student Skills and Ability - Content

**Value:** Online Collaborative Learning  
**Classification:** collaboration

**Goal:** Students will learn from each other in small groups.  
**Classification:** collaboration

**Method:** Require students to work on a collaborative task within a closed group discussion forum.

**Classification:** Asynchronous Group Discussion

**Effectiveness:** Some students in rural areas with poor telephone lines had difficulty contributing to discussions due to technical connection faults.

**Condition:** Students must have reliable access to the computer conference.

**Classification:** Technology Access

**Case#** C104  

**Level:** graduate  
**Topic:** Information Systems Analysis and Design

**Value:** Discovery learning  
**Classification:** learning theory

**Goal:** Students will collaborate with their peers.  
**Classification:** collaboration

**Method:** Broadcast course announcements via listserv.

**Classification:** Asynchronous Instructor-student Other - Email/Listserv
Effectiveness: This method was more effective than posting announcements to the class web page because students checked e-mail more frequently than they visited the class web page.

Condition: Students must be able and willing to check e-mail regularly.

Classification: Student Motivation

Method: Provide a class file transfer protocol (FTP) site for file exchange.

Classification: Asynchronous Instructor-student File Exchange

Effectiveness: FTP was not used by the students to exchange files among themselves, but was useful to the instructor as a way to distribute and collect a class survey.

Condition: Class participants can use FTP software. This method is not recommended if simpler file sharing options (such as websites with download links or common-format e-mail attachments) are available.

Classification: Student Skills and Ability - Technical

Method: Provide a space for students to create their own web pages in order for them to share information and exchange files with other students.

Classification: Asynchronous Student-student File Exchange

Effectiveness: Only the students with the requisite skills were able to use student-created web pages to exchange files among collaborative group members.

Condition: Students need to know how to create their own web pages using HTML programming language or web page creation software such as Netscape Composer.

Classification: Student Skills and Ability - Technical

Method: Students use e-mail to turn in assignments and coordinate group project work.

Classification: Asynchronous Student-student Other - Email

Effectiveness: E-mail was the most popular form of interaction. However, the overuse of e-mail quickly generated a huge volume of e-mails to which the instructor (and other students, in some cases) fell obligated to respond.

Condition: The number of students and assignments must be small in order to keep the volume of e-mail at a manageable level.

Classification: Instructor Other - Class Size

Method: Use Internet Relay Chat (IRC or chat) in project groups for group coordination, clarification and decision-making.

Classification: Synchronous Group Discussion

Effectiveness: The students who used IRC were able to coordinate group decisions successfully. However, only a small number of students used IRC; the rest chose to coordinate all group communications and decision-making through other means, primarily e-mail.
Condition: Students must have skills in discussion control and IRC client use.

Classification: Student Skills and Ability - Technical

Effectiveness: As the number of students in the chat increased, communication became less effective and harder for students to control.

Condition: The number of students in a chat session must be small (4-5).

Classification: Student Other - Group Size

Case# C105
Level: graduate
Topic: Teaching and Learning Online for Professional Educators

Value: Online Learning Community
Goal: Students contribute freely and openly to class discussions.

Method: Students discuss weekly course topics in a CMC discussion.

Classification: Asynchronous Student-student Discussion

Effectiveness: Some students did not have access at both their home and office, while others found the dial-in costs prohibitive from home. Students in these situations did not participate in the discussions very often.

Condition: Discussion access should be available at times convenient to the student (both at home and office) and must be reliable and affordable.

Classification: Student Time

Value: Online Learning Community
Goal: Students contribute freely and openly to weekly class discussions.

Method: Students discuss weekly course topics in a CMC discussion.

Classification: Asynchronous Student-student Discussion

Effectiveness: Some students joined the course late and did not participate in the discussions very often, since they felt they had to read many posts just to "catch up" to the rest of the class.

Condition: All students should start the course at the same time.

Classification: Student Synchronicity

Value: Online Learning Community
Goal: Students engage in online discussions on a frequent basis.

Classification: community discussion
Method: Allow students to create their own discussion topics or move an emergent thread into it's own discussion space.

Classification: Asynchronous  Student-student  Discussion

Effectiveness: This method helped create a sense of ownership and togetherness. Students often met in a social discussion space, discovered a common conversational interest and then created a new discussion to continue their discussion. This aided community formation.

Condition: The CMC software must support students' ability to create discussion topics and move existing threads into these new discussions.

Classification: Technology  Features

Method: Students discuss weekly course topics in a CMC discussion.

Classification: Asynchronous  Student-student  Discussion

Effectiveness: If student backgrounds were too dissimilar, some lacked confidence in entering discussions, thinking "other students know so much more than I", or "they use much better language skills than I." This inhibited active discussion.

Condition: Students should have similar professional or academic interests and backgrounds.

Classification: Student  Background

Value: Online Learning Community

Goal: Students experience a sense of community.

Method: Assign structured group exercises before unstructured group exercises.

Classification: Other  Instructor-student  Other - Group Exercises

Effectiveness: This method allowed students to find "common ground" and develop self-confidence in new social situations before requiring them to use their own initiative in the formation of online community.

Condition: Students have widely dissimilar backgrounds.

Classification: Student  Background


Level: graduate  Topic: Educational Technology

Value: Dialog and discussion

Goal: Students learn through dialogue with peers and the instructor.

Method: Conduct large group discussions using synchronous CMC - chat.

Classification: Synchronous  Instructor-student  Discussion
Effectiveness: In order for this method to be effective, students had to coordinate their work and personal schedules in order to attend class at a pre-arranged time. When students were widely scattered throughout many time zones, this was very difficult.

Condition: Students must be able to be on-line at the same time.

Classification: Student Synchronicity

Value: Dialog and discussion
Goal: Students learn through dialogue.

Classification: interactive dialogue discussion

Method: Conduct large group discussions using synchronous CMC - chat.

Classification: Synchronous Instructor-student Discussion

Effectiveness: Mis-matched typing and language skills limited student participation due to a lack of confidence or competence.

Condition: Students must be confident in their typing and language abilities.

Classification: Student Skills and Ability - Technical

Value: Dialog and discussion
Goal: Students will engage in dialogue with their peers and the instructor.

Classification: interactive dialogue discussion

Method: Conduct large group discussions using synchronous CMC - chat.

Classification: Synchronous Instructor-student Discussion

Effectiveness: In a large group, there were many conversation threads going on at once, which made following a particular conversation difficult.

Condition: Students must be able to selectively attend to one (or a few) conversation topic among many.

Classification: Student Skills and Ability - Technical

Value: Dialog and discussion
Goal: Students will learn through dialogue.

Classification: interactive dialogue discussion

Method: Prepare students for chat sessions by meeting together via videoconference or in-person if possible.

Classification: Synchronous Group Discussion

Effectiveness: Meeting in "real life" as a group, in-person if possible, helped establish interpersonal rapport that moved the group development process through the early phases of forming and norming.

Condition: Students must be able to meet either via videoconference or in-person.

