

## **Like Peas in a Pod: A Strategy for Creatively Transposing Interaction-Based Classes Into an Online Learning Environment**

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*Abstract: The sudden shift to online learning thrust upon universities worldwide by the 2019 coronavirus disease (COVID-19) crisis created unique challenges related to effective online education. Challenges were most acute for highly interactive classes that were forced to move to asynchronous online learning environments. In response to these challenges, we developed an instructional model, rooted in group communication theories and concepts, designed to promote meaningful online learner-to-learner interaction. We provide an analytical assessment of our communication-based “Learning Pod” model, which was implemented in five English classes taught in the Department of English and American Studies at a German university during the COVID-19 shutdown. In Part 1 we describe the model, its development, and its implementation. In Part 2 we analyze learners’ perceptions of the model’s effectiveness using a mixed-methods approach. Results demonstrate the viability of the model, indicating that it is possible to provide meaningful interaction in asynchronous online classes, even in the midst of a pandemic, if communication goals are clearly articulated and strategically implemented.*

*Keywords: asynchronous online learning, learner-to-learner interaction, group climate, group identity, mixed-methods research.*

Experts in online teaching agree that an essential element in online course design is ensuring opportunities for meaningful learner-to-content, learner-to-teacher, and learner-to-learner interaction (Mehall, 2020; Moore, 1989). The sudden shift to online learning thrust upon universities worldwide by the 2019 coronavirus disease (COVID-19) pandemic created unique challenges related to meeting this standard of effective online education, especially in classes that traditionally rely heavily on in-person face-to-face interaction (e.g., practical language courses, experiential learning classes, and discussion-based seminars).

Like many university instructors around the world, we found ourselves in March 2020 needing to move five highly interactive classes to primarily asynchronous online delivery formats. In addition, like many instructors around the world, we were tempted to think first about the technology we could use to make the transition, but we soon realized that the technology was only one component of the “meaningful interaction” scholars such as Moore and Mehall identified as essential to effective online learning. In fact, the most important element is the actual communication that takes place among learners. Thus, in transposing these courses to online delivery, we turned to basic group communication principles to design a communication-based approach to providing meaningful opportunities for learner-to-learner interaction. This article provides an analytical assessment of the learner-to-learner interaction model that we developed and implemented in five classes taught during the COVID-19 shutdown at Paderborn University in Paderborn, Germany. In Part 1, we describe the

model, its development, and its implementation. In Part 2, we analyze learners' perceptions of the model's effectiveness.

Before presenting our communication-based approach, we think it important to note some key differences between the university systems in the United States and Germany. Because of the semester schedule of German universities, the pandemic struck during a break between semesters, so universities did not have to pivot classes that were in progress. Instructors had a few weeks to redesign their classes for online delivery. Especially worth noting is that because of the structure of higher education in Germany, studying at traditional universities is based on the idea of *Präsenz* (presence in a physical setting). In fact, press releases during the COVID-19 crisis from the university president's office repeatedly stressed that the University of Paderborn is and will remain a "*Präsenzuniversität*," specifically distancing itself from the all-online university (the *Fernuniversität*) in nearby Hagen (Kemper & Horst, 2020). This perspective is also reflected in the University's strategic plan for digital learning (eLearning) that clearly positions this mode mostly in terms of how *Präsenzlehre* (in-person teaching) can be supported through digital means in blended learning scenarios ("Digitales Lehren und Lernen: 2019-2024," n.d.). Given these deeply rooted assumptions about the modes of teaching and learning at German universities, very few of the professors or students at this university had experience with online classes. The shift to online teaching precipitated by the pandemic was seen as a temporary stopgap, not as pivoting to an equally established and widely accepted mode of instruction at the university. Furthermore, in Germany, as in the United States, while faculty were being asked to think creatively about how to move classes online, they were simultaneously being advised by experts in online learning against relying on synchronous instruction because of technology access and equity concerns (Flaherty, 2020; Intercultural Development Research Association, 2020). This created yet another challenge, particularly for classes that were conceptualized and designed around real-time, real-space learner-to-learner interaction, such as the practical language courses that are the focal point of this study.

## **Part 1: Designing a Communication-Based Plan for Online Learner-to-Learner Interaction**

Developing a communication-based model for facilitating meaningful learner-to-learner interaction in online classes requires recognizing that the channel of communication, the technology through which interaction occurs, is only one small part of the process. In fact, meaningful learner-to-learner interaction will take place only if one puts communication first when designing online interaction opportunities. This requires instructors to articulate the communication that needs to take place in the virtual classroom for the desired learning outcomes to be attained and then to design interactions that promote that communication. For the classes in this study, we agreed that group learner-to-learner interaction aligned best with our course and program-level learning goals, so we "put communication first" by returning to group communication basics and identifying the specific aspects of group characteristics, functions, and process that we could leverage in designing learner-to-learner interaction for the classes.

### *Identifying Foundational Group Communication Concepts*

*Group characteristics.* Groups share several characteristics that can be used to facilitate successful interaction. The first is group size. A rule of thumb suggests that the ideal size for a group is the smallest number of people that will allow the group to successfully complete its task. Indeed, the ideal size of a group depends on the task. Fay, Garrod, and Carletta (2000) discovered that if the task is dialogue or conversation, the optimal size is five, with larger groups engaging in "serial monologues" more than "interactive dialogue."

Groups are also characterized by interdependence, with group members typically sharing a common purpose and a common fate. Strategically seeking to foster an awareness within online groups of their shared purpose and their interconnectedness should promote more meaningful and productive interaction. Similarly, groups have a shared identity. To be considered a group, a collectivity of people needs to think of itself as a group. The degree to which group members identify with the group impacts commitment and engagement (Ellemers, Spears, & Doosje, 1997); therefore, designing groups that encourage a sense of group identity should positively influence online group interaction.

