Building a Dynamic Online Learning Community among Adult Learners

Minjuan Wang, Christina Sierra and Terre Folger, USA

Abstracts

This article examines the nature of learning communities constructed among a diverse group of adult learners in an online graduate-level course. The course engages students in both independent and team tasks to complete several project deliverables. The 21 students enrolled in this online course came from across the USA and countries as far away as Hong Kong, Japan, Argentina and Venezuela. Students and their instructor communicated via a variety of computer-mediated communication (CMC) tools, including synchronous webcasts and chat sessions and asynchronous e-mail and discussion boards. Discourse artefacts, student profiles, survey responses, and project evaluations were content analysed for evidence of the formation of learning communities, particularly for evidence of three markers: participation, shared identity and the establishment of a social network. This action research also generates pedagogical implications for promoting adult learners’ active participation in online learning and instructional strategies to facilitate the community-building process.

Introduction

Traditionally ‘community’ has referred to geographic communities of people living in close proximity or ‘communities of interest’, those with shared interests such as members of an organization (Putman, 2000). The successful construction of a community in the traditional sense is a social network marked by participation, trust, shared interests and values, shared responsibility, norms and rituals, and by the ability to embrace differences while forming a group identity (Lave and Wenger 1991; Putnam, 1995, 2000; Westheimer, 1998; Calderwood, 2000).
Rovai (2001) stated that community is setting specific and theorized the four components of ‘classroom community’ as spirit (feeling of group identity), trust (feeling of safety and support), interaction (task-related and socio-emotional) and learning (the construction of shared knowledge).

The emergence of online communities provokes reassessment of the fundamental nature of community. Research in the past decade has revealed the educational value of online learning communities. Rovai (2001) suggested that online learning increases information exchange, mutual support, group commitment, collaboration, and satisfaction with learning experiences. Because participants in most CMC rely heavily upon their verbal and linguistic behaviours to reveal information about opinions and attitudes (Harasim, 1990; Romiszowski and Mason, 1996; Adrianson, 2001), recent studies (e.g. Rodino, 1997; Markel, 1999; Arbaugh, 2000; Rovai, 2001; Flanagan et al., 2002; Moore, 2002) on learning communities have commonly addressed the dynamics of online discourse. In particular, these studies underscore gender differences and discourse (interaction) styles and their effects on participation and community.

Several studies contested that males and females’ perceptions on online learning and their communication patterns affected the equity of participation in both traditional and online environments (Rodino, 1997; Blum, 1999; Rovai, 2001; Holland, 1994). Rodino (1997) noted that women tend to display social interdependence more often than men during online conferences. Arbaugh’s (2000) study of an online course revealed that men placed more emphasis on the competitive aspects of the course as the term progressed, while women viewed the virtual classroom as an opportunity for collaboration and networking and valued the collaborative environment. Blum’s (1999) study on 149 online students indicated that gender differences in communication tones (elegance vs. ‘roughness’) and learning styles (connected vs. separate) resulted in the inequality of female participation, measured by the type, number and length of messages posted. In a study of the community building in a five-week graduate-level distance course, Rovai (2001) discovered that females wrote messages using a ‘connected’ (socio-emotional, interdependent) vs. ‘independent’ (autonomous) voices and manifested a stronger sense of community than their male counterparts. These important findings justified the necessity to create an equitable CMC-based distance learning environment and activities that accommodate different learning styles and preferences. Such an environment would engage females in collaborative learning but also accord males ‘the freedom of learning in an abstract, autonomous’ learning style (Blum, 1999, p. 8).

Besides gender, culture is another factor that has been under examination. Culture is defined as ‘values, beliefs, and practices shared by a group of people’ (Ziegahn, 2001, p. 1) and is recognized as an important factor influencing learning behaviour and approaches. Amant (2002) noted that cultural expectations could affect communication patterns and manner of information presentation. McLoughlin (1999) advocated for culturally responsive uses of technology and instructional strategies. She noted that instruction should strive to accommodate cognitive styles and preferences of learners of diverse cultures.

This study extends these lines of research as we examine how a diverse group of adult learners form community. Researchers analysed discourse artefacts, survey responses, online profiles and project evaluations to address the following questions: (a) can community form in an online setting that involves international participants who are distributed around the globe, (b) are there any discernible gender differences in participants’ interactions and (c) do these differences impact the sense of community? Cultural difference was not identified as a focus of this study, because 17 of the 21 students were from the USA.