Classification: Student Location, Synchronicity
Value: Dialog and discussion  
Goal: Students will solve problems and make decisions as a group.  

**Method:** Provide access to chat software for small groups to use as they collaborate and continue dialogue started during whole class discussions.  

**Classification:** Synchronous  
**Group:** Discussion  

**Effectiveness:** This method helped students improve their chat skills in a non-threatening environment. The group experiences while learning the chat tool made small group work in other modes more effective and enhanced their communication w/other class participants.  

**Condition:** Students must have some overlap in the time they can be on-line so they can schedule chat sessions with their group. Students with frequent and reliable access to the chat tool make this more feasible.  

**Classification:** Student  
**Synchronicity**  

**Case#** C107  

**Value:** Learner-centered collaboration in rich environments supporting active learning.  
**Goal:** Create self-sufficient information users.  

**Method:** Provide multiple technologies (email, listserv, webpages) to support online community.  

**Classification:** Asynchronous  
**Other:** Mixed  
**Collaboration**  

**Effectiveness:** Technologies themselves did not produce community, rather it was a function of the task and collaborative structure. When there wasn't a significant need (or motivation) for collaboration, collaborative technologies were not used.  

**Condition:** Group tasks that require electronic interaction, coaching and assistance are available.  

**Classification:** Other - Content  
**Features**  

**Value:** Rich environments supporting active learning.  
**Goal:** Students will form connections to the established community of practice in a content area.  

**Method:** Provide global experts in the content domain as resources for students to use in completing projects.  

**Classification:** Asynchronous  
**Student-external**  
**Collaboration expert**  

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Thursday, January 31, 2002
Effectiveness: Some experts who volunteered to assist students did not respond to student questions in a timely manner, leading to frustration among the students.

Condition: Global experts must be available, accessible, and willing to provide reliable and timely responses to students.

Classification: External Motivation Resource

Effectiveness: Many students expressed reluctance to pose questions to experts (written communication apprehension), since they did not know what to expect from these experts. Initial statements from the experts to the students encouraging dialog may have been helpful.

Condition: Students must have sufficient content-area experience to be able to communicate effectively with experts on topic issues.

Classification: Student Background


Value: Online Learning Community Classification: community

Goal: Create a thoughtful online learning community.

Method: Each student uses a pseudonym (avatar) to identify themselves in a publicly viewable portfolio of their posted work.

Classification: Asynchronous Student-external Review and Feedback expert

Effectiveness: The presence of a public audience increased the quality and depth of student posts. Avatars must be non-ascrivable in order to preserve student anonymity.

Condition: Public (or invited) guest access is available. Visitors are willing to "leave their mark" somehow so that students know they have viewed their work.

Classification: External Features Resource

Method: Provide a social discussion space for off-topic conversations.

Classification: Asynchronous Student-student Social

Effectiveness: Content-only discussions were not enough to create community. Providing an off-topic place that encouraged social dialog helped students form emotional bonds and facilitated community building.

Condition: Students must interact with their peers often enough to want to engage in non-content-focused social dialog.

Classification: Student Values
Method: Require student participation in discussions and other online interactions.

Classification: Asynchronous  Student-student  Discussion

Effectiveness: Providing a "payoff" (grade, etc.) to increase participation, especially during the first few weeks of class, motivated students to participate. This early participation helped students learn the 'new' communication modes and helped form online community.

Condition: Students must be motivated by extrinsic feedback, such as a grade, to participate, or be willing to participate for other reasons.

Classification: Student  Motivation

Method: Use threaded conferences for content-focused discussions which require direct responses to other students' posts as the basis for much of the assigned coursework.

Classification: Asynchronous  Student-student  Discussion

Effectiveness: Students could not "fall asleep" during class. They had to read other posts before they could create meaningful responses. When posts were evaluated in part on relevancy, students put more effort into creating meaningful initial posts and replies.

Condition: Students have convenient access to the discussions and are willing to participate in discussions frequently.

Classification: Student  Motivation

Value: Online Learning Community

Goal: Expand the learning community to include international participants.

Method: Include students from other locations, especially other countries, to engage in dialog about course content.

Classification: Asynchronous  Student-external  Discussion  expert

Effectiveness: The quality of student posts and student generated cases (part of the content for this course) improved with an expanded international audience. International students exhibited more desirable (thoughtful) on-line behavior than did US students.

Condition: International students are available to participate, and a common language can be used.

Classification: External  Access  Resource

**Value:** Student Interaction  
**Classification:** interactive dialogue

**Goal:** Students will develop critical thinking skills.  
**Classification:** critical thinking

**Method:** Instructor responds to all or most of student posts.

**Classification:** Asynchronous  
Instructor-student  
Discussion

**Effectiveness:** The instructor logged on only 1 or 2 days per week. Most students did not perceive a prompt response to their posts by either the instructor or their peers. This lack of interaction may have contributed to low student interest.

**Condition:** Instructor must be able to log on regularly (daily).

**Classification:** Instructor  
Time

**Method:** Require student participation in weekly topical CMC discussions.

**Classification:** Asynchronous  
Student-student  
Discussion

**Effectiveness:** When students posted the day before the discussion ended, there was no chance for true discussion or meaningful interaction. In order for true discussion to take place, there must be a period of time when all students are posting and replying to others.

**Condition:** Students are willing to post to the discussion, including replying to others' posts, more than once over the allotted time for the discussion.

**Classification:** Student  
Motivation

**Effectiveness:** Students in this program were used to "monological" content: fact/concept based. They did not participate in discussions very much; in part because they weren't used to this kind of "multilogical" teaching.

**Condition:** Students have dedicated time for and convenient access to the CMC discussions.

**Classification:** Student  
Time

**Effectiveness:** Students did not demonstrate the self discipline to participate as the course required them to do. They posted infrequently with very little interaction.

**Condition:** Students must appreciate that an online course is different in substantial ways from a traditional course, and must be willing to adjust to different participation and interaction demands.

**Classification:** Student  
Values

**Effectiveness:** There was very little student interest in the topic, so students did not engage in interactive discussion.

**Condition:** Students must be interested in the discussion topics and be willing to thoughtfully discuss course content with each other.

**Classification:** Student  
Motivation

**Effectiveness:** In this study, active participation was awarded 15% of the class grade. There was no other compelling reason for students to use the discussions. Some of the students sacrificed 15% of their final grade and ignored the discussions completely.
There should be relevant instructional reasons for student discussions other than just to receive a participation grade (e.g., collaborative student tasks).

**Condition:**

**Classification:** Other - Content Features

**Case#** C110

**Citation** Vrasidas, C., & McIsaac, S. M. (1999). Factors influencing interaction in an online course. The American Journal of Distance Education 13(3), 22-36.

**Level:** graduate

**Topic:** Telecommunications For Instruction

**Value:** Meaningful Interaction and Discourse

**Goal:** Students will engage in dialogue with each other.

**Method:** Provide a regular mix of face to face and online discussion meetings.

**Classification:** Mixed Instructor-student Discussion

**Effectiveness:** Occasional face to face meetings met the social needs of these students, leading to reduced online discussion in subsequent weeks. Students viewed the online discussion weeks as "light" weeks.