*Group functions.* The second aspect of group theory relevant to designing interactive learning activities from a communication perspective is group function. Groups fill two primary functions: instrumental and interpersonal (Bales, 1950). Within the context of eLearning, the ultimate instrumental goal is deep learning, “the processes of learning which allow deep understanding to be reached” (Entwhistle & Entwhistle, 2005, p. 145), and research shows that collaborative, group-based activities promote deep learning (Francescucci & Foster, 2013; Johnson et al., 2017).

Groups also play a significant role in meeting the primary interpersonal goal of eLearning, “social presence” (Kreijns, Kirschner, & Jochems, 2002; Kreijns, Kirschner, Jochems, & Van Buuren, 2004; Kreijns, Kirschner, & Vermeulen, 2013). Akcaoglu and Lee (2016), who consider social presence to be “an imperative component of online learning,” reported that placing students in small, permanent discussion groups is an effective way to promote social presence. Dolan, Kain, Reilly, and Bansal (2017) concurred, arguing that “establishing mutually reinforcing relationships is essential to cultivating community in the online environment” (p. 46). Ideally, in designing online interactions, group functions should be clearly articulated and aligned with course goals, so that the group activities maximize the potential for both instrumental and interpersonal needs to be met.

*Group process.* The third component of group communication theory that we integrated into the design of our online interaction model is group process. There are many communication processes that can impact the effectiveness of a group. The two that we chose to focus on are group climate and group roles. Group climate, which includes task and social cohesion, supportiveness, and trust, has been linked to a variety of desirable group communication outcomes: setting goals easily, high levels of commitment, fewer attendance issues, stick-with-it-ness (particularly during challenges), willingness to listen to one another, and lower levels of tension and anger (Hargie, 2011). Xie, Hensley, Law, and Sun (2019) concluded that perceived group cohesiveness was the strongest correlate of learning engagement in online collaborative learning. By designing online group activities to intentionally cultivate cohesion and supportiveness, the instructor should be able to increase the effectiveness of learner-to-learner interaction.

### *Learning Pods: Putting Group Communication Concepts Into Practice*

Guided by the group concepts described above, we decided to divide the students in each of the five courses into Learning Pods (LPs), a label we chose deliberately for its metaphoric potential.

*Group characteristics.* Group size for an LP was typically five members. Our determination of group size and structure was influenced by the actual class size (ranging from 14 to 20) and the consideration that we wanted the group to remain viable even if students dropped out in the course of the semester. In total we had 19 pods. Our group formation criteria included the promptness, accuracy, and level of engagement evidenced by students in response to an initial email sent by the instructor. This email asked students to confirm that they were still interested in taking the course, even under the new online conditions, and to introduce themselves in a few sentences. The first five students who responded and showed a high level of commitment, both by being first to respond and through the level of enthusiasm expressed about the class in their response, formed the first LP,

the next five the second LP, and so on until all students were distributed into a learning pod. We reasoned that a shared initial attitude toward the course would help groups in establishing an identity and creating a sense of a common purpose. In putting students in potentially more homogeneous groups—rather than deliberately mixing stronger and weaker, more eager and more reticent students—we hoped to create a more balanced work climate.

*Group functions.* As mentioned above, successful small groups serve functions on an instrumental as well as an interpersonal level. Our approach to facilitating these group functions was, of course, closely linked to dealing with the unusual educational situation created through the COVID-19 shutdown. To help students establish social presence and function as a mini class community in their LPs, we first had them “work on” building a group identity by asking them to find a way to meet virtually, introduce themselves to each other, and then to collectively give their LP a name. While we closely controlled many aspects of the group’s formation and functions, the LPs also had some autonomy such as deciding on their preferred virtual way(s) of communicating with each other. That became part of their identity formation and was even reflected in some of the names they gave their pods (e.g., “Digitally Overstrained” or “The Rolling Phones”). For most of these German students, so accustomed to equating their academic life with face-to-face interaction, the LP was their only way to recapture at least some of the connection to fellow learners they expected in the university setting. In addition to the naming activity, an early assignment in each class was designed to further foster interpersonal engagement (e.g., asking the group to prepare an audio introduction of their group for the instructor, writing and sharing a “life metaphor” with the group). These LP design decisions are supported by research that demonstrates the importance of introductions (Dolan et al., 2017) and creating a shared history (Kreijns et al., 2004) in establishing a sense of community.

Once an initial sense of community had taken root, the instrumental functions of the LP could come into play. The actual “work” of the groups was done in semiregular 90-minute virtual meetings. To facilitate deep learning, we embedded the specific instrumental tasks of the class (e.g., speaking English, working through course materials, engaging in guided discussions, and providing peer feedback on written and oral assignments) into the design of these LP meetings. Much like a face-to-face class period, each LP meeting followed a set structure. For each LP meeting, the instructor provided instructions for preparing for the meeting (e.g., tasks the students had to complete beforehand and bring to the meeting) as well as clear guidelines for conducting the actual meeting (e.g., an approximate timeline for the meeting, guided discussion prompts, suggestions for structuring the discussion). In the last 15–20 minutes of each meeting session, pod members collectively completed an LP report form, which they uploaded for feedback/comment from the instructor. A sample is provided in Appendix 1. The LP report forms were designed to support both the instrumental and interpersonal functions of the groups. On the one hand, the instructor used these LP reports to assess whether pods were on track in terms of course content and learning objectives. On the other hand, the instructor used the reports to support the interactive, social presence functions of the LPs by affirming student insights, summarizing major points from the reports across LP groups of one class and sharing those on a virtual bulletin board on the learning platform, and occasionally adding points that might not have been addressed in the group discussions. In many ways, the LP reports served a similar function to collecting discussion points on a blackboard in a traditional face-to-face learning scenario.

