《論　説》

Researching Innovation in Language Education: The Case of the English Café

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Abstract

This paper examines issues pertaining to research methodology that can arise during the planning and execution of studies designed to investigate innovations in language education. In order to address this topic, we draw on the three studies that we carried out in the English Café and the L-café, social spaces for language learning, located on the campus of Okayama University. These studies include an ethnography, a multiple case study, and a narrative inquiry. In this paper we adopt a narrative mode and tell the story of the research process. We begin by describing the research environments – the English Café and the L-café – and outlining the studies. We then examine the evolving theoretical orientation that informed the emergent design of the studies and guided the interpretation of the data. In this section of the paper, we take a close look at how our initial focus on the communities of practice construct led us to adopt an ecological approach that further expanded to encompass aspects of complex dynamic systems theory. In the final section of the paper we reflect on how the expanding theoretical orientation influenced the methodological design of the studies and consider the implications for doing research in innovative language learning environments.

Introduction

Trace any innovation back to its roots and you will most likely find a man or a woman with a vision. This is certainly the case with the English Café, which was created on the main campus of Okayama University. The Executive Director of Education envisaged a space where students could learn to communicate in English in a relaxed, comfortable environment (Tahara, 2016). Renovations to buildings in order to render them earthquake proof provided an opportunity to transform his concept into reality. A corner of a cafeteria, located in a building allocated to student activities, was petitioned off. This room was to become the English Café, a social learning space where learners could learn with and from each other.

In this paper we are not going to trace the development of the English Café nor its later transformation into the L-café. These topics have been well-documented elsewhere (Fujimoto, 2016; Tahara, 2016; Uzuka, 2016). Rather, our aim is to present a research life history in which we tell the story behind the studies carried out in these facilities: an ethnography, a multiple case study, and a narrative inquiry, which culminated in an internationally published book (Murray & Fujishima, 2016). We then reflect on the research process and examine what we learned about

methodological issues surrounding an investigation of a pedagogical innovation in language education.

To begin, we set the scene with a description of the L-café and its predecessor, the English Café. We then outline the three research projects that were carried out in these facilities over an eight year period. The section that follows traces the trajectory of the evolving theoretical orientation, which informed the emergent design of the studies and guided the interpretation of the data. In this part of the paper, we demonstrate how our initial focus on the communities of practice construct (Lave & Wenger, 1991; Wenger, McDermott & Snyder, 2002) led us to an ecological approach (Kramsch, 2002a; van Lier, 2004) that further expanded to encompass aspects of complex dynamic systems theory (Larsen-Freeman & Cameron, 2008). We then turn our attention to a discussion of the paper's central question: What have we learned from this experience about how to research a pedagogical innovation in language education?

The social learning space

As is common with facilities of this nature, such as self-access centers, the English Café (EC) had a very modest beginning as a long narrow room. One side of a ground floor cafeteria was partitioned off with walls that were mostly glass. Although the room was cramped, the windows facing the outdoors on one side and the glass in the walls on the other created an illusion of spaciousness. During the planning process, the manager designed and organized the space, with the support of faculty, staff, and students (Uzuka, 2016). Fortunately at that time, there were students from the US, France, Kuwait, Korea and Serbia who were eager to help. Their participation and visible endorsement of the EC drew in other international students and Japanese students from various faculties, such as Economics, Education and Environmental Studies. From the beginning, the EC became an important place for international students to meet and make friends with Japanese students, and for Japanese to make friends with both international and other like-minded Japanese students.

As the EC became more popular, it was obvious that more room was needed for students to gather. Regular visitors to the EC were bringing their friends to meet for lunch, enjoy conversations, or study together. English lessons taught by international students or senior Japanese students were also being provided and rapidly growing in popularity. By the middle of its third year of existence, the manager was able to get approval for funding to extend the space. Time and money were both limited, and the manager did not have much knowledge in architecture or interior design, so she recruited students to sketch the layout for the extra space, choose the furniture, and decide on color schemes. The EC grew bigger and better, and word spread throughout campus that it was the place to go. The manager was able to schedule more English lessons and the student visitors increased day by day. By the end of its fourth year, there was an average of 75 students visiting the café every day, and more than 300 students attending 46 different kinds of lessons (Uzuka, 2016).