**Condition:** Students must be co-located for face-to-face meetings.

**Classification:** Student Location

**Method:** Require student participation in a weekly topical CMC discussion.

**Classification:** Asynchronous Student-student Discussion

**Effectiveness:** A heavy workload led the students to believe this participation requirement was just busy-work. They had already written a paper on the discussion topic during the same week, so they saw no need to discuss the topic online with their peers.

**Condition:** Students must have the time available to contribute to discussions and be able to balance other coursework demands.

**Classification:** Student Time

**Method:** Use a synchronous discussion mode, such as chat, to continue previous asynchronous discussions.

**Classification:** Synchronous Student-student Discussion

**Effectiveness:** Students asked "Why talk about it twice?" and did not actively participate in the synchronous discussion.

**Condition:** The discussion method (asynchronous or synchronous) fits the discussion purpose and topic. Students are willing and able to use synchronous CMC mode.

**Classification:** Other - Content Features

**Method:** Use student moderators during weekly CMC discussions.

**Classification:** Asynchronous Student-student Discussion
**Effectiveness:** The student moderators did not give effective feedback or facilitate discussion among their peers, so there was very little interaction. These discussions were not effective.

**Condition:** Students must be willing and able to moderate and facilitate online discussions.

**Classification:** Student Motivation

**Case#** C111  
**Level:** undergraduate  
**Topic:** Research and Report Writing


**Value:** Peer-helping in a supportive learning environment

**Goal:** Students will help each other understand course concepts.

**Classification:** support collaboration

**Method:** Assign tasks that require peer involvement, such as peer-reviewing of assignment drafts.

**Classification:** Asynchronous Student-student Review and Feedback

**Effectiveness:** Peer-review assignments generated peer discussion and interaction, with the focus of the interaction on student-to-student, and not student-instructor. The resulting assignment submissions were of better quality than those submitted without peer review.

**Condition:** Students are willing to participate and provide drafts for review in a timely fashion to their peers.

**Classification:** Student Motivation

**Effectiveness:** Peer-review assignments generated peer discussion and interaction, with the focus of the interaction on student-to-student, and not student-instructor. The resulting assignment submissions were of better quality than those submitted without peer review.

**Condition:** Students must be able to reliably exchange files with their peers.

**Classification:** Student Skills and Ability - Technical

**Method:** Correct or rebuke students through private communication, such as email.

**Classification:** Asynchronous Instructor-student Personal Communication

**Effectiveness:** When the instructor publicly rebuked a student in the weekly discussion, student participation was reduced by 50% the next week.

**Condition:** A private communication channel must be available for the rebuke or correction of an individual student.

**Classification:** Technology Features
Method: Encourage students to answer technical "help" questions from their peers.

Classification: Asynchronous Student-student Technical Support

Effectiveness: Overly technical responses to questions in the discussion effectively shut down the discussion. Peer-helping seemed to be better received than instructor-helping, sometimes initiating further discussion among students.

Condition: Peers must be available, knowledgeable, and willing to offer technical help.

Classification: Student Technical Support

Method: Instructor asks direct questions to students to start each weekly online discussion.

Classification: Asynchronous Instructor-student Discussion

Effectiveness: Students didn't respond to general requests at the beginning of each weekly discussion to "discuss X topic", but did respond to direct questions about the topic. The use of effective questioning strategies improved the discussion experience.

Condition: The instructor must be available at the start of each discussion, or the system must be able to reveal pre-loaded discussion topics (and initial instructor posts) at pre-specified times.

Classification: Instructor Synchronicity

Method: Instructor does not answer every student question sent to him or her, but allows fellow students to answer peer questions in the discussion.

Classification: Asynchronous Student-student Discussion

Effectiveness: This method led to greater peer interaction. Questions began to be directed to other students rather than to the instructor. A large class provided a large pool of peers to respond to questions, increasing the likelihood of a response.

Condition: Students must be available (online frequently) and able to provide answers to peer questions.

Classification: Student Time

Method: Instructor set a "light" tone for the conference by the use of humor in initial posts.

Classification: Asynchronous Instructor-student Discussion

Effectiveness: After establishing a pattern of humor in instructor posts, the instructor posted a new assignment without any humor and students assumed the instructor was sad or mad. Student discussion waned for several days.

Condition: Students must understand the appropriate use of humor in posts.

Classification: Student Values

Method: Provide (and model) clear expectations for student discussion behavior.

Classification: Asynchronous Instructor-student Discussion
Effectiveness: Many students were not familiar with appropriate discussion protocol in the online environment. Without explicit guidance, clear expectations, and instructor modeling, they did not engage in effective discussion.

Condition: The instructor must practice effective online discussion behavior and protocol, and be able to communicate and model this behavior to students.

Classification: Instructor Skills and Ability - Content


Level: graduate Topic: Introductory Instructional Design

Value: Authentic Problem-based Collaboration Goal: Students will collaborate as they complete a group project.

Method: Students use shared web pages to construct a group project online.

Classification: Asynchronous Group File Exchange

Effectiveness: Using web pages allowed students to share ideas visually and provided a useful supplement to text based communication.

Condition: The students must have reliable web server access.

Classification: Technology Access

Value: Authentic Problem-based Collaboration Goal: Students will collaborate on a group project.

Method: Group members discuss project status during scheduled telephone conferences.

Classification: Synchronous Group Discussion

Effectiveness: Regular telephone conferences aided group decision-making and facilitated group social processes, improving the group’s collaborative efforts.

Condition: Students must be able to coordinate mutually convenient times, and must have the resources (money, technology) for regular phone conversations.

Classification: External Access Resource

Method: Provide several modes of CMC technology (discussion, chat, etc.) for small groups of 4-5 students to use as they complete a collaborative project.

Classification: Mixed Group Collaboration

Effectiveness: Experience using CMC technologies and familiarity with course content were helpful for collaboration. More experienced students implemented a more effective collaborative process.
Condition: Students are experienced in distance teamwork and have had some experience in the content domain.

Classification: Student Background

Effectiveness: When wide levels of technical skill existed among students in a group, collaboration was difficult, all available collaboration technologies were not be used, and the collaborative process was slow and ineffective.

Condition: Students in a group should have similar technical skill levels and be trained in the use of the various technologies.

Classification: Student Skills and Ability - Technical

Effectiveness: Teamwork was not effective when some team members lacked self-discipline and overall commitment to the collaborative project.

Condition: Students must have enough self-discipline to manage their time effectively and be committed to completing the team project.

Classification: Student Motivation

Method: Students and groups meet face-to-face on occasion for collaboration.

Classification: Synchronous Group Collaboration

Effectiveness: Face-to-face meetings helped students groups collaborate more effectively and improved subsequent distance teamwork.

