

Factors Influencing the Establishment of Professional Development Network During Emergency Remote Teaching: An Activity Theory Analysis

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Abstract

Professional development networks (PDN) can improve learning, knowledge sharing, and school objectives. Most research conducted on PDNs are evaluative and examine the outcomes of existing PDNs or highly structured newly formed PDNs developed specifically for research purposes. Much is unknown about the sociocultural influences that affect the development of organically formed PDNs. Using qualitative methods and cultural-historical activity theory (CHAT) as a lens, this study examines the experience of four teachers engaged in the development of a newly formed professional development network focused on developing the digital skills necessary to cope with the switch to emergency remote teaching during a global emergency—COVID-19. Results indicate that the usual formal/informal dichotomy between PDNs does not necessarily always hold true. A CHAT analysis of the formation of the committee demonstrates how an ad hoc PDN can be transformed into a formal top-down network. Furthermore, the analysis demonstrates the significant mediating role of communication tools in establishing and maintaining a PDN.

Keywords: *Emergency Remote Teaching, Professional Development Networks, Cultural Historical Activity Theory, ICT*

Background

With the advent of the novel Coronavirus (COVID-19) and the subsequent declaration of the global pandemic in March 2020 (Cucinotta & Vanelli, 2020), universities worldwide started to rapidly adapt their curricula to comply with health and safety guidelines (Marinoni, et al., 2020). In Japan, the majority of universities switched from face-to-face classes to hybrid or fully online learning (Mainichi, 2020). At Rikkyo University in Japan, an ad hoc committee was formed in the foreign language department in order to facilitate the development of the necessary skills in quickly transitioning to online instruction among faculty members. This digital communication committee (DCC) was tasked with developing and distributing materials to assist faculty in the use of information and communication technology (ICT). The emergency nature of the committee, along with the unprecedented nature of their task, meant that the specific goals and methods of the committee were initially undefined. Thus, the committee was forced to improvise in developing these materials whilst navigating the technological and cultural landscape of early emergency remote teaching in Japan—a country that consistently ranked the lowest amongst developed countries in terms of the use of online tools across industries prior to the pandemic (Inoue, 2021).

As the committee's work progressed, it began to focus on three key activities: the development of a website with original information and tutorials on the use of ICT in online instruction, as well as curated lists of links to other existing sources of information; the creation and sharing of videos explaining the use of specific ICT tools (e.g., Blackboard, Zoom); and the creation and running of a helpdesk to answer faculty questions about ICT in the context of online language teaching. In this way, the activities of the committee intersected with the activities of other academic units on campus, becoming influenced by the university's internal logic (Shangraw & Crow, 1998). The overarching

design of an organization that guides the decision-making process of individual actors is difficult to describe (Crow & Shangraw, 2016). In this study, we adopt the analytical vocabulary of cultural-historical activity theory (CHAT) because it provides analytical concepts for describing the sociocultural relationships, that is, the relationship between individual actors, the organization in which they act, and the larger cultural (or global) context, that dictate what teachers can and cannot do. In adopting this theoretical framework, we hope to clarify the relationship between the activities of the committee, others in the same department, and the rest of the campus. As we will show, the DCC acted as the nexus for a professional development network (PDN) unique to the historical moment: The rapid transition from face to face to online teaching in response to COVID-19. This PDN was both peer-to-peer or bottom-up—in that it started as an informal collection of like-minded instructors attempting to prepare for and share knowledge about emergency remote teaching (ERT)—and regulated or top-down—as it was integrated into the foreign language department’s official committee structure. This combination of peer-to-peer and formally structured elements affected how the committee functioned within the university system.

Literature Review

Professional Development Networks

Broadly construed, PDNs are platforms, or combinations of platforms, that allow instructors to search for and share professional development knowledge (Trust, 2015). They make use of social networks, collaboration, and online tools such as wikis, forums, and social media groups (e.g., LINE groups), to find and share resources, links to useful websites, lesson plans, and other relevant knowledge (Trust, 2017). In the last decade, education scholars and practitioner researchers have investigated the impact of ICT on learning spaces. In an early influential paper, Siemens and Matheos (2010) theorized that such spaces—in both formal and informal educational contexts—will become more fluid: Educators will take advantage of the network aspects of ICT to create personal learning environments or open network learning environments. In these spaces, teachers and learners creatively integrate different online tools in highly personalized ways to accomplish teaching and learning tasks (e.g., Tu, et al., 2012). Whereas this research has largely focused on how students accomplish tasks in online spaces, the concept of the PDN provides a means of describing how teachers, functioning within a larger organization, accomplish tasks in a networked environment.