*Group process.* The elements of group process most significant for the success of an LP are related to group climate and group roles. Just like a face-to-face class, a learning group needs cohesiveness, supportiveness, and trust to function well. Unlike a face-to-face class, however, it is potentially more difficult for the instructor to influence the conditions that foster positive climate in an online environment. The naming of the pod as well as the sharing of an initial assignment that

was of a more personal nature laid some of the groundwork for trust and supportiveness. We aimed at further promoting supportiveness by modeling the desired climate through our ways of interacting with the pods. We addressed pods by their names and used clipart on the learning platform to underscore a “we-are-all-in-this-together” attitude. In our written communication (weekly updates on the learning platform as well as messages to individual pods), we often used metaphors to further emphasize the idea of our collective journey through an unusual and challenging semester. For example, we invoked the idea of our class being on a spaceship traveling through uncharted and alien virtual territory. Our learning platform became (through word and image) our safe space station, where we could accomplish our work in cyberspace. We reasoned that seeing us support them also would encourage learner-to-learner supportiveness and a sense of cohesion in the pods. We further promoted group cohesion by providing a high level of task cohesion. As described above, group tasks were always clearly defined and organized into distinct steps. Filling the tasks with content, however, was left up to the pods, so LPs had some measure of autonomy and group self-determination in dealing with the tasks. We dealt in a similar way with the group roles. We encouraged the pods to select a note taker, a discussion leader, or a meeting facilitator (whatever was appropriate for the task at hand) for each meeting. We stipulated that each pod member should step up to fill these roles in the course of the term. That way, leadership and maintenance roles were passed around and shared by all pod members. Finally, asking students to work together to complete and submit the LP report form at the end of each meeting was another attempt to further cement group cohesion.

## Part 2: Assessing the Viability of LPs

In addition to designing our communication-based model to facilitate learner-to-learner interaction, we also designed a strategy for assessing the viability of the model. Part 2 presents our findings in response to the following research questions (RQs):

RQ1: Does the communication-based LP model result in learner-to-learner interaction in asynchronous online classes that learners perceive as meaningful?

RQ2: What are the most important indicators of learners perceiving LP interaction as meaningful?

### *Methods*

To assess the viability of the LP model, our communication-based strategy was implemented in five classes that were forced to move online as a result of the COVID-19 shutdown at a German university. The classes were all part of the practical language (*Sprachpraxis*) sequence of classes within the department of English and American Studies (*Anglistik/Amerikanistik*) at the bachelor’s and master’s levels. A total of 92 students (58 bachelor’s and 34 master’s) were enrolled in the classes. All classes were taught by the same instructor, which ensured consistency in implementation of the strategies across classes. Institutional Review Board approval was received for the study.

*Data collection.* Assessment data were collected at two points during the semester. At midterm, students received an emailed link to a Qualtrics survey they could complete and submit anonymously. To encourage participation, each class was told that if participation in the class reached 80%, everyone in the class would receive 10 bonus points. The survey consisted of three open-ended questions and 18 Likert-scale items measuring individual and group behaviors (e.g., I participate regularly in my LP meetings), affective responses to working in the LPs (e.g., I enjoy participating in the LP meetings), and perceived outcomes (e.g., The LP meetings help me better understand course materials and

assignments). The response scale was the 5-point scale (YES!, yes, ?, no, NO!) developed and utilized by Norton (1983). All classes received the class participation bonus, with 75 completed surveys submitted.

The second assessment point was a reflection paper students were asked to write and submit at the end of the semester. The reflection paper prompted invited students to reflect on what they had learned about themselves as oral/written communicators in English through the assignments in this class (e.g., “What did you learn about yourself as a writer? What did you notice about your writing habits/strategies? What is your take-away from this course, especially in terms of future writing tasks?”). In addition, students were asked to answer a series of very general questions about the LPs (“How did the learning pods work for you? Be specific.”), the learning materials that had been provided in the class (“Comment on the learning materials that were provided. Did you find them helpful? How did you use them?”), and their interaction with the instructor (“Comment on the ‘interaction’ with your instructor. What did you think of the weekly updates, the clip art, the general feedback documents, your email contact(s) with the instructor, etc.?”) throughout the class.

*Data analysis.* Data analysis involved a mixed-methods design, with statistical analysis of the quantitative survey data providing general indications of the perceived effectiveness of the LP model. Thematic content analysis of the answers to the open-ended questions on the midterm survey as well as the final reflection papers additionally provided a richer and more nuanced understanding of students’ experiences with the LPs. The first step in the qualitative data analysis process was to unitize the data, which involved highlighting passages that were relevant to the group characteristics, functions, and process concepts that informed the LP design. Then, two trained coders thematically analyzed the responses in each category, using Owen’s (1984) criteria for identifying themes: recurrence, repetition, and forcefulness. The themes emerging from the analysis are described in the Results.

### *Results: Research Question 1*

The first research question this study sought to answer was whether the communication-based LP model results in learner-to-learner interaction in asynchronous online classes that learners perceive as meaningful. Meaningful interaction was operationalized by six survey items that assessed student perceptions of the desired instrumental and interpersonal functions of the LP model. Table 1 provides means and standard deviations for these items. The data suggest that the large majority of students (72% to 88%, depending on the variable) perceived the LPs to be a meaningful part of the class, in terms of both instrumental goals related to course materials and interpersonal goals related to building a sense of community in the online environment. Cronbach’s alpha, which was used to measure the internal consistency of this six-item measure of perceived LP outcomes, revealed that the instrument is highly reliable ( $\alpha = .89$ ).