Condition: Students are co-located or willing and able to travel to attend face-to-face meetings.

Classification: Student Location

Method: Students use shared web pages to construct a group project online.

Classification: Asynchronous Student-student File Exchange

Effectiveness: Using web pages allowed students to share ideas visually and provided a useful supplement to text based communication.

Condition: Students must have either web-page building skills or the system must support simple web page construction.

Classification: Student Skills and Ability - Technical

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Value: Online Collaborative Learning Classification: collaboration

Goal: Students experience a sense of community. Classification: community
Method: Provide an online forum dedicated to non-content-focused 'social" discussion.

Classification: Asynchronous Student-student Social

Effectiveness: Students who personally valued "community" used this space to get to know one another. Students who did not value community did not use this discussion space.

Condition: Students must value community among themselves and trust each other.

Classification: Student Values

Method: Students interact online using aliases only - no real identities are used.

Classification: Asynchronous Student-student Discussion - Anonymous

Effectiveness: Many students who were normally silent in class participated actively in online discussions. Students enjoyed getting to know each other through aliases without the "normal" external complicating factors, such as gender, age, race, and appearance.

Condition: Students must be willing to use an alias without revealing their true identity. This may be especially challenging if they are co-located and face-to-face meetings are possible.

Classification: Student Motivation


Level: undergraduate Topic: Fundamentals of Computing

Value: Supporting the Student Experience Classification: support

Goal: Students access learning material in the manner most convenient to them. Classification: student control

Method: Allow students to view discussions without being forced to contribute.

Classification: Asynchronous Student-student Discussion

Effectiveness: Students liked the ability to observe discussions without revealing their presence. They found the discussion board useful to keep track of class events. However, there was only a small percentage of students who actively participated in the discussions.

Condition: This method requires a large class size.

Classification: Other Class Size

Method: Format course materials and discussion posts so they can be easily downloaded and read off-line.

Classification: Asynchronous Instructor-student File Exchange

Effectiveness: Students wanted to keep their phone bills as low as possible, so whenever possible, they downloaded material and prepared discussion responses off-line.
**Condition:** The system must support the easy downloading of course material and the easy downloading and uploading of discussion posts.

**Classification:** Technology Features

**Method:** Instructors answer student questions via e-mail.

**Classification:** Asynchronous Instructor-student Other - Email

**Effectiveness:** Students who previously relied upon phone contact with instructors (tutors) appreciated the freedom to contact the instructor at any time, knowing they would receive an eventual reply, even if not immediately.

**Condition:** The instructor must commit to replying to each e-mail query from each student.

**Classification:** Instructor Time

**Method:** Provide online tutorial sessions via computer conference augmented by e-mail among students and between the instructor and students.

**Classification:** Mixed Student-student Discussion

**Effectiveness:** Many students who would not normally attend a face to face tutorial (among remote students) participated at some level in the online tutorial. Those who did not actively participate in the tutorial did at least report reading the discussion transcripts.

**Condition:** This method requires enough actively participating students to create a meaningful discussion.

**Classification:** Other Class Size

**Method:** Provide students with an option to have discussion posts (web-board) emailed directly to them.

**Classification:** Asynchronous Instructor-student Discussion

**Effectiveness:** When provided a choice, most students chose the "mail posts" option and used the web-based discussion interface only as an archive of previous posts. They appreciated the promptness and convenience the "email posts" option provided.

**Condition:** The discussion system must support the "email posts" option.

**Classification:** Technology Features

**Method:** Provide technical help via telephone.

**Classification:** Synchronous Student-external Technical Support expert

**Effectiveness:** This service was crucial during first two weeks of the course for new online students.

**Condition:** Adequate telephone support must be available.

**Classification:** External Technical Support Resource

**Value:** Online Learning Community  
**Goal:** Learners support each other’s learning efforts.

**Method:** Use a listserv to provide immediate and convenient access to whole group communication.

**Classification:** Asynchronous Student-student Other - Email

**Effectiveness:** The listserv was effective because students were immediately aware (through email) when another student communicated (posted) to the group, enhancing the feelings of belonging to a larger group. Even communication meant for one-one became one-many.

**Condition:** The students read e-mail frequently (at least daily).

**Value:** Online Learning Community  
**Goal:** Students build trusting and caring relationships with each other.

**Method:** Include international students from other cultures in the learning environment.

**Classification:** Asynchronous Student-student Discussion

**Effectiveness:** Including international students increased the diversity of the learning community, leading to a stronger sense of community.

**Condition:** International students with a common language are willing and able to participate in the learning community.

**Value:** Online Learning Community  
**Goal:** Students must have the time and desire to form interpersonal relationships with their peers.

**Method:** Require only a small number of postings to formal online discussions while encouraging socially-focused posts.

**Classification:** Asynchronous Student-student Social

**Effectiveness:** When there were too many required content-focused postings, students did not spend much time online developing interpersonal relationships with their peers and online community did not form.

**Condition:** Students must have the time and desire to form interpersonal relationships with their peers.
**Method:** Use a dedicated listserv for social dialog that is not content-focused.

**Classification:** Asynchronous  Student-student  Social

**Effectiveness:** Students developed interpersonal relationships with each other as they shared their everyday life events with each other.

**Condition:** Students are interested in sharing their lives online with the other members of their learning community.

**Classification:** Student  Values


**Value:** Online Collaborative Learning  **Classification:** collaboration

**Goal:** All students will participate in course discussions.

**Method:** Ask students to voluntarily provide peer feedback in the discussions.

**Classification:** Asynchronous  Student-student  Review and Feedback

**Effectiveness:** Few students provided feedback to peer posts.

**Condition:** Students must be willing and able to provide peer feedback without extrinsic motivation (reward for participation).

**Classification:** Student  Motivation

**Value:** Online Collaborative Learning  **Classification:** collaboration

**Goal:** Students will interact with peers and the instructor.

**Method:** Send an e-mail message to each student at the start of class, welcoming and encouraging a quick start, explaining an initial course assignment to 'connect” with the group and interact with the instructor through e-mail

**Classification:** Asynchronous  Instructor-student  Other - Email

**Effectiveness:** Most students did not connect with the class and/or the instructor until two to three weeks after the start of the course. The directions in the email message were not followed immediately, delaying effective interaction.

**Condition:** Students must be ready (e.g. communication technology is in place) and willing to start class right away.

**Classification:** Student  Motivation
**Value:** Online Collaborative Learning  
**Goal:** Students will think critically about course content.

**Method:** The instructor weaves, organizes and synthesizes students posts at the close of a weekly online discussion (that required the application of course content to real life).

**Classification:** Asynchronous  
Instructor-student  
Discussion

**Effectiveness:** Students often responded to the instructor’s final posts to clarify their previous statements and arguments, providing evidence of effective instructor mediation and students’ subsequent critical thinking.

**Condition:** Students must be willing to access course discussions after making their initial post in order to view the comments of the instructor (and others) and post a follow-up to these comments.