Preece (2000) identified the most important characteristics of an online community as social interaction, shared purpose (an interest, need or service), policies of engagement (rituals, protocols, rules) and computer systems operating to support and mediate these functions. Wang, Poole and Chan (2002) identified participation, shared identity and the establishment of social network as the markers of community building. They derived these markers from previous research about community, in general, and online community (e.g. Lave and Wenger 1991; Putnam, 1995, 2000; Westheimer, 1998; Calderwood, 2000; Preece, 2000), in particular. In this study, we use the three markers (participation, shared identity and social network) to determine if communities were formed in this online learning environment. In particular, we compare male and female participation by the number and content of the messages posted. We also categorize the interaction styles of males and females in chat sessions. In addition, we examine the social network established and report the participants’ perceptions of their online discussions, teamwork, and sense of community.

This study contributes to the growing knowledge base on the formation of online learning communities and generates pedagogical implications for promoting adult learners’ active participation. Implications from the study include instructional strategies to facilitate the community-building process and guidelines for instructors to effectively conduct collaborative learning experiences in CMC.
Research method

Setting and participants

The setting for this study is an introductory instructional design course focusing on the systematic design of products for education and training. The course engages students in both independent and team tasks as they complete several project deliverables. Students’ development efforts culminate in a proposal for an instructional product and a report on prototype development and testing efforts. During the course, students assume the role of contractors as they interact with a cast of characters from a hypothetical educational design company that offers a wide range of educational products for corporate training markets and public schools.

Twenty-one students (12 females and nine males) enrolled in this online course came from across the USA (17 of 21) and countries as far away as Hong Kong (1), Japan (1), Argentina (1) and Venezuela (1). Although the participants’ professions were diverse, ranging from life skills teacher to e-business user and support analyst, they were all involved in training and education. In addition, the group was mature in terms of age (mean 37 years) and experienced with online learning (e.g. have taken at least one online course from a US higher education institution).

Online learning tools

In this course, the students and their instructor communicated in English via a variety of synchronous or asynchronous tools. Live webcasts were coupled with live chat sessions through the DigiChat system, listserv e-mail distributed messages to subscribers, discussion boards (Instructional Design Café) supported the posting of short messages and, occasionally, participants communicated through telephone conversations.

Webcast is similar to an online radio (e.g. NPR, Smooth Jazz) that streams live audios from the Internet. The instructor produced the webcasts from her computer with RealProducer. The broadcasts were able to accommodate a variety of receiving bandwidth, from 28.8 dial-up connections to cable modems. Students listened to the live webcasts through RealPlayer and entered the DigiChat to interact online simultaneously. Both RealAudio webcasts and chat transcripts were archived on the course website for students to review independently after each session. Figures 1–3 capture the main communication tools of this course: Webcast and DigiChat.

![Figure 1 Webcast and online chat system](image-url)
Figure 2 DigiChat settings

Figure 3 DigiChat window
The DigiChat system allows participants to set a profile, pick avatars and select nicknames for themselves. The system associates these markers with the messages typed in the chat room. It also allows participants to customize their message scroll speed and the aesthetical appearance of their messages in terms of font, size, style and colour. The system informs participants of ‘who is in the chat room’ by showing a user list on the right panel. In addition, individuals can whisper to each other by clicking on names from the user list, so that they can conduct side conversations alongside the mainstream discussion.

The class listserv was established as a forum for students and the company characters played by the instructor and her invited colleagues. The company staff and officers sent official correspondence to the listserv, such as requests for project proposals, contract awards and response to projects. The instructor also participated weekly as ‘herself’, distributing important notices and the class newsletters.

In order to accommodate students’ varied time zones and schedules, the instructor held redundant webcasts twice a week for eight weeks. The participants consistently attended one of the two sessions each week. One session had seven males and six females; the other session had two males and six females.

