

## Asynchronous text-based communication in online communities of foreign language learners: Design principles for practice

**Mariolina Pais Marden**

University of Wollongong

**Jan Herrington**

Murdoch University

Effective employment of information and communication technology (ICT) in foreign language teaching and learning has become imperative as a means to support second language development when traditional face-to-face instruction and interaction is not possible. Using a design-based research approach and a theoretical framework that integrates authentic learning and online communities of practice principles, this paper examines the nature and extent of students' contributions to computer mediated communication (CMC) tools provided in an online Italian as a foreign language learning environment. This paper describes the context of the intervention strategy, the methodology used, and presents an analysis of themes emerging from the data relating to the use of multiple discussion forums to support interaction and collaboration within the online community of foreign language learners. The findings suggest that there was a substantial development in the way students used different discussion forums over the course of two consecutive iterative implementations of the online learning environment developed. The findings also show that, as time progressed, students felt increasingly more confident about communicating their ideas in writing in the target language to different groups of participants.

*Implications for practice or policy:*

- The design principles and learning environment described in this study will assist foreign language educators to create their own pedagogical frameworks for language education in technology-based, authentic learning environments.
- The design principles that emerged from this research will assist foreign language educators to support student interaction and collaboration in online communities of learners.
- Foreign language students' engagement with peers and native speakers will be enhanced by integrating the recommendations for encouraging purposeful and authentic student online interactions.

*Keywords:* collaborative learning, online communities of learners, content analysis, learning design principles, authentic learning, design-based research

### Introduction

In recent years, second language acquisition researchers, influenced by Vygotsky's sociocultural theory, have emphasised the connection between linguistic development and the social and cultural context in which a second language is learned (e.g., Lantolf et al., 2018; van Compernelle, 2015). According to these researchers, engaging in purposeful social interaction and collaborative dialogue with other learners and competent target language speakers is crucial to successful foreign language development. The importance of learning through goal-oriented social interaction and collaboration with other learners and experts with different sets of skills and abilities is also a critical aspect of situated learning (Brown et al., 1989). According to the proponents of the situated learning model, meaningful learning can best occur when learning is embedded in authentic contexts and when learners are provided with the opportunity to observe and learn from the practices of more experienced and competent peers.

The notion of learning as a process of social participation in communities of practice and the concept of *legitimate peripheral participation* (Lave & Wenger, 1991; Wenger, 1998; Wenger et al., 2002) are closely linked to the situated learning model. These concepts relate to the development of learning environments

in which learners become involved and engaged in the practices of a particular community and gradually acquire knowledge and skills from expert community members. Recent research into technology-supported language teaching and practice has discussed the unique benefits of integrating asynchronous and synchronous text-based computer mediated communication (CMC) tools into the second language classroom to provide opportunities for authentic and collaborative target language practice with target language speakers (Martin et al., 2012; Petersen & Sachs, 2015).

In this paper we report on a design-based research study which explored the nature and extent of students' contributions to the asynchronous CMC tools and resources provided to support interaction and collaboration in an online community of intermediate and advanced level students of Italian foreign language learners. The pedagogical approach employed in this study integrated aspects of Vygotsky's sociocultural theory applied to second language acquisition (Lantolf et al., 2015), situated and authentic learning, and principles that guide the development and implementation of successful online communities of practice and communities of learners to develop an online learning environment that provided opportunities for meaningful language practice. The paper concludes with a set of design principles and guidelines to support other language instructors who may wish to integrate internet-based tools to facilitate student interaction and collaboration in an online community of learners.

## Literature review

With overall reference to Vygotsky's sociocultural theory, three significant areas of research and literature informed the design and conduct of the study, specifically: (1) situated and authentic learning, (2) communities of practice, and (3) communities of learners. These are presented in more detail in the following sections, together with a brief discussion of CMC within the context of the study.

### Situated and authentic learning

Brown et al. (1989) introduced the concept of situated learning to describe the situated nature of learning and to refer to the role of context in the learning of knowledge and skills. Situated learning emphasises the importance of situating abstract tasks into authentic contexts to enable learners to participate in authentic practices through activity and social interaction with experts and other learners with different levels of skills. In a situated learning setting, students learn by observing an expert or more competent learners and by actively using knowledge in these authentic contexts, rather than passively receiving it (Collins et al., 1991).

Based on the situated learning framework and on Herrington and Oliver's (2000) model of nine elements of authentic learning, Herrington et al. (2010) further developed a model of authentic learning or authentic e-learning that focused specifically on the element of learning tasks. This model comprises 10 guiding design elements of authentic tasks, including real-world relevance, complexity, and opportunities for collaboration, and further provides recommendations on how each element can be applied to develop authentic learning environments that utilise technology as delivery and cognitive tools. According to Herrington et al. (2010), the application of elements of authentic tasks can support student learning in entire courses of study delivered online by promoting the learning of knowledge and skills in meaningful, realistic contexts which reflect the way this knowledge is used in real world settings, and by providing opportunities to collaborate with others to develop solutions.

### Communities of practice

A critical aspect of the situated learning model is the notion of learning as a process of social participation in communities of practice. The concept of communities of practice and the notion of learning through the process of *legitimate peripheral participation*, originally developed by Lave and Wenger (1991) to describe learning in apprenticeship environments, refer to the process by which learners become involved and engaged in the practices of a particular community and gradually acquire knowledge and skills from expert community members. Wenger (1998) defined a community of practice along three defining dimensions, which are the source of coherence of a community and are a necessary requirement for creating a cohesive community of practice. These dimensions are mutual engagement, a joint enterprise and a shared repertoire of resources. Wenger et al. (2002) later identified three structural elements that differentiate a community of practice from other groups and communities: (1) a domain of knowledge, (2) a community of people

who care about the domain and want to see it developed, and (3) the shared practice that they develop in order to be effective in their domain.