**Classification:** Student  
Motivation

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**Value:** Student reflection  
**Goal:** Students will reflect thoughtfully about their own learning.

**Method:** Students share and discuss reflective journals with instructor via e-mail.

**Classification:** Asynchronous  
Instructor-student  
Other - Email

**Effectiveness:** Some students reported that they did not have enough time to create, share, and discuss reflections while they were trying to learn the new technologies used in the online learning environment.

**Condition:** Students must have adequate time available for reflection. Previous experience with technology is helpful.

**Classification:** Student  
Time

**Effectiveness:** The level of trust between the student and the instructor influenced the willingness of the student to share personal reflections. A greater level of trust led to greater depth of student reflection.

**Condition:** The instructor must be willing and able to establish a high degree of trust with each student.

**Classification:** Instructor  
Motivation

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**Value:** Student reflection  
**Goal:** Students will reflect thoughtfully about their own learning.

**Method:** Students share and discuss reflective journals with instructor via e-mail.

**Classification:** Asynchronous  
Instructor-student  
Other - Email

**Effectiveness:** Some students reported that they did not have enough time to create, share, and discuss reflections while they were trying to learn the new technologies used in the online learning environment.

**Condition:** Students must have adequate time available for reflection. Previous experience with technology is helpful.

**Classification:** Student  
Time

**Effectiveness:** The level of trust between the student and the instructor influenced the willingness of the student to share personal reflections. A greater level of trust led to greater depth of student reflection.

**Condition:** The instructor must be willing and able to establish a high degree of trust with each student.

**Classification:** Instructor  
Motivation

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**Case#** C118  
**Level:** alumni  
**Topic:** Drug and Alcohol Policy  
**Value:** Student-centered Dialogue  
**Goal:** Students share and debate personal views on course content.

**Method:** Use informal e-mail messages (listserv) to engage participants in a weekly topical dialog.

**Effectiveness:** The participants were very open in expressing their opinions, inviting questions, and challenging the instructor's positions. Participants used many personal examples to ground the discussion.

**Condition:** Participants are willing to share their opinions and open themselves up to critical dialogue.

**Effectiveness:** Only 40% of registered participants actually posted to the listserv. Only 15% were active contributors throughout the entire course. Some participants were first time online learners who may have only wanted to "lurk" for familiarization.

**Condition:** Participants must desire to engage in dialog or else they may choose not to.

**Case#** C119  

**Value:** Learner-centered Collaboration  
**Goal:** Students will collaborate in developing an understanding of instruction in distance education.

**Method:** Encourage and set the expectation for students to help each other with technical problems through e-mail dialog.

**Effectiveness:** Students formed informal contacts with each other, shared their technical problems with each other, and offered helpful solutions to each other.

**Condition:** Students are willing to share problems they have experienced and solutions they have found helpful.

**Method:** Use e-mail and class listserv for students to participate in class discussions and collaborate on team projects.

**Effectiveness:** Students found the number of messages overwhelming at times and had difficulty allocating the time required for them to read every message and respond when required.
Students must be willing and able to access e-mail regularly and be able to manage a large volume of e-mail messages.

**Condition:** Students must be willing and able to access e-mail regularly and be able to manage a large volume of e-mail messages.

**Classification:** Student Time

**Case#** C120  
**Level:** graduate  
**Topic:** Not Reported

**Citation** Harasim, Linda (1993). Collaborating in cyberspace: Using computer conferences as a group learning environment. Interactive Learning Environments, 3(2), 119-30.

**Value:** Online Collaborative Learning  
**Goal:** Students will collaborate on learning activities with their peers.

**Method:** Open and close each topical conference on a published weekly schedule.

**Classification:** Asynchronous Student-student Discussion

**Effectiveness:** Both students and the instructor appreciated a regular period for posting to a topical discussion. This helped keep the discussion on task and moving ahead. Students posted on average 5-10 messages per week and posted 85-90% of all messages.

**Condition:** Both the instructor and the students must be able to dedicate regular time each week to contribute to each conference.

**Classification:** Student Time

**Effectiveness:** Both students and the instructor appreciated a regular period for posting to a topical discussion. This helped keep the discussion on task and moving ahead. Students posted on average 5-10 messages per week and posted 85-90% of all messages.

**Condition:** The conference system must be reliably accessible at all times.

**Classification:** Technology Access

**Method:** Provide a separate "help desk" conference for the posting of technical problems and questions.

**Classification:** Asynchronous Student-student Technical Support

**Effectiveness:** Students used this conference during the first few weeks of the course; many were reporting a feeling of being "lost in space." After several weeks this conference was rarely used.

**Condition:** A knowledgeable person (support staff, instructor, peer, etc.) must be available to monitor and respond to questions asked in the conference.

**Classification:** External Technical Support Resource

**Effectiveness:** Students used this conference during the first few weeks of the course; many were reporting a feeling of being "lost in space." After several weeks this conference was rarely used.
**Condition:** Students are able to access the help desk conference in spite of their technical difficulties.

**Classification:** Technology Access

**Method:** Students provide a synthesis of the posts in a weekly topic using the technique of "discussion weaving."

**Classification:** Asynchronous Student-student Discussion

**Effectiveness:** Students working individually or small groups were able to review and analyze the posts during a weekly discussion and post a synthesis to close out a particular conference.

**Condition:** Students must be willing and able to synthesize a week's discussion.

**Classification:** Student Skills and Ability

**Method:** Use small-group conference spaces for task specific discussion.

**Classification:** Asynchronous Group Discussion

**Effectiveness:** Large (n>10) group conference generated a large volume of messages and were not useful for decision making or collaborative task completion. Students sometimes turned to chat, phone and face to face meetings instead.

**Condition:** Students must be willing to use discussions on a group-agreed basis (schedule, content, etc).

**Classification:** Student Motivation

**Effectiveness:** A large (n>10) group conference generated a large volume of messages and was not useful for decision making or collaborative task completion. Students sometimes turned to chat, phone and face to face meetings instead.

**Condition:** The system must support smaller conferences (group spaces).

**Classification:** Technology Features

**Case#** C121  

**Value:** Online Collaborative Learning

**Goal:** Students participate in group discussions.

**Method:** Instructors check access logs and encourage students (who are not contributing to their study group discussions) by email or phone.