The results of the thematic analysis of the qualitative data collected for this study provide a more nuanced understanding of the value of the LPs to learners. The high ratings on the perceived outcome variables in the quantitative analysis are mirrored in student responses to the open-ended questions in the survey as well as in the end-of-term written reflections. Students directly and often very enthusiastically attributed their learning and successful completion of course assignments to being part of an LP. Student comments included: “The LPs were super helpful.” “I loved working together with my learning pod.” “The pod was something, to which I weekly looked forward to, as it was a reminder of the old university times.” Frequently students commented specifically on the task orientation of their LPs: “The learning pod was a great way for us to work on the material, truly helpful and successful.” “We worked well as a team and supported each other anytime. Moreover, we had utterly good discussions about the course’s content, which was really helpful and inspiring—

especially with regard to our literary analysis essay.” “All pod members were motivated and well prepared so that we could start our work immediately. We mainly used the full time slot to discuss the questions and tasks.”

**Table 1. Means and standard deviations for perceived outcome variables.**

Survey item	<i>M</i>	<i>SD</i>
I find the LP meetings to be worthwhile.	4.15	0.96
I find the peer feedback I receive on my work during LP meetings to be helpful.	4.16	0.85
The LP meetings help me better understand course materials and assignments.	3.97	1.07
I feel connected to my LP.	4.15	0.99
The LP meetings are a useful part of this online class.	4.44	0.87
The LPs help to create a sense of class community in an all online environment.	4.24	1.04

*Note.* LP = Learning pod.

In fact, some LPs functioned so well that students utilized them outside of the required pod meetings: “We supported each other so well that we also exchanged information about the assignments outside the class hours and set up extra Skype meetings e.g. to practice the speech.” “The feeling of being overwhelmed disappeared when we started to exchange our thoughts and doubts about the podcast [one of their assignments] during our meetings and in our What’s App group on a daily basis, because one of us was always there to help out at a difficult point.” “Our group worked very well together. We always could ask questions in our WhatsApp group chat, we had a non-mandatory meeting once as well, which was really helpful.”

Even initially skeptical students quickly found value in the LP meetings, as is evidenced in the following comments: “Overall, the communication between us in our group worked out far better than I expected, because we really listened to each other and put great emphasis on the project.” “To be honest, in the beginning, I was not so enthusiastic about the learning pods, because I usually experience group work as exhausting. However, the principle has proven to be very helpful for exchanging ideas with each other.” “Honestly, at the very beginning of this seminar, I thought of the learning pods as a burden. This opinion was changed quickly, since every pod member of ‘The Rolling Phones’ enjoyed the meetings we had in this semester. We had a lot of fun and productive discussions.” As is evident in this sampling of student voices, students overwhelmingly affirmed the efficacy of the LPs.

In addition to the general affirmation of the LPs as a useful mode for facilitating learning, students identified specific things they learned in/through working with an LP. They were asked to communicate in English during their LP meetings. This is an important learning objective in *Sprachpraxis* courses, yet students typically feel awkward and self-conscious speaking English to fellow Germans. Yet, in their written responses, numerous students commented that they experienced an improvement in their spoken English skills: “We really spoke English and did not switch to German as a rather serious, university atmosphere was created.” “I think I was able to improve my oral communication strategies continuously from the very first lesson up to today. Furthermore, I think this is because I started to talk in English on a regular basis again.” “I now feel less awkward babbling away in English while I am alone in my room and others could be hearing me.” Gaining self-confidence and trust in their own abilities was another learning outcome many students identified: “My learning pod was a great help doing the assignments, as they were always accessible when questions came up, but they were also good for my self-confidence.” “I think this digital class made me more self-confident.” Not surprisingly, students also achieved and acknowledged a new understanding of and appreciation for working in a group: “The learning pods worked well for me.

We used Skype to meet and discuss everything. In advance, everyone prepared the material so that everyone was well informed. The division of work was also very successful because every member was motivated to do one's best and every meeting, someone else was responsible for the role of the facilitator or note-taker." "I know, in some cases, group assignments are a bit of a challenge. However, my group worked so well together. We were very communicative, flexible, and fun! Making this podcast with them felt natural, so I'm very pleased with the final result of all of our hard work and commitment." All in all, students' comments did not just attest generally to the LPs creating a productive work environment; they also provided evidence that specific learning took place, even beyond the specified learning objectives for the course.

### *Results: Research Question 2*

The second research question sought to identify the most important indicators of learners perceiving LP interaction as meaningful. As with the first research question, mixed methods were employed, with statistical tests being used to identify predictors and qualitative analysis providing a richer understanding of those predictors.

First, we conducted a series of *t* tests to determine if there were differences in learner perceptions of LP outcomes based on gender, level of study, or mode of interaction. Because of the high reliability of the six-item LP outcome survey, we created a composite LP outcome (LPO) variable for this analysis. Men ( $n = 19$ ;  $M = 4.12$ ,  $SD = 0.76$ ) and women ( $n = 56$ ;  $M = 4.21$ ,  $SD = 0.80$ ) did not differ significantly in their perceptions of the LP,  $t(73) = .44$ ,  $p = \text{n.s.}$  Students in the bachelor's program ( $n = 47$ ;  $M = 4.17$ ,  $SD = 0.71$ ) and students in the master's program ( $n = 28$ ;  $M = 4.21$ ,  $SD = .91$ ) did not differ significantly on their perceptions of the LP,  $t(73) = -.20$ ,  $p = \text{n.s.}$  Students controlled the technologies their group used to communicate with each other. Some used tools that allowed for both audio and video interaction, but some chose audio only. A *t* test revealed that there were no statistically significant differences,  $t(72) = -.87$ ,  $p = \text{n.s.}$ , between the groups (audio only:  $n = 16$ ;  $M = 4.33$ ,  $SD = 0.62$ ; audio/video:  $n = 58$ ,  $M = 4.14$ ,  $SD = 0.83$ ).