**Data collection and analysis**

In this action research, the researchers (including the instructor) collected data primarily through observing the streaming audio webcasts and archiving the live chat discussions, in which most of the visible communications took place. Online observation provided a ‘bird’s eye-view’ of the instructor’s online facilitation, discussion milieu and pictorial elements (e.g. avatar) not represented in the transcripts. The observations were critical for interpreting the chat discussions, which were connected to the instructor’s webcasts. In addition, the researchers conducted content analysis of the instructor-distributed weekly newsletters, students’ online profiles and their self- and peer-evaluations of project deliverables. The instructor’s newsletters summarized weekly discussions and activities and provided guidance for independent and team tasks.

The instructor sampled two sessions out of the chat sessions that occurred concurrently with the audio webcasts. The chats were held around the eighth week of this 16-week course and each lasted about 90 minutes. The two sessions had different participants, but involved the same discussion topics and similar online activities. The instructor selected these two transcripts because of their completeness and independency. In both sessions, the discussions were held primarily in chat while the webcasts remained at the background as a facilitating tool. In addition, the two transcripts were representative of the participants’ online discussions in that they included a variety of discussion formats (e.g. social interactions, information exchange, questioning-answering, interactive presentations, and peer reviews of these presentations). Near the end of the semester, researchers distributed a questionnaire to the students. It surveyed their perceptions of the online discussions, asked for their self-rated participation levels, perceived sense of community and feedback concerning their satisfaction with teamwork.

Researchers conducted content analysis of the chat transcripts both qualitatively and quantitatively. Using Microsoft Word 2000 (Microsoft Corporation), two researchers first used open coding (Strauss and Corbin, 1998) to individually code the transcripts. The researchers then synthesized the codes to develop a coding scheme, established interrater reliability (>80%) and used the now identified scheme to systematically code all sampled data. The researchers also conducted qualitative content analysis of the newsletters, discussion board postings, student profiles, and the students’ self- and peer-project evaluations. This analysis identified major themes and patterns as related to community forming.

Synthesizing coding schemes from related research (Markel, 1999; Adrianson, 2001) with their own, the researchers generated the coding categories as indicated in Table 1. One discourse unit, an individual’s typed input in this case, could be associated with multiple codes.

**Findings**

We find ample evidence of community forming from online observations and analysis of the sampled discourse artefacts, student profiles, survey responses and project evaluations. In particular, we find evidence for the three markers of community forming: active participation, the forming of shared identity, and the establishment of social network. We did not note any significant gender or cultural differences in the discourse artefacts.
**Participation**

Participation is a fundamental marker of community that has been assessed by CMC researchers from different perspectives. Synthesizing previous research findings (Hiltz *et al.*, 1986; Wang, Poole and Chan, 2002), we assessed levels of participation in this course by examining participants’ discourse (i.e. interaction) styles as related to gender differences. We continued to use attendance and content of communication as indicators of participation. The content of communication is measured by the frequency (percentage and number) of substantial message exchanges. Substantial messages exclude greetings (e.g. 'hi, hello, howdy') and courtesy words (e.g. 'thank you, good-bye').

Levels of participation. The course activities and various communication channels the online system provided used the interactive properties of the Internet and its ability to foster community and global connectivity. The DigiChat system was used most frequently because of its association with the eight webcasts students attended. The listserv e-mail was used for distributing longer messages and had the advantage of reaching the entire class at once. Although the listserv was intended to be a student tool, most of the posts were originated by the instructor and the company characters in sending clarifications, updates, debriefing newsletters and other administrative issues. In contrast, the Café (discussion board) monitored by the instructor was used more by the students for short exchanges. There were approximately 105 messages posted and each message ranged from 20–50 words. The Café discussion threads included project ideas, presentation scheduling issues, technical help needs, comments on webcasts and questions on specific course contents.

A great majority of the students consistently attended the webcasts and chat sessions. Because the webcast is a one-way broadcast from the instructor to the students, live chat via DigiChat afforded the students the opportunities to interact with the instructor and the others during the webcast. We analysed the two representative chat sessions and examined students’ participation levels both quantitatively and qualitatively.