**Classification:** Asynchronous Instructor-student Personal Communication

**Effectiveness:** Instructors devoted quite a bit of time in the first few weeks encouraging online interactions, but by the end of the semester, almost all students were regularly participating in the online discussions.
Condition: Instructors are willing to devote the amount of time required to encourage participation.
Classification: Instructor  Time

Value: Online Collaborative Learning  Classification: collaboration
Goal: Students will collaborate in each other's learning process.  Classification: collaboration

Method: Assess student performance with group evaluation.
Classification: Other  Group  Collaboration

Effectiveness: Students engaged in collaborative efforts to complete assigned projects each assumed a part of the overall task. Each group successfully submitted an agreed upon final product after peer review and revision.
Condition: Each group member must be willing and able to be accountable for their part of the group project.
Classification: Student  Motivation

Effectiveness: Students engaged in collaborative efforts to complete assigned projects each assumed a part of the overall task. Each group successfully submitted an agreed upon final product after peer review and revision.
Condition: Peers must be willing to critique each other's work.
Classification: Student  Motivation

Method: Assign students to study groups of six at the beginning of the course.
Classification: Other  Group  Collaboration

Effectiveness: Students chose their own study groups for each 2-week topic. Student isolation was reduced and communication between students and instructors was improved.
Condition: Students must desire the support of their peers.
Classification: Student  Values

Method: Provide web-based discussion space for each study group with clear guidelines and expectations for participation.
Classification: Asynchronous  Group  Discussion

Effectiveness: Students with reliable access and the skills to use the technology were able to collaborate. When access was unreliable, students became frustrated with each other, with the technology and with the overall program.
Condition: Reliable access (both server and client side) is available.
Classification: Technology  Access

Value: Online Collaborative Learning  Classification: collaboration
Goal: Students will collaborate in small groups.  Classification: collaboration
Method: Assign initial students groups on their order of logging in the first time, approximating student grouping by technical interest and skill.

Classification: Other Group Discussion

Effectiveness: When students were grouped with others who did not have the same technology interest or skill, unequal participation in group discussion resulted, which led to frustration and poor collaborative efforts.

Condition: Other student attributes such as gender, age, ethnicity, and educational background are not relevant to group collaboration.

Classification: Student Background

Method: Instructors check access logs and encourage students (who are not contributing to their study group discussions) by email or phone.

Classification: Asynchronous Instructor-student Personal Communication

Effectiveness: Instructors devoted quite a bit of time in the first few weeks encouraging online interactions, but by the end of the semester, almost all students were regularly participating in the online discussions.

Condition: Non-participating students must be willing to respond to email or phone messages.

Classification: Student Motivation

Method: Provide web-based discussion space for each study group with clear guidelines and expectations for participation.

Classification: Asynchronous Group Discussion

Effectiveness: Students with reliable access and the skills to use the technology were able to collaborate. When access was unreliable, students became frustrated with each other, with the technology and with the overall program.

Condition: Students are willing to use the discussion space(s) for collaborative efforts.

Classification: Student Motivation


Value: Online Collaborative Learning Classification: collaboration

Goal: Students will collaborate in small groups. Classification: collaboration

Method: Students use e-mail to communicate with each other while collaborating on group projects.

Classification: Asynchronous Group Other - Email
**Effectiveness:** Students in different time zones and those with varying expectations of work pace were often frustrated when working with collaborators who did not meet their expectations of quick message replies. A synchronous communication tool might have helped.

**Condition:** Students must be willing to set and work to agreed expectations. Instructor must be able to identify and facilitate group communication patterns.

**Classification:** Student Motivation

**Method:** Students work in small groups to complete a joint project which requires communication and file sharing among group members.

**Classification:** Asynchronous Group Collaboration

**Effectiveness:** Technical difficulties hampered communication and prevented the sharing of some files. Commonly, students were not familiar with basic word processing and internet communication tools.

**Condition:** Students must be competent in the use of basic or common word processing and internet communication software such as web browsers and e-mail programs (basic technical skills).

**Classification:** Student Skills and Ability - Technical

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**Value:** Online Collaborative Learning

**Goal:** Students will collaborate on small group projects.

**Method:** Students work in small groups to complete a joint project which requires communication and file sharing among group members.

**Classification:** Asynchronous Group Collaboration

**Effectiveness:** Some autonomous students preferred working independently. They expressed frustration at holding up their own work schedule waiting for their peers. Contributing factors were personal work schedules and family commitments.

**Condition:** Students are willing to work together in a collaborative environment.

**Classification:** Student Motivation

**Effectiveness:** Some autonomous students preferred working independently and did not consider collaboration to be a necessary aspect for completing the task. They expressed frustration at holding up their own work schedule waiting for their peers.

**Condition:** The content and learning objectives require true collaborative effort in order to achieve the desired learning.

**Classification:** Other - Content Features

Value: Online Learning Community  Classification: community
Goal: Students will collaborate on small group projects.  Classification: collaboration

Method: Assign collaborative tasks to small groups of students.

Classification: Asynchronous  Group  Collaboration

Effectiveness: Students must be ready to accept the technology used to create the learning environment and be able to function in a learning environment that is much more learner-centered than "regular" classes.

Condition: Students must be willing and technically able to participate actively.  Classification: Student  Skills and Ability - Technical

Method: Collaborative groups develop a learning contract using synchronous (or face to face) communication modes.

Classification: Synchronous  Group  Discussion

Effectiveness: This learning contract was used to establish and agree upon group behavior, interaction, and communication protocols, member roles, and contingency plans.

Condition: Group members must be willing to abide by the terms of the contract.  Classification: Student  Motivation

Effectiveness: This learning contract was used to establish and agree upon group behavior, interaction, and communication protocols, member roles, and contingency plans.

Condition: Students are able to meet to synchronously or face-to-face to create learning contract prior to the start of asynchronous collaboration.  Classification: Student  Synchronicity

Method: Instructor facilitates synchronous "conflict resolution" sessions with group members as needed.

Classification: Synchronous  Group  Discussion

Effectiveness: Students wanted the instructor to be the final arbitrator in conflict situations. The point of instructor arbitration should be specified in the learning contract. Using synchronous chat, the instructor was able to help group members resolve conflict.

Condition: Students must be willing to accept arbitration decisions.  Classification: Student  Motivation
Effectiveness: Students wanted the instructor to be the final arbitrator in conflict situations. The point of instructor arbitration should be specified in the learning contract. Using synchronous chat, the instructor was able to help group members resolve conflict.

Condition: Synchronous communication (e.g., chat) must be available for all group members.

Classification: Technology Access

Effectiveness: Students wanted the instructor to be the final arbitrator in conflict situations. The point of instructor arbitration was specified in the learning contract. Using synchronous chat, the instructor was able to help group members resolve conflict.

Condition: The instructor must have conflict-resolution skills.

Classification: Instructor Skills and Ability


Value: Online Learning Community Classification: community

Goal: Students will experience "ownership" of group discussions.

Classification: student control

Method: Direct comments and feedback within a group discussion space to the entire group even if only one student was asking for commentary.

Classification: Asynchronous Group Discussion

Effectiveness: When comments and feedback were directed to individuals, students stopped responding to their peers and focused on interactions with the instructor. However, some students still expected personal instructor commentary and individual attention.

Condition: Students must be willing to interact with the instructor as a group, and not as a collection of individuals. They must accept a group identity.

Classification: Student Values

Value: Online Learning Community Classification: community

Goal: Students will experience a sense of community.

Classification: community

Method: Form semester-long teams of students in groups of 4-6.

Classification: Other Group Collaboration

Effectiveness: Students formed strong emotional bonds with team members over the semester, often arranging face to face meetings at the end of semester on their own initiative.
Condition: Students must be willing and able to work with the same group of students for an entire semester.