In addition to the six LPO items, the survey also included items measuring student behaviors and affective responses to their LP experience. Table 2 provides descriptive data on these survey items. Pearson correlations were used to measure the correlation between each of these items and the composite LPO. Those results (see Table 2) suggest that each of the behaviors and affective responses measured is statistically significantly correlated with perceptions of outcomes except for speaking mostly in English, coming to the LP meetings prepared, and spending the full 90 minutes in the LP meeting.

The thematic analysis of the qualitative data provides additional insight related to RQ2. Again, the written student responses in the survey and final reflections reaffirmed the quantitative results: Identity, cohesion, and climate, aspects we strategically integrated into our design, proved to be important factors in the success of the LPs. Having students give their LPs names as one of their first group formation tasks indeed led to students taking on a group identity. The group "The Rolling Phones" evidenced this particularly well, and in their final reflections all members of that group referred to their group by name: "My pod worked excellently for me. I am really happy to be part of The Rolling Phones." "I was (and still am) a member of "The Rolling Phones." In another class, a group played very creatively with the idea of being in a pod and christened themselves "The Communicating Whales." They embraced their name identity to the point of linking a major assignment, making a podcast, to it: They titled their podcast "52 Hertz," the frequency at which whales communicate with each other.



**Table 2. Means and standard deviations for behavior and affective response survey items with correlations to perceived learning pod outcomes (PLPOs)**

Survey item	<i>M</i>	<i>SD</i>	Correlation to PLPOs	<i>p</i>
I participate regularly in my LP meetings.	4.95	0.23	.37	.001
We speak mostly English in our LP meetings.	3.98	1.22	.09	.423
We follow the instructions for running our LP meetings provided.	4.21	0.55	.33	.004
Instructions provided for running our LP meetings are clear.	4.49	0.70	.27	.018
I come to our LP meetings prepared.	4.71	0.46	.11	.357
We complete our LP report form as a group.	4.68	0.62	.40	.000
Our LP meetings generally run the full 90 minutes.	3.83	1.21	.19	.101
I communicate with members of my LP outside of meetings.	3.75	1.22	.35	.000
I enjoy participating in the LP meetings.	4.23	0.88	.78	.001
I appreciate that the LP meetings give me a chance to speak English.	4.11	1.02	.39	.000
I appreciate that LP meetings provide opportunities to interact with classmates.	4.59	0.66	.60	.002
Virtual meetings of the entire class would be better than LP meetings.	2.29	1.14	-.39	.002

*Note.* LP = learning pod.

Cohesion, another important factor in making groups work, is also clearly evident in student responses, corroborating both of the primary markers of group cohesion: social and task cohesion. Social cohesion was indicated by how much time group members spent together and the attitude with which they approached group meetings. Numerous comments attested to students looking forward to meeting up in their LPs, spending the full class time on their meetings, even scheduling nonmandatory meetings, and staying in touch on a regular, at times daily, basis: “I always looked forward to our pod video calls because it was a playful way to get things done, talk about different opinions and learn more together.” “Despite having some technical issues, we always found a way to include every pod member. We even met outside of the mandatory meetings to give feedback and help each other.” “Even during busy times we stayed in touch via WhatsApp and shared ideas, concerns, and sometimes private conversations to keep up the fun.” Students also reported feeling emotionally supported and motivated by their pod members: “The fixed groups allowed us to get comfortable with a set of other students and support and help each other.” “By being part of a learning pod, I had some sense of community which I liked because during times like these (pandemic) one can get pretty lonely and isolated once in a while.” “The learning pod acted almost like a safe space.” It is interesting to note how much the social and the task orientations of the LPs seemed to mesh. The personal support students experienced is almost always linked to the work students had to accomplish together: “It was also nice to have weekly video meetings because then I got to know my pod mates on a more personal level, which helped with the group assignments.”

Task cohesion is typically operationalized by how well the group works as a unit in achieving task goals. This was reflected especially in the sense of responsibility students felt they had toward

their LPs. One student wrote: “And these meetings forced me to be prepared, or else I would let down others.” Another similarly acknowledged: “Members of small groups are, in my opinion, generally more aware of their individual duties and their responsibility for each other.” Here it is interesting how individual goals became synonymous with group goals. Another theme that emerged from student comments was that they themselves also measured commitment to the LPs by punctual and regular attendance and “preparedness” for the meetings: “The problems that often come with group work such as some not being prepared or not even showing up to a meeting were not the case for this group. Everyone showed up for the meetings and came prepared.” “My group members were always wide awake, constructive, encouraging, ambitious, and punctual.” “I feel like we were very lucky with our pod; everyone contributed and did their part. There was not one point in the semester where I felt like I wanted to switch pods.” Finally, it is worth noting how the close intertwining of a supportive social environment in the LPs and the positive work experiences led to several groups planning to extend their “groupness” beyond the life span of the course, further attesting to the high level of cohesion students experienced: “I am so grateful for our learning pod and that we have become friends during the semester and promised each other to stay in contact after the seminar.” “For me, it was a new experience to work in groups for a whole semester, but it was definitely a welcome one. Plans for an after-semester-meeting are in the makings, which means there is a fantastic end of this group work!”