Again, it became clear that more room was needed. In response, the university approved a budget to move the EC to another building with more space where it was transformed into the L-café. Although the obvious difference between the EC and the LC was the size of the venue, on another level the LC became a more multilingual, multi-cultural facility. The program of peer taught lessons and special events – commenced at the EC – expanded. There

was more room for group activities and events, which included a welcome party for the international students arriving in October, a Halloween Party, a Christmas Party, and a farewell party for the international students and graduating Japanese students. On a daily basis, even more students came to meet friends, have lunch, work on projects, and practice their conversation skills. During this time they shared cultural knowledge and helped each other by providing guidance and support on linguistic, educational, and everyday life matters.

The studies

Shortly after the EC opened, teachers from the Language Education Center started going there to lead organized discussion groups comprised mostly of Japanese students accompanied by some non-English-speaking exchange students. We, the authors, not only participated in these groups, but we visited the EC almost on a daily basis. The facility quickly became a place for a small group of international exchange students and Japanese students to gather. If you walked by on the outside and looked in, basically what you saw was students grouped around tables near the main entrance. Some teachers, notably those who were not leading discussion groups, voiced their skepticism that students were actually learning anything in the EC. These critical comments, coupled with our curiosity, prompted us to launch a case study. However, the focus of our inquiry was not if individual students were learning, but rather what learning opportunities were available in the EC.

In order to ascertain what learning opportunities were on offer, we designed an exploratory case study employing ethnographic methods (Yin, 2014). Through consultation with the manager, we selected nine regular visitors to the facility – five Japanese and four international exchange students – to participate in the study. The students, a mix of men and women, were undergraduates, with the exception of two international students who were doing post-graduate work. To better understand who these people were and their motivation for attending the EC, we invited them to write language learning histories at the beginning of the study. In addition to interviewing the participants at the end of the first and second semester, we also interviewed the English Café manager and the vice-director of the Language Education Center who had played a key role in establishing the facility. The interviews were recorded, transcribed, and, along with the language learning histories, analyzed using a categorical content approach (Gaudet & Robert, 2018; Holliday, 2008; Richards & Morse, 2012). Our observations, as frequent visitors and participants in special events, served to triangulate the textual data. Unbeknownst to us at the time, this one-year exploratory inquiry served as a pilot study for a longitudinal research project.

At the beginning of the following academic year, we received a research grant (The Japan Society for the Promotion of Science Grant-in-Aid for Scientific Research (C) No. 23520674) from the Ministry of Education, Culture, Sports, Science and Technology, which enabled us to launch a four-year inquiry. The primarily ethnographic research design of the new study was modelled on the previous one; however, there were three noteworthy exceptions. Most importantly, there was a shift in the purpose. In this study we wanted to explore the impact that long-term engagement with the EC might have on students' language learning; more precisely, the aim was to track the language learning trajectories of ten students from their first year to the end of their fourth year, through their participation in the EC. This meant focusing on Japanese learners because the international exchange students tended to stay for only one academic year. The EC manager, who had now joined us as a co-researcher, again helped select

the participants, men and women who seemed eager to improve their English skills and who came from a cross-section of faculties. The participants sat for the Test of English for International Communication (TOEIC) at the beginning of the study and near the end of each academic year. The second major change was that the grant made it possible to hire three students as research assistants (RAs) for each academic year of the study. The RAs main task was to carry out participant observation and write up field notes which they submitted as weekly reports. The reports were augmented with photographs of daily activities and special events. The third aspect of the study that differed was the theoretical orientation guiding our interpretation of the data, which we will discuss in detail in the next section.

Despite our carefully laid out research design and the experience gleaned from the pilot study, all did not go as planned. Around the end of the second academic year, the participants stopped coming to the EC. Fortunately, we did not panic, but carried on. As it turned out, none of the students officially withdrew from the study; they all wanted to continue meeting with us at the end of each semester for an interview and to sit for the TOEIC at the end of the academic year. Rather than culminating in a failure, the project passed through a bifurcation point, and we now had two inquiries: an ethnography investigating the EC and a multiple-case study exploring the English language learning trajectories of the students from the time of their entry into the university until the completion of their fourth year, which for most meant graduation.