Classification: Student Values

Value: Online Learning Community

Classification: community

Goal: Students will participate in online discussions.

Classification: discussion

Method: Provide team workspace for on-line discussions, chat, and file sharing.

Classification: Mixed Group Collaboration

Effectiveness: Teams used these spaces for collaboration throughout the course.

Condition: The system must support team workspaces.

Classification: Technology Features

Method: Use synchronous on-line debates for inter-group interaction on specific topics.

Classification: Asynchronous Student-student Discussion

Effectiveness: Students who did not understand how to engage in debate rhetoric did not challenge each other or create warranted arguments, leading to dull, ineffective interaction.

Condition: Students have debate skills or are willing and able to acquire debate skills. [More than one debate opportunity may be needed.]

Classification: Student Skills and Ability

Case# C125


Value: Online collaborative learning

Classification: collaboration

Goal: Students will collaborate with their peers.

Classification: collaboration

Method: Provide a CMC tool that supports multiple modes of communication, both synchronous and asynchronous, such as: chat, discussion, group e-mail, and file sharing.

Classification: Mixed Group Collaboration

Effectiveness: Using one tool provided a consistent interface and convenient access to multiple communication modes. Students were not sure how to use each mode of the tool appropriately, however. The interface seemed to favor certain communication modes.

Condition: The CMC tool provides equitable (equivalent) access to each mode of communication and provides sufficient guidance on how and when to use each mode.

Classification: Technology Features
Method: Provide a means to upload files to group on-line workspace.

Classification: Asynchronous Group File Exchange

Effectiveness: Most students simply attached files to group e-mail messages and did not use the on-line file sharing feature. Initially, on-line file sharing was used to post first drafts of group documents, but revisions were exchanged as e-mail attachments.

Condition: Students must be able (skill, access) and willing to use the file sharing space.

Classification: Student Skills and Ability - Technical

Method: Provide an online discussion space for small groups of students to use for collaborative activities.

Classification: Asynchronous Group Collaboration

Effectiveness: Students did not use the discussion board very often. The system provided a more convenient method to send group email than to access the group discussion. The discussion was useful as a threaded archive of previous messages.

Condition: The system must support group discussions with the same (or better) convenience of other communication modes.

Classification: Technology Features

Method: Require students to complete collaborative tasks using asynchronous communication tools such as discussion boards and e-mail.

Classification: Asynchronous Group Discussion

Effectiveness: Students expressed frustration when group members did not fulfill work schedule expectations. For some, family and work commitments impacted their on-line work.

Condition: Students must be willing and able to complete course work on an agreed upon schedule.

Classification: Student Time

Value: Online collaborative learning

Goal: Students will resolve conflicts of opinion among their peers.

Classification: collaboration miscellaneous - resolve conflict

Method: Provide a method for synchronous personal communication between students such as chat, phone, or facsimile (fax).

Classification: Synchronous Student-student Personal Communication

Effectiveness: Students chose personal modes of communication, primarily chat, to resolve conflicts with group members, or to discuss ongoing group conflict. Resolving these differences "off-line" helped maintain a sense of collaboration and "team" on-line.
System must support synchronous communication, or students must have access to other modes of synchronous communication such as phone or fax.

**Classification:** Technology Features

**Case# C126**


**Value:** Open discussion

**Goal:** Students will ask questions freely.

**Method:** Student questions are presented anonymously by the instructor in the live virtual classroom sessions.

**Classification:** Synchronous Instructor-student Virtual Classroom

**Effectiveness:** Students used a software feature to send questions to the instructor. Students felt more free to ask "stupid" questions. They were less worried about what their peers might think about their question.

**Condition:** The classroom software must support the ability to conceal the identity of student questioners from the rest of the students in the class.

**Value:** Creating a virtual classroom

**Goal:** Students will experience a "virtual" classroom learning environment.

**Method:** Use a synchronous, virtual classroom with presentation slides, streaming audio, and text CHAT for regular live class sessions online.

**Classification:** Synchronous Instructor-student Virtual Classroom

**Effectiveness:** Students enjoyed this format, reporting that they felt more connected to the instructor when they were able to hear his voice. However, slow dial-up connections, incorrect software settings, and unreliable server connections caused intermittent problems.

**Condition:** Reliable network audio technologies (server, software, hardware, and technical support) must be available and accessible.

**Method:** Use a virtual classroom session for instructor feedback and live, summative class discussion about project ideas.

**Classification:** Synchronous Instructor-student Virtual Classroom

**Effectiveness:** The instructor was only able to read about 200 of 1200 student project idea discussion posts throughout the semester. Students created a synthesis post for the instructor, summarizing the peer discussion about their project idea.
Condition: Students are able to create a synthesis of the online discussion regarding their project idea.

Classification: Student Skills and Ability

Effectiveness: The instructor was only able to read about 200 of 1200 student project idea discussion posts throughout the semester. Students created a synthesis post for the instructor, summarizing the peer discussion about their project idea.

Condition: Students must be willing and able to attend the live online session.

Classification: Student Synchronicity

Value: Peer helping
Goal: Students will help each other complete course projects.

Method: Provide a web-based discussion board for students to post project ideas and provide peer feedback on other's projects.

Classification: Asynchronous Student-student Review and Feedback

Effectiveness: This discussion approach was very effective. Over the course of the project timeframe, each project idea thread received an average of 16 messages. Virtually all students projects were shaped by these discussions.

Condition: Students must be willing to read, critique, and share feedback about several peer project ideas.

Classification: Student Motivation

Value: Individualized instruction
Goal: Students will receive individual help from the instructor.

Method: Use synchronous chat for live instructor office hours.

Classification: Synchronous Instructor-student Discussion

Effectiveness: In three semesters, only two students ever showed up online for discussions with the instructor. The instructor will not use this method again.

Condition: Students must have the desire and ability to meet online at a pre-specified time to discuss class-related issues with the instructor.

Classification: Student Motivation

Level: graduate
Topic: The Virtual University

Value: Peer-peer interaction
Goal: Students will engage in peer-peer learning.
Method: Students are required to post one exercise submission and at least one peer comment for each course topic. Participation is rewarded through the course grading policy.

Classification: Asynchronous Student-student Review and Feedback

Effectiveness: The level of student participation increased as the course progressed, though the depth of comments may have decreased. Students were able to significantly improve their grade by increasing their participation without regard to the quality of their posts.

Condition: Students are motivated by grades.

Classification: Student Motivation

Effectiveness: This method resulted in over 2600 peer-generated listserv posts throughout the course, a ten-fold increase over previous course offerings.

Condition: The system must be able to track student participation.

Classification: Technology Features

Method: Students post weekly exercise solutions on the course website for their peers to review and comment upon in the course listserv.

Classification: Asynchronous Student-student Review and Feedback

Effectiveness: During the course, only 5 of 247 listserv posts included peer feedback on exercise solutions. This method did not create any significant peer interaction.