### **Communities of learners**

The notion of communities of learners or learning communities is built upon the concept of community of practice. As in a community of practice, in a learning community, members interact and develop relationships with each other and with their tasks through a process of active collaboration and cooperation among each other. Wenger proposed that learning lies at the very core of both communities of practice and communities of learners. In both frameworks, the relationships that are developed among community members as they interact and collaborate with each other enable them to generate new knowledge. The original concept of community of learners has evolved and has been expanded by several theorists and researchers to include a discussion about the defining qualities and goals of a learning community. Bielaczyc and Collins (1999) for example, maintained that the defining quality of a learning community is that there is a “culture of learning, in which everyone is involved in a collective effort of understanding” (p. 271). According to Biasutti (2011), an essential characteristic of a community of learners is that its members engage with each other and learn through a process of collaboration and cooperation with other community members. The shared goal of a learning community is, ultimately, according to Scardamalia and Bereiter (2006), to advance the collective knowledge of a group of learners to support the growth of individual knowledge. The common feature of these definitions is that, through a process of collaboration and cooperation, knowledge is distributed among the various members of a learning community to enhance the potential of all members. As they contribute to a particular group activity or project, these community members share not only their knowledge and skills but also the responsibility for learning.

Research into the outcomes of learning communities has revealed that learning communities are powerful means for creating and sharing knowledge and can provide several benefits to both their individual members and the community as a whole. These benefits include improved student retention in academic courses (Kern & Kingsbury, 2019; Lei et al. 2011), increased development of self-regulated learning strategies (Beishuizen, 2008), increased interaction and collaboration within the community (Buchenroth-Martin et al., 2017; Garrison, 2017), increased flow of information and knowledge sharing among community members (Brouwer & Jansen, 2019; Ehrlick & Slotta, 2018), increased sense of engagement and motivation (Nye, 2015; Pike et al., 2011; Rocconi, 2011), increased sense of belonging (Brouwer et al., 2019; Masika & Jones, 2016), and relatedness to peers and teachers (Beachboard et al., 2011).

In recent years, the concepts of communities of practice and communities of learners have been successfully applied to technology-supported learning environments in which community members connect and engage in social practice with other members through different types of asynchronous or synchronous web-based communication. The specific benefits of integrating CMC tools into second and foreign language learning classrooms and communities are described in the following section.

### **Computer-mediated communication (CMC)**

Several researchers and language educators have argued that integrating various types of asynchronous and synchronous text-based CMC tools into the second language classroom and curriculum, can effectively support second language development by providing increased opportunities for authentic interaction in the target language outside the normal constraints of the classroom and regardless of geographical location (Gonzales-Lloret, 2015; Levy & Stockwell, 2013). In particular, incorporating asynchronous online threaded discussion forums offers a number of significant benefits for learners. According to Levy and Stockwell (2013), regularly reading and examining other members’ postings and being required to reply to them by composing new messages in the target language can foster learners’ reading comprehension and written communication skills. (González-Lloret, 2015; Sert & Balaman, 2018).

Blake (2013) argued that another advantage of integrating online discussion forums in the language curriculum is that they promote equal participation as they enable students who have less-developed language skills to take time to view and analyse postings and to structure their contributions. Online discussion forums enable less-extroverted students to actively engage in discussion in a way that would not be easily accomplished in face-to-face communication. Students’ participation in online forums also has the potential to increase learners’ perception of control over the discussion as students have more time to

reflect on the ideas contributed by others and to integrate them with their own ideas and opinions (Chapelle, 2005).

Another significant advantage of online asynchronous discussions is that they support collaboration and cooperation as they enable participants from different locations to use small individual collaborative group discussion threads as a space to brainstorm ideas and discuss specific topics (Blake, 2013; Levy & Stockwell, 2013; Wang, 2010; Wilkins, 2018). A further benefit is that active discussion forums with high levels of interaction with multiple learning partners generally help to create course cohesion (Qian & McCormick, 2014), foster learner autonomy (Brooke, 2013; Wilkins, 2018), and result in increased levels of student satisfaction in the learning experience (Chakova, 2019).

The situated and authentic learning model, with its focus on learning in authentic settings and on the instructional design of effective authentic tasks, provided guiding principles for the development of an appropriate learning environment. Further strategies derived from concepts of online communities of practice and communities of learners, provided an encompassing robust framework to guide the design and implementation of the online community of second language learners of this study.

## **Research methodology**

The research methodology for this study employed a design-based research approach and was conducted in four phases according to the model proposed by Reeves (2006). This model enabled the researcher to test and refine the online learning environment developed through two successive 6-week iterative implementations conducted in an Italian language course at an Australian University.

Data were collected through students' contributions to community and individual group discussion forums and the researcher's notes and observation of students' participation in the online discussions. In order to corroborate the data gathered from these sources, four focus group interviews of 50 to 60 minutes each were also conducted with each of the collaborative groups of students at the conclusion of the first iteration. At the conclusion of the second iteration, individual interviews of 45 to 60 minutes each were conducted with each of the participating students. The interview technique adopted used Patton's (2014) standardised open-ended interview category, in which the sequence of questions was determined in advance and the questions were worded in an open-ended format. This approach allowed the researcher to cover a broad framework of topics and to ask follow-up questions to clarify participant responses in relation to the nature and extent of their contributions to the asynchronous CMC tools and resources provided to support interaction and collaboration in an online learning environment.

The final phase of this research involved developing a series of design principles to guide the development of similar online foreign language learning environments in other educational contexts. In order to protect the rights of participants and ensure that the research was conducted in a fair and equitable manner, strict ethical guidelines laid down by the Human Research Ethics Committee of the University were followed and addressed.