Because the initial participants did not withdraw from the project, we were able to ask them why they stopped coming to the EC. There were three main reasons. Around the end of the second year and certainly at the beginning of the third, their studies intensified requiring more time and effort. Secondly, their club activities became more demanding. As senior members (*senpai*), they were expected to assume a greater share of the responsibilities and serve as mentors to the newer members. Thirdly, like most university students, they all had part-time jobs, which took up a considerable amount of their time. All of the participants expressed regret at not being able to find time to come to the EC and remained adamant that improving their English skills continued to be an important goal for them.

At the end of the four-year data collection period, we had accumulated a substantial amount of qualitative data, which comprised over 125 interviews and reports documenting over 1000 hours of participant observation. As we carried out the thematic categorical analysis, one thing became very clear to us: there were so many people involved in the EC – which later transformed into the L-café (LC) – and each of these people had their own unique story of their engagement and how they experienced these facilities. We decided to pursue this line of inquiry by launching a life history study. We invited administrators, teachers, and students to write about how they experienced the LC (and its predecessor, the EC, if they had been involved there as well), what their role was, and how they felt they benefited from the experience. Stories were collected from seven Japanese and two international students, four teachers who were assigned to work in the LC as language learning support staff, and three administrators – one at the university level and two at the management level of the LC. Their stories, along with our analysis, were published as an edited volume, which meant that each contributor was accredited with a publication (Murray & Fujishima, 2016).

The expanding theoretical orientation

Just as the methodological design of the initial research project expanded and evolved over an eight-year period, so did the theoretical orientation. When we began what was to become the pilot study, we had been doing participant observation at the EC for approximately one year. We were impressed by what we saw as the sense of community that had developed amongst the learners. At this point our thinking was strongly influenced by the community of practice perspective. Wenger, McDermott and Snyder (2002) define communities of practice as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). What we were seeing at the EC was a group of students eager to learn another language and experience other cultures. On a regular basis they exchanged information about the local community or study abroad. The Japanese assisted exchange students with the practical aspects of settling into their new home; for instance, they helped newly arrived international students set up bank accounts. Both groups helped each other with grammar and vocabulary explanations. As members of this community, they were learning from each other, and generally supporting each other through a network of relationships.

On another level, Japanese students interested in the EC often used inquiries concerning the classes on offer as a pretext for a first-time visit. A second visit might be to register for a class and then they would start coming regularly to the classes. The classes gave the students a reason to be there. In community of practice parlance, the classes legitimized their peripheral participation (Lave & Wenger, 1991). Gradually over time, they got to know other students who came to the EC, were accepted as regular visitors, and through engagement in various activities became valued members of the community. In other words, over time the newcomers worked their way from legitimate peripheral participation to full participation. For our part, we came to see that the students' activities and networks of interaction were what constituted the EC.

As we carried out the pilot study, it became clearer to us that the focus of our inquiry was the facility itself as opposed to individual learners who were participating in the project. We were interested in identifying the learning opportunities available in the EC. Later the scope of inquiry expanded to include an exploration of what made the EC the particular kind of learning environment that it turned out to be. Because the object of our inquiry was the environment, we began to explore the literature on ecology (Kramsch, 2002a; van Lier, 2004). The ecological perspective helped us clarify our thinking and influenced the design of the four-year project. To use Lemke's (2002, p. 69) term, it became clear that we needed to look at the EC as an *ecosocial system*. In accordance with van Lier's (2004) guidelines for doing research from an ecological perspective, we focused on the relationships within the environment as well as the participants' relationship to the environment; our analytical notions and constructs were gradually emerging through our observation of the participants' actions and their comments in interviews, thus strengthening the ecological and phenomenological validity of our study; and our awareness of the importance of considering time and space was developing.

Proponents of an ecological approach to research stress the importance of taking different time scales into account (Lemke, 2002; van Lier, 2004). As we made the transition from the pilot study to the main study, we were becoming increasingly aware of several time scales impacting the research environment. There was the Japanese academic year

running from April 1st to March 31st. New Japanese students came to the EC after arriving on campus in April. At the end of the academic year, some students were graduating and leaving to start new lives. It became obvious that we also needed to consider the four-year period during which time most students completed their degrees. Another time scale of major significance was the American and European academic years, which commence in autumn. For the EC this time scale began with the arrival of the international exchange students at the beginning of October and ended with their departure usually sometime in August. There was also the time scale of the two semesters, which comprised the academic year. At most universities in Japan the first semester runs from April to the end of July, and the second semester runs from October to the beginning of February. Classes and other activities at the EC were organized on the basis of the "semester" time scale. Overall, timescales figured prominently in the environment and had an impact on life at the EC/LC and the research.