The percentage and number of substantial messages posted in the two chat sessions by male and female students indicate their respective levels of participation in synchronous discussions. The literature supports this method of participation assessment. For instance, Blum (1999) measured students’ rate of participation by categorizing and counting number of messages posted by gender. Our coding analysis revealed that female participants’ frequency of message posting (57% of total exchanges) exceeded that of the male participants (43%). However, on-task messages were closer in number, with messages posted by males at 48% and females at 52%. Of all the on-task messages, males were more likely to discuss information (60%) while females were more likely to express opinions (85%) and ask/answer questions (79%). Remarkably, 69% of the social interactions occurred among females. It seems that both males and females were active in participation, but communicated differently. Table 2 as follows indicates the total exchanges tabulated by coding categories (female vs. male).

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**Table 1 Coding categories and interaction styles**

<table>
<thead>
<tr>
<th>Coding categories and definitions</th>
<th>Interaction styles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information</strong>: statements made to make a point or to clarify related issues.</td>
<td>Exchanging resources and information</td>
</tr>
<tr>
<td><strong>Opinion</strong>: statements reflecting participant’s personal views, an interpretation or inference from the discussion.</td>
<td>Voicing opinions</td>
</tr>
<tr>
<td><strong>Suggestion</strong>: statements made to solve a specific problem.</td>
<td>Offering suggestion</td>
</tr>
<tr>
<td><strong>Summary</strong>: recapture or reiteration of discussions.</td>
<td>Synthesizing ideas or discussions</td>
</tr>
<tr>
<td><strong>Questioning-answering</strong>: questions asked and answers provided.</td>
<td>Asking or answering questions</td>
</tr>
<tr>
<td><strong>Negotiation</strong>: attempts in reaching consensus</td>
<td>Negotiating</td>
</tr>
<tr>
<td><strong>Argumentation</strong>: attempts in imposing one’s opinions on others.</td>
<td>Arguing</td>
</tr>
<tr>
<td><strong>Agreement and disagreement</strong>: assertions within topics of discussion.</td>
<td>Agreeing, disagreeing</td>
</tr>
<tr>
<td><strong>Motive</strong>: motives implied when supporting a suggestion.</td>
<td>None</td>
</tr>
<tr>
<td><strong>Metc Comm</strong>: statements referring to the process of communication itself, especially teamwork strategies.</td>
<td>Reflecting on communication or teamwork</td>
</tr>
<tr>
<td><strong>Social interactions</strong>: non-task related discussions</td>
<td>Socializing</td>
</tr>
</tbody>
</table>
Discourse styles. A repeated measures ANOVA (Analysis of Variance) was used to test the statistical difference between gender and discourse style as indicated by the 11 coding categories. The results indicate that there was no statistically significant interaction between the two variables \( F = 0.685, \text{df} = 1, 10; \ p = 0.7380, a = 0.05 \). Nonetheless, there were highly significant differences in the overall discourse styles indicated by the 11 categories \( F = 14.086, \text{df} = 1, 10; \ p < 0.0001, a = 0.05 \). These differences indicate that the participants, regardless of their gender, used some of the interaction styles more often than they used others. A post-hoc analysis (Fisher’s PLSD) reveals that there were significantly higher amounts of social interaction, information exchange and offering suggestions \( p < 0.0001, a = 0.5 \). In contrast, there were very few negotiations and no argumentation among the discussants.

Discourse styles and participation. Female participants in both sessions demonstrated eagerness to continue socializing and to remain connected. In contrast, male participants initiated more task-related thoughts and ideas (i.e. presentations) and did not stay too long once the session was over. Nonetheless, we did not find any direct impact of interaction styles on levels or equality of participation.

Negotiating differences while forming team identity

In order to build a global learning community, teams must demonstrate positive attitudes and behaviours to leverage diversity and to apply their different resources to learning tasks (DeSanctis et al., 2001). A major challenge for the distributed, multicultural groups was to maintain a sense of ‘we’ despite geographic separation and individual differences. As demonstrated in the Motorola Expeditions, an online ‘summer camp’ engaging teenagers in collaborative problem solving, successful teams took the time to visibly build a sense of positive group identity (Wang, Poole and Chan, 2002). The Expeditions teams conveyed a sense of team spirit in their everyday communications with one another. Higher performing teams used nicknames to refer to their team (e.g. ‘We are the Chargers’), thus building camaraderie online. They also posted public comments to openly express their positive feelings about one another, such as ‘I feel fortunate to work with such a great group’. In the following, we investigate how team members in this course negotiated individual differences while establishing team identity.