## **The learning environment**

In order to integrate the theoretical principles that emerged from the literature, an online learning environment that focused on creating and supporting the development of an online learning community of 12 intermediate and 4 advanced level students of Italian was developed and implemented over two iterations. The learning environment had two authentic tasks as its main focus and an assessment component that required learners to communicate in the target language and collaborate with each other and a group of seven selected native speaker mentors through the CMC tools and resources of an online learning management system (LMS). The mentors recruited for this study were university lecturers or tutors of Italian, Italian students completing a postgraduate teaching qualification, or Italian students visiting the university as part of a mobility program. These mentors were selected prior to the beginning of the study on the basis of their teaching experience, their ability to model expert performance and to provide students with scaffolded assistance in an online community. Prior to the start of the project, all mentors were provided with specific guidelines to assist their participation and ensure that students would benefit from their expert performance and assistance. The tasks were designed according to the defining elements of authentic tasks (Herrington et al., 2010) to enable learners to engage and immerse themselves in purposeful

and goal-oriented authentic interaction to develop a tangible product that they could potentially benefit from in the future. The first task required students to plan and develop a detailed itinerary and a comprehensive travel guide of a 4-week trip to Australia for a group of visiting Italian university students. The second task was to plan and organise a 4-week exchange trip to Italy for all students in the class. Each task had to be completed in the target language over the course of a 6-week iteration and required students to work collaboratively to develop an itinerary and comprehensive travel guide that could take the form of a website, video segment, PowerPoint presentation, guidebook or brochure, or a combination of any of these options.

In order to complete the first task, students self-selected into four collaborative groups of four and agreed that each group would focus on a different state in Australia as the travel location. Three of the four groups consisted of intermediate level learners and one group consisted of the four advanced level learners. One native speaker mentor was assigned to each group to assist students complete the collaborative task and individual online discussion forums were set up in the course website for each of the four collaborative groups to enable communication and the sharing of ideas and research within the groups. A class discussion forum was also set up in the course website to provide a platform for communication and discussion for all members of the online community during the collaborative work on the task.

For the second task, and following the findings and recommendations made at the end of the first iteration, students assigned themselves to five smaller groups of three (one intermediate level student withdrew from the course at the end of the first iteration) and each group identified itself with the name of the region or regions of Italy that were chosen as the focus of its research. Three of the five groups consisted of intermediate level learners, one group was comprised of two intermediate and one advanced student, and one group consisted of three advanced level learners. As with the first iteration, mentors were assigned, and individual and community discussion forums were established on the LMS.

The purpose of the asynchronous discussion threads was to support students' interaction with the other members of their individual groups (i.e., the other students and their designated mentor) and with the class teacher and all the other students and mentors, by providing a space for online communication and discussion during the collaborative work on the two tasks. In order to enable all community participants to engage in multiple discussions both within the whole class and within smaller collaborative groups, access to the group discussion forums was not restricted to the individual groups' members but was extended to all members of the online community. All community participants were able to read all messages posted to each forum and could contribute their own postings to the other groups' discussion threads.

### **Data collection and analysis**

The transcripts of all the messages contributed to the online threaded discussion forums were analysed with the use of a classification scheme. The framework for the analysis and the classification scheme were developed from the data collected during the two iterations and from the content analysis model originally developed by Henri (1992). Henri's model is based on a cognitive view of learning and uses a framework of five categories to analyse the different dimensions of students' computer-mediated interactions: *participative*, *social*, *interactive*, *cognitive*, and *metacognitive*. The participative dimension provides quantitative information about the number of participants and the number of messages contributed by each participant during an online interaction. The other four dimensions provide information about the nature of the online interaction observed between the student participants.

The model developed by Henri was used as a starting point for analysing the content of the messages posted to the discussion forums over the course of the two iterations. The qualitative approach of this model and its focus on the type of exchange that occurred between the participants made it a useful framework for the classification scheme used in this study. However, due to the specific requirements of the online collaborative tasks of this study, the model was modified and adapted to reflect and accommodate the data collected (Table 1).



Table 1  
*Message categories for analysing participants' online contributions*

Message Category	Purpose of message	Example (translated into English)
Introductory	Initial message to introduce the participants	"My name is Nathan and I'm 23 years old. I'm studying Commerce and Italian and this is my final year at university"
Content-oriented	A message that focuses on issues related to the content and cognitive, metacognitive and interactive aspects of the task	"There's an interesting museum inside the Duomo ... might be worth a visit" "We might need to think about including some info on the history of the Uffizi in our guide" "I agree, it's one of the reasons people visit Firenze ... and we could link it to the section on the Medici family"
Procedural	A message that focuses on how the task should be completed and/or on the steps to follow in order to do it	"I've finished the PowerPoint. Let me know what you think and if you want anything changed"
Social	A message that does not relate to the content or process of the task but is social in nature	"Have a nice weekend guys!" "Coffee break at 11?"
Technical	A message relating to technical issues and/or difficulties in using the online tools to complete the task	"There's a technical problem of some kind. I can't access the group forum from home"

The researcher reviewed and coded all the online transcripts related to the online class discussion threads and the group discussion threads, assigning message by category. The process of coding the data is summarised in Table 2.

Table 2  
*Stages of analysis of data*

Preliminary organisation of data	Contributions were investigated separately for each of the different discussion threads.
Coding	Individual online messages were coded according to categories which emerged from the data.
Ordering and displaying	Individual messages were assigned to a specific category. Data were organised into displays in chronological order.
Observation	Observations were developed in relation to the data analysed.
Conclusion drawing	Conclusions about the meaning of data were made and written up.
Verifying	Conclusions were verified by reference back to original data, the participants' focus group and individual interviews, the mentors' and researcher's notes and observations.

Observations of the meaning of the data were then made and conclusions were drawn. Analysis of the data shed light on the nature and extent of students' contributions to the asynchronous CMC tools and resources provided to support interaction and collaboration in an online community of foreign language learners. In order to verify coding reliability and ensure that the representation of the numerical data relating to students' online contributions was accurate, sample transcripts were check-coded by two of the native speaker mentors using a check-coding technique recommended by Miles et al. (2013). The coders completed two rounds of independent and collaborative coding. A comparison allowed the researcher to identify potential issues with the coding system and to adjust the message categories. As the coding consistency between the researcher and the two coders was higher than 90%, the coding process was deemed to be sufficiently reliable.