PDNs can be categorised as either formal or informal groups. Lantz-Andersson et al. (2018) examine both “formally-organised and informally-developed” professional development groups and explore the contexts in which these groups formed. Lantz-Andersson differentiates between formal and informal groups in terms of the manner of the groups’ initial creation. They define formal groups as “top-down professional development endeavours, initiated by schools...” (p. 304). In contrast, informal groups are defined as “bottom-up initiatives involving a group of practitioners who choose to come together to discuss, share information and work together”. Macià and García (2016) focus their survey on informal networks and communities for teacher professional development. They define informal communities or networks as “collaborative processes of knowledge sharing” of informal learning mediated by technology, using Watkins and Marsick’s (1992) definition of informal learning as “learning from experience that takes place outside formally structured, institutionally sponsored, classroom based activities”.

Previous studies have demonstrated the benefits of PDNs on development of institutional goals

(Rieckhoff & Larsen, 2012), teacher professional skill development, confidence, and knowledge sharing (Alemdar & Rosen, 2011; Cutts, et al., 2017; Trust, 2017), and student learning and social justice (Lawrence & Dubetz, 2001; Thomas, 2007). However, PDNs are socioculturally complex spaces (Burns Thomas, 2004) with barriers that can negatively impact and shape the components of the community.

Lantz-Andersson et al. (2018, p. 310) found that time issues were a significant barrier to participation in informally developed online learning communities. Teacher participation in the communities was “often conducted after regular school hours” and could be seen as intruding on teachers’ time outside of work. Macià and García (2016, p. 300) discovered that a “gradual lack of engagement” results in members using the network less to the point of “drop out”. They also found that reluctance to participate was the result of fear of criticism, and insecurity in “sharing [their] own ideas” proved a barrier to participation.

In contrast to the large number of studies of formal professional development (e.g., Cutts et al., 2017; Lavicza et al., 2010) communities, there is a dearth of research on informal PDNs, and in many cases, the informal communities that are analysed were not “organically” formed, but were developed specifically to be researched (Macià & García, 2016). Moreover, despite the extant literature demonstrating the sociocultural complexities that shape PDNs and their components (Thomas, 2007; Trust, 2017; Warschauer, 2020), research that specifically examines sociocultural influences that affect PDN formation has unsurprisingly received little attention until now. This study aims to add to the literature by examining the sociocultural factors that influenced the emergence of an informal PDN created to address the challenges facing a language department at a university in response to a global emergency—including the changes that PDN underwent as it was formalised by the institution.

Emergency Remote Teaching (ERT) Context

ERT is defined by Hodges and associates (2020) as the rapid and temporary move to online learning in times of crisis or emergency. Hodges states that it is important for institutions to recognise the difference between ERT and well-planned online learning experiences. Rapid transitions to online learning present many challenges and obstacles (Crawford et al., 2020); thus, how instructors go about the work of planning and conducting their classes will be significantly different from stabler times. The same distinction applies to how teachers search for and share professional knowledge during times of stability as opposed to times of crisis (Webster-Wright, 2009), where the most important factor is time: The transition from face to face to online in ERT situations is by necessity short.

One significant difference intrinsic to ERT is the need for flexibility in defining pedagogical policy, and the ways that faculty knowledge is shared. Gacs and associates (2020) recommended that whilst universities should provide teachers with ample technological and other professional development training for online teaching, during emergencies, instructors “may need to rely on ad hoc or already established personal learning networks” (Gacs et al., 2020). Similarly, as Hodges et al. (2020) state, expectations of quality must also be tempered. During the first year of the COVID-19 pandemic, two thirds of higher education institutions reported replacing face-to-face teaching with distance learning (Marinoni et al., 2020). As noted above, Japanese universities were notoriously slow to adapt to online technology before the pandemic (e.g., Funamori, 2017), which makes the implementation of ERT policies particularly difficult (Inoue, 2021).

Theoretical Framework

What is Cultural Theoretical Activity Theory (CHAT)?