In addition to making us aware of the time/space relationship, the ecological approach had a significant impact on our research focus. Our perusal of this body of literature introduced us to the concept of affordances. Van Lier (2004, p. 62) contends that when learners are active within an environment or "activity space," affordances present themselves. Gibson (1986), who coined the term, describes affordances as opportunities for action in an environment as they are perceived by the individuals. Examining the construct in relation to language learning (Menezes, 2011) stresses that affordances are not properties of the environment, but, rather, they emerge as learners interact with the environment. Emergence, another key concept of the ecological approach, describes a phenomenon in which elements in the environment interact and self-organize to create more complex behaviors or systems. In the case of the EC and the LC, one of the main affordances that Japanese learners perceived was the potential to make friends with international students and vice versa, international students with Japanese. Under the umbrella of this affordance, any number of opportunities for language learning and cultural exchange emerged. Influenced by the ecological approach, the central focus of our study shifted from cataloguing learning opportunities offered by the EC to identifying the affordances which emerged through the learners' interaction in the environment.

In the first round of interviews, about four months into the pilot study, we wanted to know how the participants would characterize this new learning environment. We asked everybody, "How would you describe the EC?" Every answer started with the phrase "It's a place where…". As we began our analysis of these interviews, the beginning of their response did not seem noteworthy. It was obvious that the EC was a place. However, not long afterwards, one of the authors attended a session on linguistic landscapes (Ben Said, 2011) at an international conference. The presenter's references to space and place shed new light on the participants' responses and led to an exploration of the literature on linguistic landscapes (Jaworski & Thurlow, 2010; Shomany & Gorter, 2009), which in turn prompted us to read work on space and place in the field of human geography. Along the way, we were introduced to the literature on mediated discourse analysis. Conceptualizations of space and place in these areas of inquiry were to guide our interpretation of the data.

For us, the most striking revelation from these bodies of theory was that places are social constructions. From the literature on human geography (Cresswell, 2004; Harvey, 1996; Massey, 1997), we came to understand that places are created through action. People do things in a particular space and then talk about it as an environment in which these activities are carried out. The space becomes identified as a place in which these actions or activities occur.

As Carter, Donald and Squires (1993) succinctly put it, "Place is space to which meaning has been ascribed" (p. ix). These meanings are shared and reified through discourse; in brief, place is the product of action and discourse.

Our understanding of the role of action and discourse in the social construction of place was enhanced by literature on mediated discourse analysis. This area of inquiry focuses on social action as its unit of analysis (Jones & Norris, 2005). As social actions are repeated over time in a particular space, they acquire a history, become linked to other actions, and transform into social practices (Scollon, 2001). The points in time and space where these actions occur and social practices develop are labelled "sites of engagement." A network of social practices, as well as the point where these practices intersect, is referred to as a nexus of practice (Scollon, 2001). These networks have a role to play in the development of self by serving as "the basis of the identities we produce and claim through our social practices" (Scollon, 2001, p. 142). According to Scollon, networks of social practices that become objectified through discourse have the potential to become communities of practice. Mediated discourse analysis enabled us to see the connection between the social construction of place and the communities of practice that emerged within the space.

However, we were also beginning to see connections to another body of thought: complex dynamic systems theory. The ecological approach led us to perceive the EC as an ecosocial system. A turning point for the EC and our research project came when the facility was moved to a much larger location and transformed into the LC. Oblinger (2006) notes that when the space changes, everything changes. In this case the change of space modified the social structure: what appeared to be a homogenous community of practice at the EC divided into several smaller groups when it was transported to the larger space of the LC. These groups came together and interacted to comprise a larger complex system, the LC.

Over the five years of data collection for the ethnography, the more we studied the social learning space, the more it revealed itself to be a complex dynamic system. What we were observing at the LC corresponded with the basic tenets of complexity thinking (Larsen-Freeman, 2015; Larsen-Freeman & Cameron, 2008). In the first place, one of the salient features of complex dynamic systems is that they are comprised of various components which interact with each other. At the EC and the LC the key components were the learners. In a system as the components interact, they can self-organize to produce something new, all on their own without outside direction. Another noteworthy feature of complex systems is that they comprise different levels of organization. Elements interact on one level to produce a new phenomenon on another level – a process referred to as emergence.