Teamwork and shared identity. The project assignments of this online class strike a balance between individual and collaborative teamwork. Most of the formal collaboration occurred in the middle of the semester when teams were developing specifications for their proposed ‘instructional systems’. Figure 4 visualizes the alternation between individual and teamwork.

The participants started with individual work in conducting a needs assessment for an instructional product. In the fourth week, the instructor assigned the students to teams of two-three based on the proximity of their design interests. From then on, they collaboratively generated a product specification, prototyped parts of it and reported on their prototyping results.

### Table 2 Total exchanges tabulated by coding categories (female vs. male)

<table>
<thead>
<tr>
<th>Category</th>
<th>Female (12)</th>
<th>Male (8)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information</td>
<td>43 (40%)</td>
<td>64 (60%)</td>
</tr>
<tr>
<td>Opinion</td>
<td>33 (85%)</td>
<td>6 (15%)</td>
</tr>
<tr>
<td>Suggestion</td>
<td>6 (100%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Summary</td>
<td>17 (59%)</td>
<td>12 (41%)</td>
</tr>
<tr>
<td>Q&amp;A</td>
<td>41 (79%)</td>
<td>11 (21%)</td>
</tr>
<tr>
<td>Negotiation</td>
<td>8 (80%)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>Argumentation</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Agree/Disagree</td>
<td>17 (63%)</td>
<td>10 (37%)</td>
</tr>
<tr>
<td>Motive</td>
<td>1 (100%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Metacommunication</td>
<td>22 (69%)</td>
<td>10 (31%)</td>
</tr>
<tr>
<td>Social interactions</td>
<td>107 (69%)</td>
<td>48 (31%)</td>
</tr>
<tr>
<td>Total exchanges</td>
<td>177 (57%)</td>
<td>131 (43%)</td>
</tr>
</tbody>
</table>

*One male student was absent from that week’s webcast and chat sessions.
The class was divided into seven teams. Members of the same team were required to review each other’s work and decide upon one project to carry forward to the design, development, and prototyping stages. Although there was spare negotiation in these large-group chat sessions, negotiation occurred in discussions held by individual teams outside webcasts and chat sessions. Two teams held private team meetings in DigiChat and invited the instructor to attend their meetings and assist them with decision-making. One team consisted of three dynamic individuals that live in different parts of the USA and had different job titles, such as instructional designer, book author and multimedia developer. Their individual project ideas all received high ratings from the peers and the instructor. Thus, the team went through active negotiation to determine the best project to pursue and the instructional goals and objectives of the project. The team leader started the session by acknowledging team members’ different styles. The two members indicated their agreement with her and their willingness to ‘work things out’. They then debated the criteria (causing car accident) used in a learning objective for driving. One member thought that was a ludicrous criterion. The other team member argued from personal experience, ‘Where I grew up, men detecting pheasants on the roadside when there were guns in the car could cause all sorts of accidents. :-) I am a country girl’. Team members continued to give input and the team leader summarized the discussion and developed a plan of action for the team. The team synergized the three projects taking the best from their individual efforts.

The forming of team identity was apparent during team presentations. Most teams introduced themselves by the name of the project they were working on, such as the ‘Outlook’ team, the ‘Woman Entering Workforce’ team and the ‘High-School Graduate Job-Seeking’ team, etc. Team members used ‘we’ frequently during the presentation as in the following comments: ‘we also see this as part of a larger programme that could include additional training’, ‘additionally, we include the learner’s lack of a business background and a need for exposure to corporate environment’ and ‘we considered the factors…’. The use of ‘we’ revealed the inclusion of all team members in decision-making.

A great majority of the participants respected and valued others’ work. Many of the class deliverables involved self and peer-evaluation, which was intended to help members familiarize themselves with others’ work and to select the best project for the next stage. The instructor noticed that individuals generally rated team mates’ work higher than their own work. It was evident that the teams maintained a collaborative rather than competitive stance. There was no visible occurrence of excesses of niceness or incivility such as flaming. Evaluators were candid but diplomatic when framing suggestions and criticism. Clearly, respect for others and valuing of others’ ideas contributed to the building of a supportive learning community.
Instructor facilitation of teamwork. The instructor of this course intentionally prompted individuals to lead small groups and to network with a diverse group of people. Students achieved these goals through the design and implementation of teamwork, such as clarification of teamwork expectations, the designation of team leader, suggestions for effective team meeting and collaborative team presentations.