CHAT provides a framework for analysing decision making in communities through examination of relationships between goals, actors, and tools, and the cultural and historical context within which they act as members of some community. (Cole & Engeström, 1993). CHAT considers the *activity system* as the “primary unit of analysis”. (Engeström & Sannino, 2021). Activity systems define networks of sociocultural contexts and the structures and tools that shape actors and their behaviour in attempting to achieve goals (Engeström, 2000). Activity systems can also include the interaction of smaller sub-systems (Engeström, 2001) (See Figure 2). Each individual actor in a community can be considered a system, as much as collections of actors in a like-minded group can. Activity systems consist of an object, one or more subjects, mediating artefacts (tools), a community, division of labour, rules, outcomes, and contradictions (See Figure 1) (Cole & Engeström, 1993). The individual elements are described further below. As noted above, CHAT provides useful tools to analyse complex sociocultural situations (Bligh & Flood, 2017) and thus was selected as an appropriate theoretical framework to examine the evolution of the PDNs in this study. Figure 1 below depicts the key features of the chat model and the dialectical relationship between them.

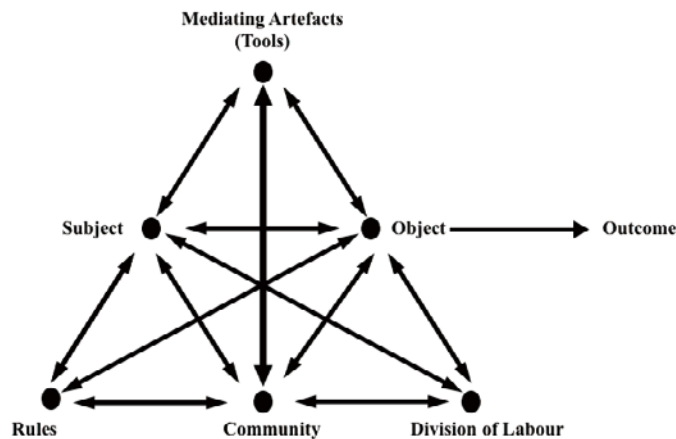


Figure 1. An activity system and its dialectical relationships

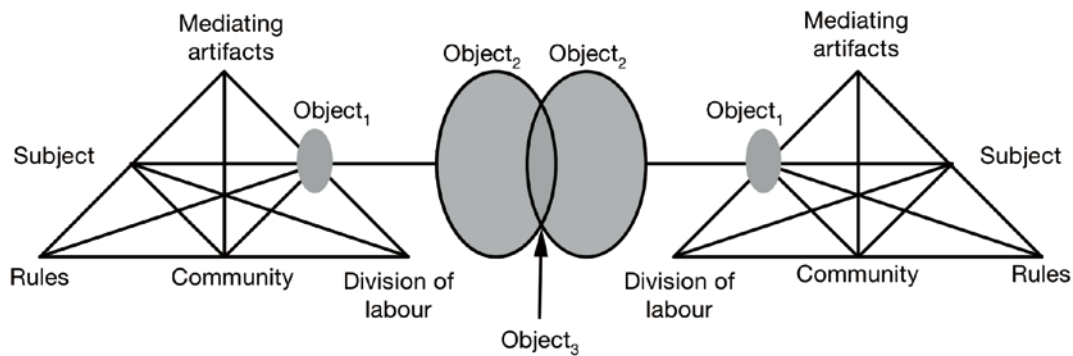


Figure 2. Two CHAT activity systems interacting inside a larger system (Engeström, 2001)

In order to reduce the scope of analysis, this study focuses on the DCC activity system in and of itself and will not be considering the greater activity system of the institution in the data analysis.

Object

According to Leont'ev (1978), actors are motivated by and towards an external object. This object is the goal or motivating force for an activity system. Objects are transformed into outcomes by the actions of subjects within a system (Engeström & Sannino, 2021). Each subject within a system may have a different motivating object, and therefore may make different decisions than other actors in the same system.

Subject

The subject of a system is the person or persons acting within the system towards some object. Subjects are affected by their actions, the actions of others, and their conflict or interaction with other elements of the system. Subjects' motivations towards the object shape their experience and behaviour within the system.

Mediating Artefacts (Tools)

Tools are resources (cognitive or material) that mediate the subject's actions within a system. Cognitive tools can be socially shared frameworks (e.g., mathematics, times tables) or personal understanding of the external world. Material tools can be physical (e.g., a ruler, a pencil) or more abstract (a website or social media page). The tools chosen by subjects shape their decisions and their potential actions within a system. Changing toolsets greatly modifies the context of an activity system.

Community

Community is the group of subjects working towards the object within a system. Whilst individual subjects within a system may have differing objects, they are understood to be mutually motivated to act within the activity system to share some of the system's cultural context.

Division of Labour

Each member of a system has a different role, which is negotiated by the community based on sociocultural rules, the member's abilities and knowledge, and the member's interests and motivations. Members' roles may change as subjects interact with the system and pursue the object.