Examples of emergence were evident at the EC from the outset. On one level the university had made a physical space available. Then the students started coming. Through their interaction, the students created a kind of learning space that the university administration and the EC management had not foreseen. The manager, who established the EC, wrote that nobody could have predicted what the facility would become (Uzuka, 2016). This points to another feature of complex systems: they are nonlinear. It is very difficult to predict which direction or trajectory a system will take. One of the factors contributing to systems nonlinearity is their openness. When we say that complex dynamic systems are open, we mean that they draw on energy and resources from outside the system. Again, this is another aspect that we observed at both the EC and the LC. They drew on the energy and resources of everybody involved: the international students, the Japanese students, the teachers, the administrators and us as researchers. As open systems, the EC and the LC were in states of continuous change – another key feature of complex dynamic

systems.

Over time we came to see the LC as a complex dynamic system comprised of the network of communities of practice which emerged within the physical space. Furthermore, we came to see the learners and their learning as complex dynamic systems moving across a landscape of possibilities (Larsen-Freeman & Cameron, 2008). The students were engaging in and, indeed, were a part of any number of systems; for example, their classes, clubs, part-time jobs (some taught English at cram schools), and, of course, the communities of practice which emerged at the LC. However, it is important to note that these insights did not come as one epiphany; rather, they emerged over time as our theoretical orientation expanded from a community of practice perspective.

Over the course of the three studies, the theoretical orientation guiding our interpretation of the data extended from an initial focus on the communities of practice perspective to compass theories of ecology, space and place, mediated discourse analysis, and, gradually, complexity. As we conclude the discussion on theory, there are two points we would like to highlight. First, although the foregoing discussion might suggest there was a linear development or progression in our thinking, this was not necessarily the case. True, there is a general timeline in that we started off with communities of practice and ended up with a focus on complex dynamic systems. However, notions of systems and emergence, for example, seeped into our thinking even before we started exploring theories of space and place. Secondly, in retrospect, the nonlinearity of our theoretical trajectory should not be surprising given that all the bodies of thought we explored are interrelated. The ecological approach is concerned with systems: *ecosocial systems*. Mediated discourse analysis focuses on space and place in the form of sites of engagement. Furthermore, Scollon (2001) recognizes that networks (or systems) of social practices, which develop at these sites of engagement, have the potential to become communities of practice. Elsewhere, Capra and Luisi (2014, p. 316) argue that organizations can become "living social systems" (in other words, complex dynamic systems) when communities of practice develop within them. The bodies of theory informing our studies are not only compatible but they are mutually inclusive – supporting and sustaining each other.

Doing research

In this section of the paper, we shift the focus away from theory to issues pertaining to research design and methodology. More specifically, we focus on what we learned about doing research in an innovative learning environment. In the previous section we provided a detailed account of the theoretical trajectory because, as we demonstrate here, the expanding theoretical orientation had a direct impact on the evolving methodological design of the research. Theory and method are so closely entwined that to tease them apart is like separating the dancer from the dance (Kramsch, 2002b).

From the outset of the study we adopted a grounded theory approach, which supported the expansion of the initial theoretical framework informing our thinking. Throughout the study we referred back to the literature as the process of coding and categorizing the data revealed new concepts which eventually coalesced to form topics or themes. An example of this would be the numerous references to place, which eventually led us to explore the literature on space and place in the field of human geography. Reflecting on the data from the perspective of spatial theory, which views

places as social constructions, eventually led us to the theme of the English Café being an emergent phenomenon. Put differently, the English Café, as we knew it, arose from the interaction of the students and the discourse their actions generated.

How we arrived at this insight highlights three important methodological points related to data analysis. First and foremost, it is essential not to overlook the obvious. In this instance, the word "place" appeared frequently in the interview data. Initially, we did not react to the frequency with which this word appeared. Of course, the English Café was a place. However, as mentioned earlier, a serendipitous event, one author's decision to attend a conference presentation on linguistic landscapes (Ben Said, 2011), led the authors to explore the literature on this topic, which in turn drew their attention to theories of space and place in the field of human geography. The second methodological point is that researchers need to be mindful of serendipity, and closely examine serendipitous events. Thirdly, researchers need to be willing to look to theory outside their immediate field of inquiry. In keeping with the essence of grounded theory, researchers need to let the data speak and go where it leads them.