## Findings

### Class discussion forums

From an analysis of the transcripts of students' class discussions, three different message categories were identified as representative of how participants used the class discussion forums over the two iterations. These three categories were labelled *introductory*, *content-oriented*, and *social*, and are represented in Figures 1 and 2 showing the proportion of message categories identified for the two class discussion forums.

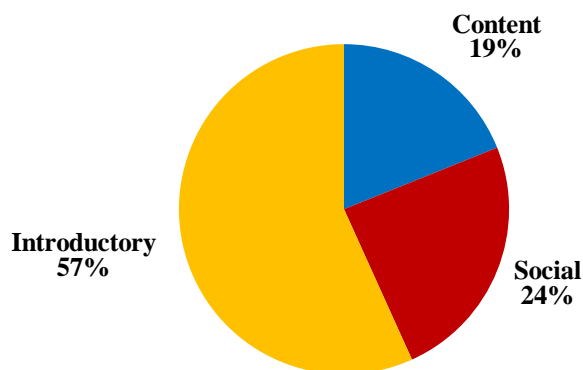


Figure 1. Proportion of categories: First iteration class discussion forum

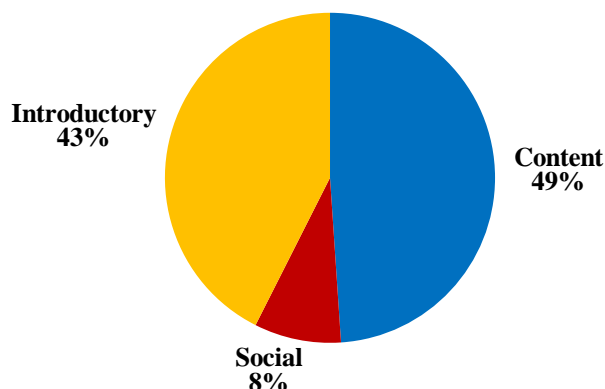


Figure 2. Proportion of categories: Second iteration class discussion forum

The content analysis of the participants' contributions to these two class discussion forums revealed that there was a significant development in the way students used the class threads over the course of the two iterations. As can be seen in Figure 1, more than half the messages posted to the first class forum were introductory messages. Less than one quarter of the total number of messages was classified under the content oriented category and about one quarter fell into the social category. All the participants used this first forum mainly to contribute preliminary messages aimed at introducing themselves and getting to know the other community members. Students contributed a much lower proportion of content-oriented messages, which mainly involved simple questions or requests for information related to the logistics of the task, and a slightly higher proportion of social-oriented messages, equivalent to approximately one quarter of the total number of messages contributed to the forum.

While the number of introductory messages contributed to the second forum was similar to the number posted to the first forum (20 and 21 messages respectively), their content was quite different. These messages did not include simply personal information about the participants, but also information and comments related specifically to students' prior travel experiences in Italy (the subject of the second iteration) and to their interest in developing a particular itinerary for a certain area. The more content-

oriented focus of this second round of preliminary messages indicates that, having already introduced themselves in the first class forum and having familiarised themselves with the requirements and timeframe of the project, students were eager to direct their attention to the new task from the beginning, and to make the most of the time allocated to complete the new itinerary. An interesting finding was that students posted a substantially higher proportion of content-related messages to the second forum compared to the first forum. The higher presence of these messages is an indication that, as time progressed, students felt increasingly more confident about presenting their ideas and comments about the task to the other community participants, including all the other students in the class and the native speaker mentors. The more content-oriented focus of the introductory messages and the greater number of content-oriented contributions, together with the substantially lower proportion of social-oriented messages posted to this second class forum, is a clear reflection of the stronger task focus of the second iteration compared to the first, and of the positive shift in the students' level of confidence in communicating to a large group of participants.

These findings were confirmed by several comments made by the students during the individual interviews carried out at the conclusion of the project, in which they admitted that their level of confidence in their ideas and in their ability to present them in writing in the target language increased dramatically over the course of the semester. From an analysis of students' comments, it also appears that there was generally a greater interest in the second task compared to the first, and that many of the students were able to relate the task to their prior travel experiences and future plans and to quickly engage with its requirements.

### Individual group discussion forums

From an analysis of the transcripts of the individual group discussion forums, four different message categories were identified as representative of how participants used their individual group discussion forum. These categories were labelled *content-oriented*, *procedural*, *social*, and *technical*. Figures 3 and 4 show the message categories identified for each of the group discussion forums in both the first and second iterations:

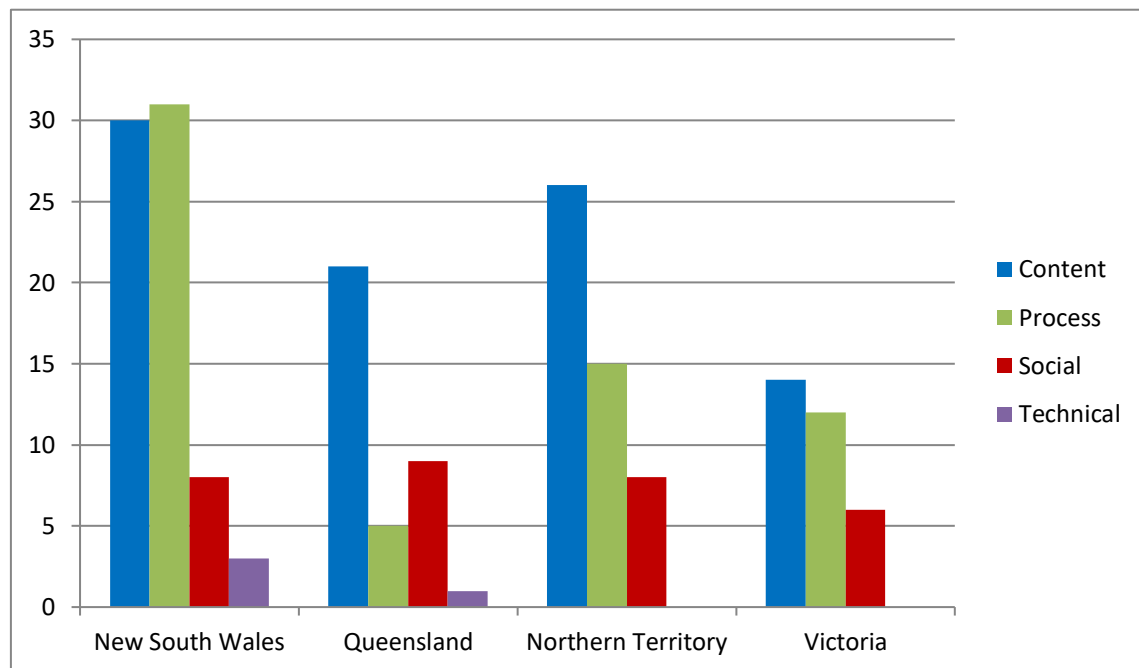


Figure 3. Message categories of group discussion forums: Iteration 1



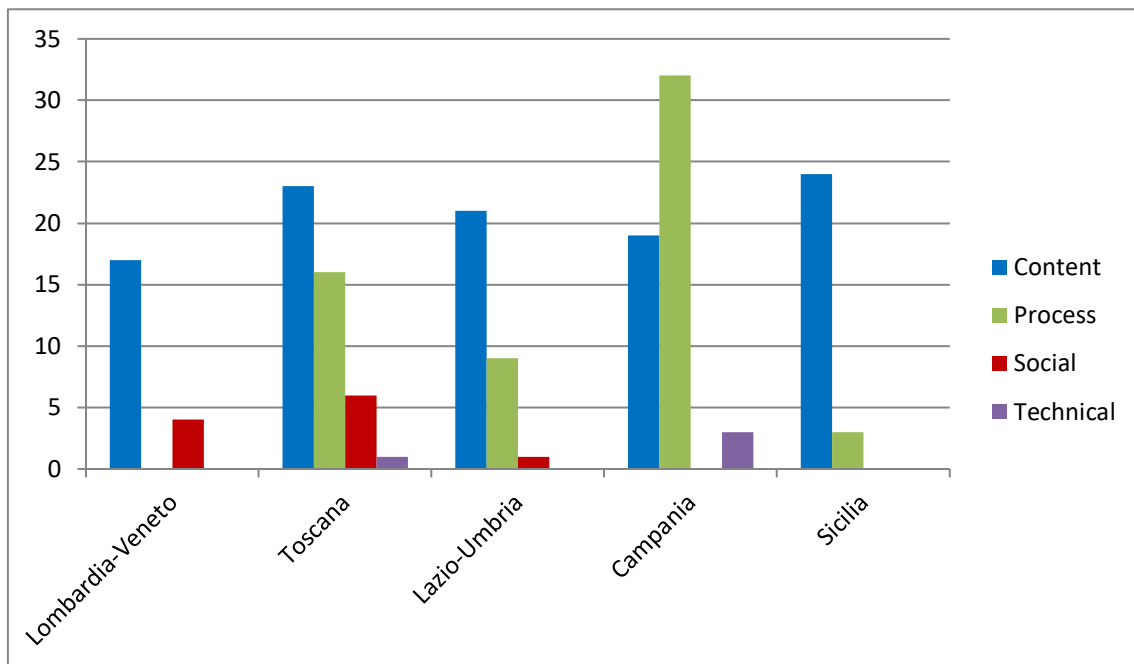


Figure 4. Message categories of group discussion forums: Iteration 2

Findings related to the participants' contributions to their individual group forums clearly shows that students used their group forum predominantly to post messages that related to the content of the tasks. With the exception of the Campania group, which contributed a lower proportion of content-related messages compared to the proportion of process-oriented contributions, these messages accounted on average for the majority of the total number of messages posted to each of the individual threads. These messages reflect the participants' interest and strong focus on discussing and developing the content of the task during both the first and the second iterations.

Messages that focused on the process of completing the tasks were generally present in a lower proportion compared to the content-related messages. The analysis of students' contributions, however, shows that there were significant variations in the number of these process-related messages across the different group discussion threads during the course of the two iterations. An interesting finding was that the New South Wales group, which contributed a higher number of procedural messages during the first iteration, was a group which experienced some difficulties during the collaborative work on the task. The students from this group posted a relatively higher number of messages that focused on the procedural aspects of the task and on negotiating their responsibilities compared to the other groups. During the second iteration, however, the high number of process-related messages posted to the Campania group forum was not an indication of any issue or difficulty in the collaboration, but rather a reflection of the group's uncertainties about the steps to take in order to complete the task. Another interesting finding was the complete absence of process-oriented messages in the Lombardia-Veneto group thread. The students in this group did not post any process-related messages but posted a high proportion of content-related messages. This may be an indication that students were able to direct their attention almost exclusively to the content of the task rather than to discussing procedural issues.

Social-oriented messages were present as the third most numerous message category in all nine group discussion threads. As was the case with the class discussion threads, there was a substantial decrease in the presence and proportion of social messages from the first to the second iteration. This may indicate that, as time progressed and the students got to know their group members, they relied less on the individual forums and more on other means of communication for their non task-related interactions with the other students. These findings were confirmed in the students' individual interviews that took place at the conclusion of the second iteration, in which several students noted that, when they were working on the second task, they did not feel the need to use the group forums to post messages of a social nature as they were also relying on other means of communication and, in some instances, meeting face-to-face.

Technical-related messages accounted for a minimal proportion of the total number of messages posted to the individual discussion threads. This may have reflected the fact that students did not encounter too many obstacles and technical difficulties in using the online features and resources to interact and collaborate in the online community. This finding is in line with the feedback provided by the students during the individual interviews in which they confirmed that they did not experience technical difficulties while working on the tasks.