Rules

Rules regulate the behaviour of the subjects in their pursuit of the object. Rules may be formal (e.g., work contracts, labour laws) or informal (e.g., sociocultural norms, community hierarchy). These rules create the structure within which culturally appropriate action may be undertaken in the system and indicate the place of subjects within the community.

Outcome

The outcomes are the consequences that a subject experiences owing to their pursuit of the goal. These outcomes need not be the realisation of the object of the activity. They may be the unintended consequences of the activity system, or even results that the subject perceives as negative.

Contradictions

Contradictions are the internal conflicts of an activity system. These conflicts may exist within a single activity system (e.g., between rules and division of labour), between two or more objects (e.g., tension between subjects with different goals), or two or more activity systems (Roth & Lee, 2007; Trust, 2017). Contradictions may lead to changes in the activity systems at a fundamental level.

Using CHAT as a framework allows researchers to understand how instructors formed a PDN and pursued the goals of finding and sharing knowledge with peers in the context of the early ERT period. CHAT in particular provides insights into the tensions and contradictions of interactions between objects, tools (significant in the case of ERT), and subjects in this fraught sociocultural context.

Methodology

Research Question

- What factors influenced the formation and functioning of the DCC?

Data Collection

Data collection was designed to, as much as possible, fully reflect the experience of each subject in the activity system. Data were initially collected through a 90-minute interview and discussion over Zoom with all four members of the committee. At the beginning of the discussion, the basic elements of CHAT were outlined and explained to the members of the group (object, subject, tools, community, division of labour, rules, outcome, and contradictions). The reasons for choosing CHAT analysis were discussed, and then the discussion proper was undertaken. Each element of CHAT was discussed in the context of the committee’s work, and each member was asked to give their definitions of that particular element and describe their experience of this element. For example, the first question asked during the discussion was “What did you perceive the purpose of the committee to be?” This question was designed to elicit the object of the activity system from the point of view of each subject. Another question asked later during the discussion, in order to elicit subjects’ perceptions of contradictions within the system, was “Did you experience any other kinds of... friction or tensions in any of ...the rules or the community or the tools...?”

The discussion was conducted via Zoom considering Zoom’s automatic transcription feature. This made analysis of the discussion afterwards much simpler. Any issues with the automatic transcription were clarified with the relevant members via email.

The first question of the survey relating to the framework is show in Table 1:

Table 1

Question 2 of the survey

Object=The goal of the activity.
“Creation of a committee that provided resources to help teachers get online.”
How far would you agree/disagree that this was our “object”. If you were to change it, how would you describe the object we were working on?
Members of the committee were given a textbox to add their optional response.

Each subsequent element of CHAT was presented in a form with the answers that the researcher had extracted from the initial discussion. Outcomes were split into two questions, positive and negative. Question 8 (positive outcomes) was as follows:

Table 2

Question 8 of the survey

Outcome=result of the activity. (any other positive outcomes)?
Positive:
i) Provided faculty support for technical issues during the first academic semester of the pandemic.
ii) Experience of working between different cultural groups and committees within Japanese universities
iii) Insight into the different users that would need faculty development related to digital skills
iv) Recognition from peers who were helped during the time the committee was active and those that still use the videos today
v) Recognition in the Zenkari newsletter about our activities
vi) Conducting this study informed self-reflection and transformative learning
vii) Empowered - gave the ability to make the website and videos
viii) Motivating - respect for expertise separate from language teaching
ix) Individual skills improved - e.g., how to create an institutional website
x) Developed stronger professional relationships with those we helped

Again, members were asked to provide further examples or corrections.

Data Analysis

An iterative approach was used to analyse the data. This began with multiple readings of the interview transcript to immerse the researcher in the data and gain an overarching perspective of the responses (Hsieh & Shannon, 2005). Data immersion and discussions about the data enabled the researchers to engage in a reflective process reflecting on personal beliefs that could potentially bias the data analysis and interpretation (Creswell & Poth, 2016). Following this the transcript was entered into Atlas.ti and an inductive approach based on grounded theory (Corbin & Strauss, 1990) guided the coding where in vivo coding procedures were used to maintain the integrity of the participants' words and experience (Miles et al., 2014).

Once this initial coding was complete, a constant comparative method (Glaser, 1965) was performed on the codes to group similar ideas together and create categories centered on the factors that influenced the development of the PDN identified by the committee members. These data were organized within the activity theory framework categories.