The third and final aspect of group communication important in making groups function well is climate. Generally, group climate refers to the atmosphere and tone that characterize interactions in a group. In the LPs, three factors contributed to creating and maintaining a positive climate: the learner-to-learner interaction, the LPs-to-instructor interaction, and the learner/LP interaction with the materials uploaded onto the learning platform. Since much of what was expressed in students’ comments in regard to identity and cohesion also reflects on their LP’s climate, we forgo supplying additional student comments on the learner-to-learner contributions to climate here. It is clear in the sections above that students felt emotionally safe and supported in their pods and that they perceived the climate in their LP as pleasant, fun, and motivating.

LP climate was also influenced by the interaction with the instructor. In designing our communication-based LP model, we worked very deliberately on setting the tone for the course. In interacting with the students (mainly through emails, feedback on their work, and the materials on the learning platform), we tried to model a “together-we-can-do-this” attitude—fitting for this time of crisis. As their responses show, students felt valued, taken seriously, and encouraged to do good work even in difficult times: “I appreciated your effort and especially your tone very much. Even though you were not present, I felt the support and your recommendations, tips and empathy helped to stay calm.” “Also, you provided great feedback on our solved tasks that showed your appreciation towards our work and effort we put into the assignments.” “You were always available via email, you answered all my emails immediately and you always took time to answer my/our learning pod’s questions thoroughly. I felt like I/we could write to you about anything and never felt the typical “distance” I/we usually feel when communicating with professors. The communication was truly easy-going and friendly and approachable.” The positive tone, the “can-do” attitude, and the corresponding supportive behaviors we modeled were clearly picked up in the learner-to-learner interactions in the pods.

The last factor contributing to LP climate was the learners’ interaction, individually and as a group, with the materials on the learning platform. Two aspects stood out as especially noteworthy in terms of creating climate: the weekly updates we provided and our use of clipart. The weekly update, tailored specifically to each class, provided a backward glance at work already accomplished, answers to questions relevant to the class as a whole, and details about and instructions for the work to be done during the week. We crafted each weekly update with special attention to both the relational and task components of the communication. The relational aspect became manifest in the conversational,

student-centered language we employed as well as our focus on continued encouragement. The task component centered on providing clear, step-by-step directions through the assignments of the week. That both aspects fostered the climate we hoped for is discernible in the following student responses: “The weekly updates on PANDA [our learning platform] helped to create the feeling of not being left alone as a student in this semester.” “All in all, I would say that the PANDA page gave me the impressions that someone is caring about my learning process and invests a lot of effort to structure all the information for us.” “It was refreshing to regularly read new updates in the PANDA course and I especially liked that sometimes new documents were uploaded based on our or our fellow students’ questions. For me, this definitely created a form of online class climate and was also helpful.”

To add some color and vibrancy to the dull and static learning environment on PANDA, we often included clipart with the weekly updates. For example, we occasionally created a clipart rebus and playfully challenged students to “read the pictogram” and guess what the focus of the week’s activities would be. The clipart also served the functions of lightening the mood (especially during difficult stretches) and being motivational. For example, in one of the classes where a major assignment was to give a speech in English, we chose a clipart turtle to accompany students through the process. The first image showed the turtle quaking and ready to withdraw into its shell at the mere thought of having to give a speech, and the last image, shared a few weeks later, was of the turtle confidently and triumphantly crossing a finish line. Comments on the surveys and reflection papers evidence that students noticed and appreciated these visual elements: “The clipart made the atmosphere of the class less “formal” or less serious (not meant in a negative way). I think it actually offers the chance for more creative work and it signals that it is okay to have fun while working on the required tasks.” “Moreover, I loved the clipart. I definitely think it helped as an attempt to create a class climate and it made me feel like you knew exactly what we were going through throughout the different processes.” “The clipart contributed to the overall tone of the weekly announcements which was kind, funny and informal. The choice of language for the weekly announcements was more important for the class climate in my opinion, but it all fit together very well.” All in all, these data indicate that students recognized the connection between the communication-based course design, the quality of the interaction in their LPs, and their perceived success in the class.

## Discussion

The purpose of this project was to develop a model for integrating meaningful learner-to-learner interaction in asynchronous online classes in the COVID-19 semester by focusing on the communication that needed to occur for desired learning outcomes to be met. In this article, we described our communication-based model and offered preliminary evidence of student perceptions of its viability. Both the quantitative and qualitative data suggest that the LPs contributed in positive ways to instrumental learning in the class. Not only did students acknowledge the central role the LPs played in making the class a productive and enjoyable learning experience, they drew explicit connections between the groups’ success, their learning as individuals, and the specific characteristics of effective groups (e.g., cohesiveness, trust, and supportiveness) that we intentionally embedded in the design of the LPs.

The data indicate that in addition to facilitating the attainment of instrumental learning outcomes, the LPs fostered a sense of connection. As one student put it, “From the perspective of the online Corona semester, this seminar was a very refreshing take on e-learning. We still had the opportunity to work from home, but we did not need to give up the element of human contact, whereas other seminars were simply a man vs. computer situation.” The fact that students reported finding meaningful connections through the LPs is particularly noteworthy given the results of a survey of 3,000 students from 31 universities across the United States that found that students “craved

the human connections” that were lost because of the pandemic (Williams, 2020). Indeed, the qualitative data provide strong evidence that the LP model helps build community and promote meaningful learner-to-learner interaction in asynchronous online classes, at least during a pandemic. Of course, we all hope that not every semester will be like spring/summer 2020; therefore, it is worthwhile to think about the transferability of the method to noncrisis situations.