## **Discussion**

Key conclusions can be derived from the data analysis that are relevant for educators, specifically in relation to the in-depth analysis of individual and group comments, and the disclosure of students' beliefs about their own learning as they engaged with the learning environment. The content analysis of participants' contributions to the class discussion forums suggests that there was a significant development in the way students used the forums over the course of the two iterations. While participants mostly used the first iteration class forum to contribute preliminary messages aimed at introducing themselves to the other community members, they mostly used the second forum to post content-related messages as well as introductory messages with a significant content-oriented focus. The more content-oriented focus of the second iteration class forum seems to indicate that, having already introduced themselves to the other community participants and having familiarised themselves with the requirements of the task, students were ready to quickly direct their attention to completing the new task, which was perceived more interesting and more closely related to their past and future travel experiences. More importantly, from both cognitive and language learning perspectives, an analysis of students' postings to the class discussion forums shows that, over time, there was a positive shift in the students' level of confidence in communicating in the target language to a large group of participants, which included all the other students in the class and the native speaker mentors.

The content analysis of the participants' contributions to their individual group forums suggest that students used these forums predominantly to post content-oriented messages, and that there was a clear interest and strong focus on developing the travel itineraries that were the authentic products of the tasks during both the first and the second iterations. Messages that focused on the process of completing the tasks were generally present in a lower proportion compared to the content-related messages, and there were significant variations in the number of these process-related messages across the different group discussion threads during the course of the two iterations. The presence and proportion of social messages decreased substantially from the first to the second iteration, as participants progressively relied less on the individual forums and more on other means of communication for their non task-related interactions with the other students. The fact that technical-related messages accounted for a minimal proportion of the total number of messages posted to the individual discussion threads may indicate that students did not encounter significant technical difficulties in using the online features and resources available.

Students' comments and feedback during the focus group and individual interviews confirmed some of the findings of the content analysis. Students commented very positively on the value of the class and individual group discussion threads as online spaces where all community members could come together and contribute their ideas and comments related to the content and process of the tasks or post messages of a social or technical nature both to the whole community and to their group members and designated mentor. Students particularly welcomed the opportunity to get to know the other community members in a semi anonymous way through the initial introductory messages posted to the class discussion threads at the beginning of the project and to communicate and collaborate with the other members of their individual groups through a smaller and more private forum. When asked to comment about their contributions to both the class and individual group discussion threads during the two iterations, several students confirmed that they felt less anxious about engaging in discussion and dialogue with a smaller group of three or four other students and one mentor with whom they were able to establish a relationship, as opposed to communicating with a larger and more diverse group of participants. Some students admitted that they were worried about having their language skills scrutinised by all members of the community and therefore preferred to keep their class discussion contributions to a minimum. A number of students who did not contribute to the class discussion threads pointed out that, after having determined the composition of the groups at the start of each collaborative task, and after having posted their initial introduction to each class forum, they felt that they were able to carry out their work on their section of the task both independently and within their own group without having to engage in online discussion with the rest of the class.

The analysis of data and reflection on the findings have been summarised into recommendations to enhance student contributions, together with design principles for foreign language educators. These are presented in the next section.

### Implications for designing asynchronous CMC for foreign language learners

Table 3 presents a series of recommendations to guide students' contributions to class and individual group discussion forums. It also presents a series of design principles and recommendations for practice to assist language teachers who may wish to integrate internet-based tools to enable and support student interaction and collaboration in an online community of learners in similar learning environments.

Table 3  
*Recommendations for student contributions and design principles for teachers*

Element of technology	Recommendations for student contributions	Design principles for teachers
1. Class discussion forum	<ul style="list-style-type: none"> <li>post a personal introduction of yourself in the target language and read all the other participants' introductions</li> </ul>	<ul style="list-style-type: none"> <li>post an introductory message in the target language at the beginning of each iteration to welcome participants to the online learning community</li> <li>have students post a personal introduction of themselves in the target language at the beginning of each iteration</li> </ul>
	<ul style="list-style-type: none"> <li>access the class discussion forum regularly and read all the other participants' contributions</li> </ul>	<ul style="list-style-type: none"> <li>encourage all students to access the class discussion forum regularly and to read all the other participants' contributions</li> <li>be aware that some students might experience anxiety about communicating with a large and more diverse group of participants</li> <li>use a friendly and encouraging tone that is not too formal or didactic</li> </ul>
	<ul style="list-style-type: none"> <li>contribute clear messages to the class discussion and focus on the content of your contributions</li> </ul>	<ul style="list-style-type: none"> <li>encourage students to contribute clear and simple messages that can be understood by all community members and to focus on the content of their contributions</li> </ul>
	<ul style="list-style-type: none"> <li>avoid judging or criticising other students' contributions</li> </ul>	<ul style="list-style-type: none"> <li>encourage students to be respectful of other students' contributions and to avoid casting judgements or criticising them</li> <li>offer positive and constructive feedback and suggestions on students' contributions and ideas</li> <li>avoid explicit corrections of students' target language use</li> </ul>
	<ul style="list-style-type: none"> <li>contribute social messages to the class forum</li> </ul>	<ul style="list-style-type: none"> <li>post and encourage students to contribute some personal off-task messages to promote social engagement and create a sense of a vibrant community</li> </ul>