In the ‘Teamwork Advice’ newsletter, the instructor clarified that she did not expect four-person teams to do better work than three-person teams because of the efforts involved in co-ordinating four people. The newsletter also included an agenda detailing tasks that teams needed to complete in the following three weeks. Assuming the tone of a manager from the hypothetical company, the instructor recommended the appointment of the four roles (co-ordinator, time keeper, recorder and critic) to improve teamwork efficiency and provided guidance on time allocations for team tasks and team meeting responsibilities. Moreover, the instructor cautioned the teams to maintain a ‘sane’ climate by keeping the meetings crisp, upbeat and task-focused. Longer and more intense team projects usually require some processing time for deeper emotional issues (bonding, power, loyalty, consideration, respect). The impact of the teamwork guidance is evidenced by the many positive peer evaluations within each team.

The establishment of social network

Another indicator of community forming is the social network established among participants. Social network is the foundation for trust building among team members. A team’s trust building is closely related to building group identity (DeSanctis et al., 2001). Trust is communicated through sharing personal emotions and expression of belief in others’ competencies. Trust channels the energy of group members toward reaching goals and serves to motivate group processes and performance.

Similar to many other online courses, this class started with people scattered around the globe. They came online for 16 weeks and conducted lively and useful discussion via chat, café and the listserv e-mail. They built a virtual network that transcends both geographical and cultural boundaries.

Student profiles. Student profiles reveal a great deal of personal and professional information. The instructor developed a password-protected website to display students’ profiles. Some allowed the instructor to link to their personal websites. Some others wrote a blurb about themselves. They also had the option to provide a photo for the profile. Thirteen of the 21 shared their photos and only two out of 21 chose not to be present on the profile page.

The profile page became an ‘ice-breaker’ in the first several weeks’ discussions. Participants attempted to get acquainted with each other, and the profiles provided personal and critical information for them to start a conversation. Most students talked about their current profession, future career goals, their personal lives and expectations of the course. Many of the profiles included vivid descriptions of the students’ active lifestyles and hobbies. Some also made comments about their expectations of forming community, such as ‘I look forward to the camaraderie and insight that I am certain this class will provide’. The profile page also saved time in various online meetings, since introductions were not necessary. Some participants even used the profile page to become familiar with class members’ background and identify classmates on their teams.

Discourse evidence. Online interactions cultivated the social network. A clear pattern shown in most of the 16-week chat transcripts is the presence of social interactions at the beginning and end of each chat sessions. In particular, sessions that had more female participants seemed to have longer portions of socio-emotional exchanges. A solid social network encourages uninhibited straightforward but respectful manners of interaction, which in turn contributes to the sense of sharing, belonging, and community (Wang et al., 2002). Social interaction also produces better and more satisfying decisions than a simple sum of individual contributions (Hiltz et al., 1986).

Although the private ‘whispering’ conversations between individuals were not recorded, the instructor reported receiving frequent ‘whispers’ that were mostly individual questions or concerns. Her prompt ‘whispering’ back ensured the attentions that an individual desires in a whole-class meeting. The chat system therefore creates ample opportunities for the participants to present themselves publicly and more privately.

During our online observations of the chat sessions, we noticed that participants used these chat functions frequently to establish a pleasant social milieu. Most participants picked one avatar and stayed with that avatar during the chat sessions. In most session, participants shared personal information with one another, such as events in their work lives or families. In this way, they built friendships and a sense of mutual understanding and
respect. Positive emotions expressed online helped build trust. Students expressed and resolved negative feelings via other means such as talking to the instructor.

Emoticons and acronyms. A major type of socio-emotional interactions online are emoticons such as :-) happiness, sarcasm or joke, :-( unhappiness, :-\ confusion or scepticism, :@ shock or screaming, and acronyms such as LOL (laugh out loud), and ROFL (rolling on the floor laughing). Emoticons were found to be visible cues of participants’ emotional engagement in an online environment. Larger amount of emoticons and acronyms reflect higher levels of engagement (Wang, Rossett and Wangemann, 2002).