This study demonstrates the viability of the LP method in the German context; however, examining differences between higher educational systems is essential to evaluating the transportability of the method across cultures. The physical presence standard of higher education in Germany and the novelty of online learning for both students and professors in German universities were undoubtedly factors that affected learners’ online experiences, their expectations about online learning and, consequently, their reactions to the LPs. Several students framed their responses to the LP method within the context of their other online courses. For example, one noted, “I was very pleased with the seminar. It was a tricky situation, and the concept worked well for this semester. This class is one of my only courses this semester where I actually felt like the instructor really put effort into making this online semester work as effectively as possible. This course was different but it still felt like a real university class taking place every week. Unfortunately, I cannot say this about all the courses I took this semester.” Comments such as this imply that the positive response of the students to the LP model were formed, at least in part, through comparison with their other online experiences.

Another important consideration related to the transferability of the LP method is that our data, particularly the qualitative data, suggest that the success of the LPs does not lie with the LPs alone. The LPs do not exist in a vacuum. They are the learner-to-learner interaction component of a larger package consisting of weekly updates, email exchanges between teacher and learners, individual learning activities, and course materials. Simply putting students into pod-like groups would most likely not have the same effect without the other carefully crafted pieces of this package. The students’ responses emphasize that all of the components of the course design functioned together to make the class a success. Further research taking an ecological approach to analyzing the complete model in context would be worthwhile. In the end, this project demonstrated to us that it is possible to provide meaningful interaction in asynchronous online classes, even in the midst of a pandemic, if communication goals are clearly articulated and strategically implemented.

## Epilogue

Six months out from the initial conceptualizing and implementing of our LP model during the first COVID-19 crisis semester at the University of Paderborn in Germany finds us almost at the end of another all-online semester. The second COVID-19 semester provided us with an opportunity to test and tweak our LP design in a term in which online learning moved from an emergency crisis management measure to an almost new normal. Even though the final student evaluations are not in yet, the LP model seems to be holding up well in Round 2 and—with the adjustments we made based on what we learned in Round 1—is proving to be a successful design for online learning in noncrisis times as well. Specifically, we made adjustments related to the three tiers of teaching/learning discussed in the article:

1. Learner-to-instructor interaction. We modified the LP report forms to make them stronger vehicles for learner-to-instructor interaction. Aligning the LP discussion prompts more directly with the reporting of results on the LP report form led to more focused discussions and better reporting of results. In addition, we added an open-ended invitation to many of the forms that encouraged the pods to leave questions for us to respond to (e.g., “Any problems or concerns that I can help you with?”). This led to a more vibrant interaction as the report

forms became a kind of (written) conversation between the instructor and individual pods, creating ongoing feedback loops instead of intermittent exchanges.

2. Learner-to-learner interaction. Since it had worked very well the first time around, we kept the pod formation process essentially the same. We are pleased that the pods once again quickly developed their identities as mini learning communities and did quality work together during the pod meetings, as evidenced by the LP report forms. Students passed facilitator and leadership roles around the pod and even developed impressive self-governance. Pod members let their pods know if they had to miss a session, and the pods took care of catching podmates up on missed work or moved the meeting to accommodate special needs. Pods handled the occasional technology glitches with effective workarounds and always got their work to us in a professional and timely manner. This sense of self-confidence and aplomb in operating as an autonomous entity seems more pronounced and profound this semester. It is a delight to see students finding their bearings in the now more familiar online learning environment. To facilitate more multivarious learner-to-learner interaction, we added a discussion board in the three Essay Writing classes to allow students from the entire class to share their insights and questions about the novel we were reading as a class and about which they were to write a literary analysis essay. Interestingly, this new site for interaction beyond the confines of the pods did not work at all. Students, who shared very insightful observations in their pod meetings, apparently had no interest (or need) to expand the discussion beyond their LP.
3. Learner-to-material interaction. Since we were confident in the learning materials we provided for students in Round 1 and received affirmation from students about the usefulness, clarity, and accessibility of the materials, we kept the materials largely the same. We did add a few “just-in-time” documents and calibrated the scope of some of the assignments to allow for greater flexibility and more investment from students in the assignments. In the Essay Writing classes, for example, we gave students more autonomy over their essay topics, which in turn led to a richer student interaction with the learning materials related to the essay assignment. In fact, this led to a kind of ripple effect across the three tiers of interaction: students’ more invested interaction with the learning materials led to deeper discussions in the learner-to-learner interaction, which resulted in a more robust learner-to-instructor interaction about the essay topics.

Overall, this second round of using our LP design indicates to us that this is a very viable online learning model that works well for process-oriented, interactive types of classes—especially for Zoom-weary instructors and Zoomed-out students. Having fixed weekly meeting time slots assigned to each of these classes, which mirrored the structure of a face-to-face class (perhaps a German peculiarity), clearly facilitated this particular set-up and management of pod learning. Of course, that makes this in essence a kind of hybrid online course model rather than a totally asynchronous design. Our next happy challenge will be to see if it is possible to adapt our LP online teaching and learning model to a completely asynchronous delivery format.

## Appendix

### Appendix 1. Sample Learning Pod Report Form.



**Learning  
Pod**

Essay Writing: LP Report Form #6  
Second Discussion of *Remember Me*

LP Name:  
Date:  
Start Time:

End Time:  
Facilitator's Name:

Write down the first name of each pod member in attendance and the narrative strategy they wrote about.

Pick 3 of the narrative strategies you discussed and provide 3 bullet points per strategy summarizing the conclusions your group came to about where and how Clark uses the strategy. Be specific.

List 5 key takeaways about the functions of the history sub-plot in *Remember Me* and in “haunted house” stories as a genre. Be specific.