Element of technology	Recommendations for student contributions	Design principles for teachers
2. Group discussion forum	<ul style="list-style-type: none"> <li>regularly access the individual forums, read all the other participants' contributions and participate to the group discussions</li> <li>offer positive and constructive feedback and suggestions</li> <li>avoid criticising other students' contributions</li> </ul>	<ul style="list-style-type: none"> <li>monitor all messages and encourage students to regularly access the individual forums, read all the other participants' contributions and contribute to the discussion</li> <li>provide individual groups with ongoing encouragement and support as needed</li> <li>offer positive and constructive feedback and suggestions on students' contributions and ideas</li> <li>be respectful of students' input and avoid criticising their contributions</li> <li>ask questions that require further clarification of content to encourage students' reflection and a deeper level of discussion with others</li> <li>tailor contributions to the different linguistic levels and needs of the students in the individual groups</li> <li>be aware of the fact that on-campus participants might also collaborate in face-to-face mode and might not always post messages to their individual group forum</li> </ul>
	<ul style="list-style-type: none"> <li>be active in assisting other students solve process-oriented issues</li> </ul>	<ul style="list-style-type: none"> <li>guide learners in the process of negotiating responsibilities if needed</li> <li>allow the groups to solve process-oriented issues independently but provide assistance on procedural matters as needed</li> </ul>
	<ul style="list-style-type: none"> <li>contribute social messages to the group discussion forum</li> </ul>	<ul style="list-style-type: none"> <li>post some personal off-task messages to individual groups if the levels of social engagement are low</li> </ul>

## Conclusion

This study explored the nature and extent of students' contributions to the asynchronous text-based CMC tools and resources provided to support interaction and collaboration in an online community of foreign language learners. This paper has described the context of the intervention, the methodology used and has presented an analysis of themes emerging from the data relating to the use of multiple discussion forums in an online foreign language learning community. The learning environment described in this study, and the design principles and guidelines that emerged from its implementation, will support other language educators in the process of developing similar learning environments within their own educational contexts.

## References

- Beachboard, M. R., Beachboard, J. C., Li, W., & Adkison, S. R. (2011). Cohorts and relatedness: Self-determination theory as an explanation of how learning communities affect educational outcomes. *Research in Higher Education*, 52(8), 853-874. <https://doi.org/10.1007/s11162-011-9221-8>
- Beishuizen, J. (2008). Does a community of learners foster self-regulated learning? *Technology, Pedagogy and Education*, 17(3), 183-193. <https://doi.org/10.1080/14759390802383769>

- Biasutti, M. (2011). The student experience of a collaborative elearning university module. *Computers and Education*, 57(3), 1865-1875. <https://doi.org/10.1016/j.compedu.2011.04.006>
- Bielaczyc, K., & Collins, A. (1999). Learning communities in classrooms: A reconceptualisation of educational practice. In C. M. Reigeluth (Ed.), *Instructional-design theories and models: A new paradigm of instructional theory* (pp. 269-292). Lawrence Erlbaum. <http://sites.fas.harvard.edu/~ext12366/readings/bielaczyc.pdf>
- Blake, R. J. (2013). *Brave new digital classroom: Technology and foreign language learning* (3rd ed.). Georgetown University Press. <http://press.georgetown.edu/book/languages/brave-new-digital-classroom-0>
- Brooke, M. (2013). Facilitating the development of the autonomous language learner using online virtual learning environments. *Theory and Practice in Language Studies*, 3(4), 572-580. <https://doi.org/10.4304/tpls.3.4.572-580>
- Brouwer, J., & Jansen, E. (2019). Beyond grades: Developing knowledge sharing in learning communities as a graduate attribute. *Higher Education Research & Development*, 38(2), 219-234. <https://doi.org/10.1080/07294360.2018.1522619>
- Brouwer, J., Jansen, E., Severiens, S. E., & Meeuwisse, M. (2019). Interaction and belongingness in two student-centered learning environments. *International Journal of Educational Research*, 97, 119-130. <https://doi.org/10.1016/j.ijer.2019.07.006>
- Brown, J.S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42. <https://doi.org/10.3102/0013189X018001032>
- Buchenroth-Martin, C., DiMartino, T., & Martin, A. P. (2017). Measuring student interactions using networks: Insights into the learning community of a large active learning course. *Journal of College Science Teaching*, 46(3), 90-99. [https://doi.org/10.2505/4/jcst17\\_046\\_03\\_90](https://doi.org/10.2505/4/jcst17_046_03_90)
- Chakova, J. (2019). Engaging with peers, mentors and native speakers as language learning partners in an online environment. *Alsic*, 22(2). <https://doi.org/10.4000/alsic.3864>
- Chapelle, C. A. (2005). Interactionist SLA theory in CALL research. In J. L. Egbert, & G. M. Petrie (Eds.), *CALL research perspectives*. Lawrence Erlbaum. <https://doi.org/10.4324/9781410613578>
- Collins, A., Brown, J. S., & Holum, A. (1991). Cognitive apprenticeship: Making thinking visible. *American Educator*, 15(3), 6-11. [https://www.aft.org/ae/winter1991/collins\\_brown\\_holum](https://www.aft.org/ae/winter1991/collins_brown_holum)
- Ehrlick, S., & Slotta, J. D. (2018). A learning community approach for post-secondary large lecture courses. *Frontiers in Education*, 3(73). <https://doi.org/10.3389/educ.2018.00073>
- Garrison, D. (2017). *E-learning in the 21st century: A community of inquiry framework for research and practice* (3rd ed.). Routledge. <https://www.routledge.com/E--Learning-in-the-21st-Century-A-Community-of-Inquiry/Garrison/p/book/9781138953567>
- González-Lloret, M. (2015). Conversation analysis in computer-assisted language learning. *CALICO Journal*, 32(3), 569-594. <https://www.jstor.org/stable/calicojournal.32.3.569>
- Henri, F. (1992). Computer conferencing and content analysis. In A. R. Kaye (Ed.), *Collaborative learning through computer conferencing: The Najaden papers*. SpringerVerlag. [https://doi.org/10.1007/978-3-642-77684-7\\_8](https://doi.org/10.1007/978-3-642-77684-7_8)
- Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development*, 48(3), 23-48. <https://doi.org/10.1007/BF02319856>
- Herrington, J., Reeves, T. C., & Oliver, R. (2010). *A guide to authentic e-learning*. Routledge. <https://www.routledge.com/A-Guide-to-Authentic-e-Learning-1st-Edition/Herrington-Reeves-Oliver/p/book/9780415998000>
- Kern, B. B., & Kingsbury, T. (2019). Curricular learning communities and retention. *Journal of the Scholarship of Teaching and Learning*, 19(1), 41-52. <https://doi.org/10.14434/josotl.v19i1.26779>
- Lantolf, J. P., Poehner, M. E., & Swain, M. (Eds.) (2018). *The Routledge handbook of sociocultural theory and second language development*. Routledge. <https://www.routledge.com/The-Routledge-Handbook-of-Sociocultural-Theory-and-Second-Language-Development/Lantolf-Poehner-Swain/p/book/9781138651555>
- Lantolf, J. P., Thorne, S. L., & Poehner, M. E. (2015). Sociocultural theory and second language development. In B. V. Patten, & J. Williams (Eds.), *Theories in second language acquisition: An introduction* (pp. 207-226). Routledge.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press. <https://www.cambridge.org/au/academic/subjects/psychology/developmental-psychology/situated-learning-legitimate-peripheral-participation?format=PB>