We found about 15 :-), 10 LOL and two ROFL in the two chat sessions. There were no negative emoticons. We also noted the occurrence of Emoticons in several other chat sessions during our online observations. For instance, one participant sent a bouquet of roses (–<-<@–<-<@–<-<@–<–<@–<-<@–<-<@–<-<@–<-<@–<-<@–<-<@–<-<@) to the chat room during the webcast session scheduled on Valentine’s Day. The emoticons occurrence in this online course indeed added social-emotional colours to the chat discussion, but no benchmark has been established between Emoticons frequencies and participation levels.

Survey results from the participants: communication and teamwork

The survey responses provided by the 10 respondents had high consensus (80%) and corroborate the researchers’ observation and ANOVA test. In general, the respondents agreed that they were active in the online discussions, but could have participated more. They enjoyed the webcasts, online discussions and collaboration. The majority of the responses to the survey questions were positive (agree, strongly agree) with no negative responses (disagree, strongly disagree). In particular, respondents unanimously felt comfortable with the manners of discussion (e.g. netiquette, respectfulness, etc.) that this class demonstrated. In addition, they reported that they enjoyed teamwork and valued networking and collaboration.

There were not any noticeable cultural differences in students’ perceptions of ways of working – being collaborative or competitive. A predominant majority of the respondents (90%) did not notice any gender differences in the class discussions. Ninety percent of the respondents also perceived negotiation and debate as acceptable ways of communicating with classmates and the instructor. But only 80% felt comfortable expressing opinions that differed from the instructor’s opinions. Ninety percent of the respondents enjoyed teamwork and felt that classmates valued their input. Table 3 as follows displays the participants’ perceptions of online discussions and teamwork in details.

<p>| Table 3 Participants’ perceptions of online discussions, teamwork, and community |</p>
<table>
<thead>
<tr>
<th>Survey questions</th>
<th>No. (%) of respondents (10) agreeing and strongly agreeing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I enjoyed attending webcast and online chats.</td>
<td>80</td>
</tr>
<tr>
<td>2. I was comfortable with the manners of discussion (e.g. netiquette, respectfulness, etc.) that this class demonstrated.</td>
<td>100</td>
</tr>
<tr>
<td>3. Negotiation and debate are acceptable ways of communicating with classmates and the instructor.</td>
<td>90</td>
</tr>
<tr>
<td>4. I felt comfortable expressing opinions that differed from the instructor’s.</td>
<td>80</td>
</tr>
<tr>
<td>5. I enjoyed collaborating with others online in team activities.</td>
<td>90</td>
</tr>
<tr>
<td>6. My classmates valued my input.</td>
<td>90</td>
</tr>
<tr>
<td>7. My questions/concerns were addressed in a timely manner.</td>
<td>100</td>
</tr>
<tr>
<td>8. I think I have been very active in class discussions.</td>
<td>70</td>
</tr>
<tr>
<td>9. I could have participated more in online discussions.</td>
<td>60</td>
</tr>
<tr>
<td>10. I felt that I was part of the learning community and willing to maintain its growth.</td>
<td>80</td>
</tr>
<tr>
<td>11. I didn’t notice any gender differences in our class discussions.</td>
<td>90</td>
</tr>
<tr>
<td>12. I enjoyed teamwork, and valued networking and collaboration.</td>
<td>100</td>
</tr>
</tbody>
</table>
Discussion

Factors and strategies contributing to the formation of learning communities

This study did not reveal any significant gender differences in discourse styles and participation in this graduate-level online class. Instead, the maturation and experiences of the students and the instructors’ online facilitation contributed to the community forming. Most of the students in this class are experienced with the American educational system and proficient with CMC in English. Their online exchange reflected that experience and did not represent any distinctive cultural differences. However, the overall discourse style showed differences in that participants used some of the interaction styles more often than others, i.e. social interactions and information exchange vs. negotiation.

Although participants perceived negotiation as an acceptable way to communicate, they did not negotiate much in the discussions. Because of the many benefits of negotiation and argumentation in community-building, such as strengthening social ties among a group of learners, online instructors should structure the course so that meaningful negotiation in online discussions is a necessity for success. This study evidences that collaborative projects promote this type of engagement.