So what about the ending? Describe 4 things you discussed about how this book will or needs to end.

## References

- Akcaoglu, M., & Lee, E. (2016). Increasing social presence in online learning through small group discussions. *International Review of Research in Open and Distributed Learning*, 17(3). Retrieved from <https://files.eric.ed.gov/fulltext/EJ1102673.pdf>
- Bales, R. F. (1950). *Interaction process analysis*. Cambridge, MA: Addison-Wesley.
- Digitales lehren und lernen an der Universität Paderborn 2019-2024. (n.d.). Retrieved from [https://www.uni-paderborn.de/fileadmin/lehre/UPB\\_Digitales\\_Lehren\\_und\\_Lernen\\_2019-2024.pdf](https://www.uni-paderborn.de/fileadmin/lehre/UPB_Digitales_Lehren_und_Lernen_2019-2024.pdf)
- Dolan, J., Kain, K., Reilly, J., & Bansal, G. (2017). How do you build community and foster engagement in online courses? *New Directions for Teaching and Learning*, 2017(151), 45–60. <https://doi.org/10.1002/tl.20248>
- Ellemers, N., Spears, R., & Doosje, B. (1997). Sticking together or falling apart: In-group identification as a psychological determinant of group commitment versus individual mobility. *Journal of Personality and Social Psychology*, 72(3), 617–626. <https://doi.org/10.1037/0022-3514.72.3.617>
- Entwistle, N., & Entwistle, A. (2005). Revision and the experience of understanding. In F. Marton, D. Hounsell, & N. Entwistle (Eds.), *The experience of learning: Implications for teaching and studying in higher education* (3rd ed., pp. 145–155). Edinburgh, Scotland: University of Edinburgh, Centre for Teaching, Learning and Assessment.
- Fay, N., Garrod, S., & Carletta, J. (2000). Group discussion as interactive dialogue or as serial monologue: The influence of group size. *Psychological Science*, 11(6), 481–486. <https://doi.org/10.1111/1467-9280.00292>

- Flaherty, C. (2020, April 29). Synchronous instruction is hot right now, but is it sustainable. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/news/2020/04/29/synchronous-instruction-hot-right-now-it-sustainable>
- Francescucci, A., & Foster, M. (2013). The VIRI (virtual, interactive, real-time, instructor-led) classroom: The impact of blended synchronous online courses on student performance, engagement, and satisfaction. *Canadian Journal of Higher Education*, 43(3), 78–91. <https://doi.org/10.1177/0273475318818864>
- Hargie, O. (2011). *Skilled interpersonal interaction: Research, theory, and practice*. London, England: Routledge.
- Intercultural Development Research Association. (2020). Ensuring equity in online learning: Considerations in response to COVID-19's impact on schooling. Retrieved from <https://www.idra.org/services/ensuring-equity-in-online-learning-considerations-in-response-to-covid-19s-impact-on-schooling/>
- Johnson, C., Hill, L., Lock, J., Altowairiki, N., Ostrowski, C., Santos, L., & Liu, Y. (2017). Using design-based research to develop meaningful online discussions in undergraduate field experience courses. *International Review of Research in Open and Distributed Learning*, 18(6). <https://doi.org/10.19173/irrodl.v18i6.2901>
- Kemper, D., & Horst, O. (2020, April 9). Corona: Videos und Chats sollen in Paderborn Präsenzlehre ersetzen. *Westfalen-Blatt*. Retrieved from <https://www.westfalen-blatt.de/OWL/Kreis-Paderborn/Paderborn/4184034-Corona-Videos-und-Chats-sollen-in-Paderborn-Praesenzlehre-ersetzen-Uni-nur-online>
- Kreijns, K., Kirschner, P. A., & Jochems, W. (2002). The sociability of computer-supported collaborative learning environments. *Educational Technology & Society*, 5(1), 8–22.
- Kreijns, K., Kirschner, P. A., Jochems, W., & Van Buuren, H. (2004). Determining sociability, social space, and social presence in (a)synchronous collaborative groups. *Cyberpsychology & Behavior*, 7(2), 155–172. <http://dx.doi.org/10.1089/109493104323024429>
- Kreijns, K., Kirschner, P. A., & Vermeulen, M. (2013). Social aspects of CSCL environments: A research framework. *Educational Psychologist*, 48(4), 229–242. <http://dx.doi.org/10.1080/00461520.2012.750225>
- Mehall, S. (2020). Purposeful interpersonal interaction in online learning: What is it and how is it measured? *Online Learning*, 24(1), 182–204. <https://doi.org/10.24059/olj.v24i1.2002>
- Moore, M. G. (1989). Three types of interaction. *American Journal of Distance Education*, 3(2). Retrieved from [http://aris.telug.quebec.ca/portals/598/t3\\_moore1989.pdf](http://aris.telug.quebec.ca/portals/598/t3_moore1989.pdf)
- Norton, R. W. (1983). *Communicator style: Theory, applications, and measures*. Beverly Hills, CA: Sage.
- Owen, W. F. (1984). Interpretive themes in relational communication. *Quarterly Journal of Speech*, 70, 274–287.
- Williams, J. (2020, September 11). Rutgers surveyed students on remote learning, crafted tips for teachers. *Edscoop*. Retrieved from <https://edscoop.com/rutgers-remote-learning-survey-tips-teachers/>
- Xie, K., Hensley, L. C., Law, V., & Sun, Z. (2019). Self-regulation as a function of perceived leadership and cohesion in small group online collaborative learning. *British Journal of Educational Technology*, 50, 456–468. <https://doi.org/10.1111/bjet.12594>