While the metaphor (or, more aptly, the personification) of letting the data speak may be intriguing, it is not very helpful unless it is accompanied by some tangible means for coaxing out insights. In other words, which strategies or procedures might a researcher employ in order to have the data speak to them? Perhaps the best explanation has been provided by Plummer (1983, as cited in Cole & Knowles, 2001). Plummer says, "It is the hardest process to describe: the standard technique is to read and make notes, leave and ponder, reread without the notes, make new notes, match up notes, ponder, reread, and so on" (p. 99). Clearly, the process is an iterative, nonlinear, and even creative one. To Plummer's description we would add that in between these steps it is important to return to the literature in order to look for theory which might help to explain, or enable researchers to clarify, what the data are saying.

Another strategy that we have found helpful is to ask questions of the data (Lather, 1986). Our initial ethnography was not designed to explore space and place. While this might be viewed as a limitation of the study, if researchers are embarking on a grounded theory approach, they have to be open to the possibility that the data will lead them in a theoretical direction they could not foresee at the outset. Once we had collected the data and begun the analysis process, we were steered in the direction of spatial theories in the field of human geography. Informed by this literature, we posed the following question: how did the space evolve into the particular kind of place for learning that students recognized as the English Café? Similarly, our narrative inquiry was not intentionally designed as a study informed by complex dynamic systems theory. Nonetheless, asking the question, how did the L-café become a complex dynamic ecosocial system, enabled us to identify components that interacted to generate this emergent phenomenon. Based on our experience, we would advise researchers, especially novices, not to hesitate to ask questions of their data. Then it is important to listen carefully to what the data have to say. This strategy takes on added significance in exploratory research probing pedagogical innovations.

When researchers are examining innovations in pedagogical practice, another important strategy is to listen carefully to what the data might be suggesting about commonly accepted constructs. Researchers should be open to reflecting on constructs and possibly reconceptualizing them in view of any insights emerging from the analysis. So-called everyday concepts, whose meanings can be easily taken for granted, often form the basis of our assumptions.

Our studies led us to reconsider the notions of context and learner. These terms are ubiquitous in language education research to the point that when reporting on their studies researchers do not feel compelled to define them. Everybody has an understanding of the basic meaning of these terms. Therefore, what researchers do is identify the learners and contexts in their inquiry by providing specific details which set them apart from others in different settings or circumstances. Like Benson (2021), who eschews the word context in his work aimed at providing a conceptual framework for the exploration of space in second language acquisition research, we, too, found the idea of context not sufficiently grounded in space and place. Therefore, rather than use the word context, we prefer to speak of environments, settings, and, more specifically, ecosocial systems. This more space-grounded vocabulary enables us to envisage more clearly the interaction of the learners within the network of systems under study.

Looking more closely at context as a construct led us to rethink the notion of the quintessential learner. Our thinking has been influenced by van Lier (2004), writing from an ecological perspective, and Larsen-Freeman and Cameron (2008), promoting a complex dynamic systems approach – as well as others – who argue that learners must be seen as part of the context. Ushioda (2015), for example, notes that, while in second language acquisition research, learners have usually been viewed as situated within a context which acts upon them, from an ecological perspective, learners are seen as shaping and being shaped by the context. Complex dynamic systems theory suggests that this is made possible through the process of co-adaptation (Larsen-Freeman & Cameron, 2008). A change in one component of a system requires the other components to adapt, hence, generating change in the system. Larsen-Freeman and Cameron (2008) argue that learners themselves can be viewed as "a unique learning context, bringing a different set of systems to a learning event" (p. 240). When an individual learner participates in a group, which is in effect a system, the group both affects and is affected by the learner. Therefore, Larsen-Freeman and Cameron stress that in order to understand learning processes researchers need to collect data about learners as members of groups and as individuals working alone. They write, "When researching groups, we need to see them as interconnecting systems of individuals" (p. 240). In our case we were researching a learning environment which we saw as a system of communities of practice in turn comprised of systems of individual learners. The individual learners comprised the communities of practice and the communities of practice constituted the learning environment. As the manager noted, it was the students who made both the English Café and the L-café (Uzuka, 2016). Employing ethnographic and case study approaches – and later launching a narrative inquiry – enabled us to study these facilities as interconnecting systems of individual learners.