This study also provides support for Hiltz’s (1998) argument that collaborative learning strategies helped to maintain the sense of community and are crucial for creating positive learning outcomes for students. Small-team collaboration monitored by an instructor is necessary for online classes to establish social relationships and the sense of community. The design of this online course balanced independent and team tasks. The course design allowed individuals to extend their creativity through group negotiation and provided a structure for support. The teams often acted as a ‘safety net’ to prevent individuals from ‘crash-and-burn’ type of stress. Individual remained focused, because team members helped each other abandon unpromising project ideas. In addition, the instructor provided appropriate guidance for coordinating team efforts in cyberspace. She related effective communication methods, suggestions for wise time use and clarified teams’ meeting responsibilities by designating a co-ordinator, timekeeper, recorder and a critic.

It is our contention, based on existing research concerning communication and learning communities, that interaction styles could have affected community building. As previously noted, there was a lack of argument and negotiation in the exchanges. Mason and Kaye (1990) find that intensive negotiation and argumentation reflect the uninhibited effects of communicating in an Internet-based environment, which, as Walther (1996) argues, could facilitate a higher rate of information exchange and strengthen interpersonal and social relations. To corroborate, social constructivist researchers (Mercer, 1995; Derry et al., 2000) relate that many productive communities continually engage in negotiation and argumentation.

Future research

Findings of this study may not apply to other settings because of its context specificity. In this study, we did not find clear evidence for the impact of gender differences on community forming. Many other factors contributed to community forming, such as learners’ online learning experiences, cultural backgrounds, instructors’ facilitation strategies and course activities. We caution researchers in the field not to overrate gender in studies of online learning and online communities. Statements such as ‘males’ tendency of dominating of online environment’ and ‘the silencing of female students’ should be carefully examined. In particular, studies on gender differences should be careful not to create gender-biased labels, such as ‘elegant empathetic female tones’ and ‘masculine rough male tones’. In addition, studies should avoid using predetermined approaches such as categorizing senders’ messages as ‘seeking power, striving to help others, seeking to establish status’, (Michael, 1992 as cited in Blum, 1999). Although women are predicted as a major target market for distance education and with the realization that it is important to meet their learning needs (Blum, 1999), future research should examine discourse in its specific contexts and avoid stereotyping and exaggerating gender differences in online learning. Designing learning activities based solely on gender could create artificial segregations among learners. We argue that accepting the differences in individual learning styles and performances is the best way to accommodate differences.

The use of emoticons and acronyms, as related to community building through recognized common use, could also be explored. The eight RealAudio webcasts produced by the instructor could be further analysed for facilitating strategies and communication skills as relevant to community forming. The design of the online instruction was a key component of online community formation, which purposefully allowed participants the
opportunity to communicate as a group and work in teams. Case studies examining different instructional designs may bring us to a better understanding of how to better facilitate online course discussion and task completion.

**Limitations of the study**

Because this study examines a very specific context with a small number of participants, the findings may not be applicable to other settings. In addition, the instructor's assumption of the researcher role limited our abilities to control for biases. However, we believe that the research credibility has been established through prolonged engagement, persistent observation, and triangulation. Besides, the co-investigators were primarily responsible for analysing communications and survey data. We encourage future researcher to explore more rigorous ways of conducting classroom-based research.

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**References**


**Biographical notes**

Minjuan Wang is assistant professor of Educational Technology at San Diego State University, USA. She teaches instructional design, procedures of investigation and report, and technologies for teaching. Her research specialties focus on the socio-cultural aspects of online learning (e.g. learning communities, gender and cultural differences in online collaboration) and technological interventions in language and literacy education.

Christina Sierra is a public school teacher and a MA candidate of Educational Technology, San Diego State University, USA. Her research interest is on gender differences in online learning.

Terre Folger earned a PhD in Curriculum and Instruction from the University of Missouri-Columbia in 2001. She is presently an assistant professor in the Education Department at Westminster College in Fulton, Missouri, USA, where she facilitates the preparation of pre-service teachers in many methods courses, including instructional technology.

**Address for correspondence**

Minjuan Wang, Assistant Professor of Educational Technology, San Diego State University, 5500 Campanile Drive, North Ed 280, San Diego, CA 92182, USA; e-mail mwang@mail.sdsu.edu