Condition: Students must be willing and able to review peer coursework and offer feedback on a timely basis.

Classification: Student Motivation

Effectiveness: Since students were allowed to post late exercise solutions, often several weeks after the scheduled due date for the assignment, many weekly assignments were not posted until the last weeks of the course, precluding effective peer review and feedback.

Condition: Students must post assignments on time and access the course website regularly to review peer work and offer feedback.

Classification: Student Synchronicity


Level: graduate Topic: Swedish Energy Issues

Value: Problem-based learning Classification: learning theory

Goal: Students will collaborate using the PBL process in small groups. Classification: collaboration

Method: Provide an asynchronous discussion space for collaborative groups.

Classification: Asynchronous Group Discussion
Effectiveness: This method proved to be very inefficient, requiring several days of discussion for groups just to reach agreement on moving on from step to step.

Condition: Students are able to participate in the discussion frequently and regularly (at least daily).

Classification: Student Synchronicity

Effectiveness: Since all students in this course were all employed fulltime and completed coursework in their "free" time, it was virtually impossible for all of them to log in simultaneously. Many students had difficulty finding the time to participate frequently.

Condition: Students have the time available to complete collaborative coursework and participate in group discussions.

Classification: Student Time

Effectiveness: Some students did not participate regularly, which delayed their group for several days while they waited for group consensus before moving on to the next phase of the problem solving process.

Condition: Students must agree and meet group expectations for participation frequency and coursework progress.

Classification: Student Motivation


Level: graduate Topic: BioComputing

Value: Active Learning Classification: learning theory

Goal: Students are actively engaged in regular small group learning interactions. Classification: collaboration

Method: Form discussion groups with a mix of student discipline backgrounds (Computer Science and Biology).

Classification: Synchronous Group Discussion

Effectiveness: Including students with both of the major content disciplines in each discussion group provided a broad basis for discussion and helped ensure that all major aspects of course assignments and topics were discussed.

Condition: Sufficient students with varying academic background are available to distribute equitably among discussion groups.

Classification: Student Background

Method: Form student discussion groups by time zone.

Classification: Synchronous Group Discussion

Effectiveness: Grouping students by time zones made it more convenient for all students in the group to meet at the scheduled time.
**Condition:** Students are able to meet at the scheduled time.

**Classification:** Student Synchronicity

**Method:** Post transcripts of discussion group meetings for student review and further topical discussion during the following week.

**Classification:** Asynchronous Group Discussion

**Effectiveness:** Since some students were not able to meet at the scheduled time, it was very valuable to have a transcript of the discussion group meeting available for review and further discussion. Some discussion topics were pursued further by the group via email.

**Condition:** The system must allow the accessible posting of synchronous discussion transcripts.

**Classification:** Technology Features

**Method:** Schedule weekly synchronous small group discussions to discuss course assignments and related topics.

**Classification:** Synchronous Group Discussion

**Effectiveness:** Scheduled, synchronous meetings helped students keep on task by providing a regular stimulus to motivate their assignment progress. Instructors were successful in encouraging student participation throughout each study group session.

**Condition:** Students are willing to prepare for and attend scheduled meetings.

**Classification:** Student Motivation

**Value:** Active Learning

**Goal:** Students are aware of the major topics of discussion among the students in the other discussion groups.

**Classification:** learning theory discussion

**Method:** Each study group sends a periodic intergroup summary report to the other groups, highlighting the major topics of their own discussion and important conclusions they may have reached.

**Classification:** Asynchronous Group Discussion

**Effectiveness:** Intergroup summary reports provided an opportunity for each student to keep up with the major topics of discussion and the "rich discoveries" of the students in the other discussion groups.

**Condition:** Students are willing and able to summarize their group discussion.

**Classification:** Student Motivation

**Value:** Active Learning

**Goal:** Students are part of a learning community that extends beyond the formal class members.

**Classification:** learning theory community
Method: Provide synchronous, interactive guest lectures from distinguished researchers.

Classification: Synchronous  Student-external  Discussion  expert

Effectiveness: During the lecture, students were able to discuss information and engage outside experts which were not normally available to them. Lecturers were successful in involving students in the lectures through interactive questioning practices.

Condition: Lecturers are willing and able to use interactive questioning techniques in a synchronous online environment to engage students during a lecture.

Classification: External  Skills and Ability  Resource

Effectiveness: During the lecture, students were able to discuss information and engage outside experts which were not normally available to them. Lecturers were successful in involving students in the lectures through interactive questioning practices.

Condition: Outside experts are available.

Classification: External  Access  Resource

Effectiveness: During the lecture, students were able to discuss information and engage outside experts which were not normally available to them. Lecturers were successful in involving students in the lectures through interactive questioning practices.

Condition: Outside experts can meet at the scheduled meeting time.

Classification: External  Synchronicity  Resource


Value: Self-directed learning  Classification: learning theory

Goal: Students will engage in thoughtful dialogue with each other.

Classification: discussion

Method: Provide weekly feedback to each student regarding their participation in course discussions.

Classification: Asynchronous  Instructor-student  Review and Feedback

Effectiveness: Students were able to receive feedback about their posts, contributing to an overall high quality of posts in the discussions.

Condition: Instructor has the time to read, evaluate, and generate feedback to each student each week.

Classification: Instructor  Time
Method: Students participate in topical discussions as a core (fixed) part of one specific discussion group and as a rotating (temporary) member of one other discussion group.

Classification: Asynchronous Group Discussion

Effectiveness: Student posts responding to others' posts were thoughtful and frequent. Most students surpassed the pre-specified interaction requirements. The questions used did not require significant student-student interactivity.

Condition: Students are willing and able to participate regularly in group discussions early enough in the allotted timeframe to allow for interaction.

Classification: Student Synchronicity

Effectiveness: Student posts to the forum were focused on course content and were completed within the time guidelines established by the instructor. Some students did not value the content discussion activities, while others enjoyed them.

Condition: Students are willing to participate thoughtfully in discussions.

Classification: Student Motivation

Method: Use instructor-generated prompts to begin weekly student-student discussions.

Classification: Asynchronous Group Discussion

Effectiveness: Carefully crafted discussion prompts were effective in initiating useful and non-redundant student responses.

Condition: Instructor is able to create effective discussion prompts.

Classification: Instructor Skills and Ability

Value: Self-directed learning

Classification: learning theory

Goal: The instructor maintains active communication with students.

Method: Instructor communicates weekly with all students as a group using the web-based "instructor communication center."

Classification: Asynchronous Instructor-student Other - Broadcast Message

Effectiveness: The weekly message from the instructor helped students assess whether they were making sufficient course progress on a regular basis.

Condition: Students must access website weekly.

Classification: Student Access

Method: Instructor communicates with students via email throughout the course.

Classification: Asynchronous Instructor-student Personal Communication

Effectiveness: Students corresponded with the instructor frequently regarding course assignments.
Condition:  Students must be able to use email reliably.

Classification:  Student  Skills and Ability