In addition to influencing how we viewed learners and the composition of the learning environment, adopting a complex dynamic systems perspective had a profound effect on our approach to data analysis. We discovered that rather than examining the data to glean insights which would enable us to make predictions, we were actually engaging in a process referred to as retrodiction. Because it is very difficult to predict what a complex system will become or which direction it will take, researchers adopting a complexity approach engage in retrodiction. Rather than producing predictions in the form of testable hypotheses, researchers explain the current state of a system in terms of the preceding state (Larsen-Freeman & Cameron, 2008). As Chen, Dörnyei and Henry (2014) describe the process, researchers first identify end states or outcomes in a system's behavior, and "then work backwards in a retrospective manner to uncover the developmental trajectories that led to those settled states" (p. 238). For example, in the early phase of our inquiry, we observed that a community of learners had emerged at the EC. Working

backwards from what we saw as the present state – that is to say, the existence of a community of learners – we were able to identify a set of affordances that served as the basis for the development of this community (Murray & Fujishima, 2013).

While retrodiction will not necessarily support predictions, it can lead to expectations based on experience that can serve to inform future action (Larsen-Freeman & Cameron, 2008). Retrodiction can help researchers identify constructs which, when taken as an ensemble, can constitute provisional models. These models have the potential to provide insights into the phenomenon under study and to guide decision-making. In our narrative inquiry, inspired by Bruner's (2002) assertion that stories provide models of the world, we used retrodiction to identify components of the L-café that could serve as a provisional model of a social learning space (Murray & Fujishima, 2016). Our goal was to construct a model that might inform the work of educators interested in establishing this type of facility. However, more than that, our intent was to provide a model of a learning environment that was a complex dynamic ecosocial system. Davis and Sumara (2006) note that while "complexity cannot be scripted or managed into existence…it can sometimes be occasioned" (p. 152). In this case, narrative inquiry helped us identify elements that, when incorporated into the development of a social learning space, might facilitate the emergence of a complex dynamic ecosocial system. Of course, the ultimate educational aim is that, through engagement with such an environment, learners can generate any number of affordances for language learning (Murray & Fujishima, 2013).

Conclusion

To conclude, we summarize our answer to the question posed at the beginning of the paper: What has experience taught us about how to research a pedagogical innovation in language education? The whole point of innovation is that it incorporates or gives rise to something new. Therefore, it is essential to employ a research design that minimizes the possibilities of enmeshing the researcher in a web of fixed preconceived notions. In our case we started with an exploratory inquiry informed by a grounded theory approach and guided by a general research question. As our initial study progressed and our curiosity was piqued by what we were seeing in the data, we continually referred to the literature.

Through engagement with theoretical notions that were new to us, our initial research question evolved and others came to light. Clearly, it is important for researchers to be open to the possibility that their research question could change mid-study. Through ongoing data analysis and perusal of the literature, our initial research question, what learning opportunities were available in the EC, transformed into what affordances for learning emerged in this environment. This change was facilitated by the broadening theoretical orientation. While it is essential to have an initial theoretical framework to guide the study, it is equally important not to adhere too adamantly to a particular body of thought. Researchers should adopt an emic approach and let constructs or notions arising from the data guide them in their continuing exploration of the literature. An expanding theoretical perspective can not only give rise to new research questions but can also have an impact on the research methodology. The studies discussed here illustrate how closely theory is entwined with methodology. Theory shapes the methodological design of the inquiry and, in turn, theory is formulated on the basis of insights revealed through the application of the methodology.

When investigating a pedagogical innovation, it is important to understand how the innovation works. If it appears to be producing desirable or perhaps even unexpected outcomes, it makes sense to question how the practice or set of practices goes about doing this. A first step in answering the question is to identify the individual components at play. However, complex dynamic systems theory encourages researchers not to stop there. Rather than fixate on the individual components, complexity thinking requires researchers to explore how these elements work together to produce the desired outcomes – something bigger than the sum of the parts. For us, this meant employing an analytical approach known as retrodiction and asking how the various elements within the learning space came together to produce a complex dynamic ecosocial system. In educational research one of the crucial components of any learning situation is the learners. Therefore, researchers need a methodology that enables them to study learners as individuals, but which also facilitates examining their interaction with other learners as well as the non-human elements that comprise the environment. In our case, a combination of ethnographic, case study and narrative approaches enabled us to study individual learners without losing sight of their role as vital components supporting the emergence of the EC, and later the LC, as a particular type of learning facility.

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