- Lei, S., Gorelick, D., Short, K., Smallwood, L., & Wright-Porter, K. (2011). Academic cohorts: Benefits and drawbacks of being a member of a community of learners. *Education*, 131(3), 497-504. <https://eric.ed.gov/?id=EJ996368>
- Levy, M., & Stockwell, G. (2013). *CALL dimensions: Options and issues in computer-assisted language learning*. Routledge. <https://doi.org/10.4324/9780203708200>
- Martin, F., Parker, M. A., & Deale, D. F. (2012). Examining interactivity in synchronous virtual classrooms. *International Review of Research in Open and Distributed Learning*, 13(3), 228-261. <https://doi.org/10.19173/irrodl.v13i3.1174>
- Masika, R., & Jones, J. (2016). Building student belonging and engagement: Insights into higher education students' experiences of participating and learning together. *Teaching in Higher Education*, 21(2), 138-150. <https://doi.org/10.1080/13562517.2015.1122585>
- Miles, M. B., Huberman, A. M., & Saldana, J. (2013). *Qualitative data analysis: A methods sourcebook* (4th ed.). Sage. <https://au.sagepub.com/en-gb/oce/qualitative-data-analysis/book246128>
- Nye, A. (2015). Building and online academic learning community among undergraduate students. *Distance Education*, 36(1), 115-128. <https://doi.org/10.1080/01587919.2015.1019969>
- Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). SAGE. <https://study.sagepub.com/patton4e>
- Petersen, K., & Sachs, R. (2015). The language classroom in the age of networked learning. In R. P. Leow, L. Cerezo, & M. Baralt (Eds.), *A psycholinguistic approach to technology and language learning* (pp. 3-22). De Gruyter Mouton. <https://doi.org/10.1515/9781614513674>
- Pike, G., Kuh, G. D., & McCormick, A. C. (2011). An investigation of the contingent relationships between learning community participation and student engagement. *Research in Higher Education*, 52(3), 300-322. <https://doi.org/10.1007/s11162-010-9192-1>
- Qian, K., & McCormick, R. (2014). Building course cohesion: The use of online forums in distance Chinese language learning. *Computer Assisted Language Learning*, 27(1), 4469. <https://doi.org/10.1080/09588221.2012.695739>
- Reeves, T. C. (2006). Design research from a technology perspective. In J. van den Akker, K. Gravemeijer, S. McKenney, & N. Nieveen (Eds.), *Educational design research* (pp. 52-66). Routledge. <https://www.routledge.com/Educational-Design-Research/Van-den-Akker-Gravemeijer-McKenney-Nieveen/p/book/9780415396356>
- Rocconi, L. M. (2011). The impact of learning communities on first year students' growth and development in college. *Research in Higher Education*, 52(2), 178-193. <https://doi.org/10.1007/s11162-010-9190-3>
- Scardamalia, M., & Bereiter, C. (2006). Knowledge building: Theory, pedagogy, and technology. In K. Sawyer (Ed.), *Cambridge handbook of the learning sciences* (pp. 97-118). Cambridge University Press. <https://doi.org/10.1017/CBO9781139519526.025>
- Sert, O., & Balaman, U. (2018). Orientations to negotiated language and task rules in online L2 interaction. *ReCALL*, 30(3), 355-374. <https://doi.org/10.1017/S0958344017000325>
- van Compernelle, R. A. (2015). *Interaction and second language development: A Vygotskian perspective* (Vol. 44). John Benjamins Publishing. <https://doi.org/10.1075/llt.44>
- Wang, M. (2010). Online collaboration and offline interaction between students using asynchronous tools in blended learning. *Australasian Journal of Educational Technology*, 26(6), 830-846. <https://doi.org/10.14742/ajet.1045>
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press. <https://www.cambridge.org/au/academic/subjects/psychology/social-psychology/communities-practice-learning-meaning-and-identity?format=PB>
- Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Harvard Business School Press. <https://hbsp.harvard.edu/product/3308-HBK-ENG>
- Wilkins, B. (2018). Asynchronous collaboration integrating online learning in the foreign language classroom. *The Journal of Language Learning and Teaching*, 8(2), 101-108. <https://dergipark.org.tr/en/pub/jltl/issue/42266/508539>

---

**Corresponding author:** Mariolina Pais Marden, [mpm@uow.edu.au](mailto:mpm@uow.edu.au)

**Copyright:** Articles published in the Australasian Journal of Educational Technology (AJET) are



available under Creative Commons Attribution Non-Commercial No Derivatives Licence ([CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)). Authors retain copyright in their work and grant AJET right of first publication under CC BY-NC-ND 4.0.

**Please cite as:** Pais Marden, M., & Herrington, J. (2022). Asynchronous text-based communication in online communities of foreign language learners: Design principles for practice. *Australasian Journal of Educational Technology*, 38(2), 83-97. <https://doi.org/10.14742/ajet.7370>