The coding and analysis of the transcript was conducted by one member of the research team who then conducted a member check with the other members to triangulate her findings and provide stronger reliability of the qualitative analysis. This second data collection was conducted via online survey form. Initial key themes that emerged from the data analysis were shared with the other team members to resolve differences in interpretation and examine any new ideas related to the categories that emerged from the data in relation to the central research question guiding the study.

Findings

Figure 3 demonstrates the emergent themes from the DCC activity system. The following sections details the elements and how they shaped the development and functioning of the DCC.

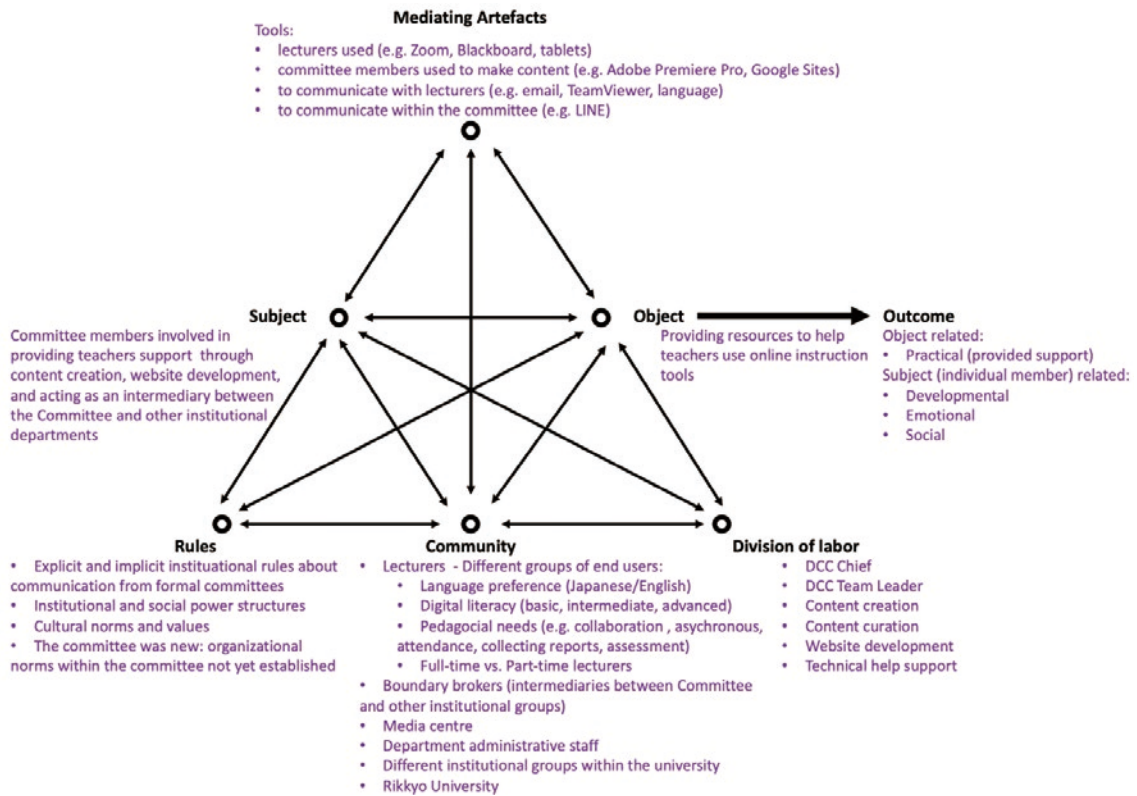


Figure 3. The Digital Communication Committee activity system elements

Object

Committee members' actions were shaped by the object of providing resources to help teachers be able to teach their coursework online during the pandemic, which for health and safety reasons, compelled the university to stop face-to-face classes and offer online instruction. However, given the new formation of the committee the object changed with time and as rules and boundaries became apparent (discussed in more detail later). For instance, before officially forming the committee, members were involved with support in informal development meetings with teachers that explored different tools, and pedagogical methods to support online instruction. However, upon formation as a formal committee the object was limited to provision of support for university endorsed tools (i.e., Blackboard, Zoom, Google for Education – Classroom, Drive, Docs, Slides, Sheets).

Subject

The subjects included the committee members and the committee chief. The committee members were involved in the sourcing and creation of content and provision of technical support to faculty that needed help getting online. The committee chief acted as an intermediary between the DCC and other committees and departments within the university and exercised final decision-making authority regarding what would be displayed on the website and through email. Each subject brought with them their own pedagogical values, social and institutional expectations, and digital expertise that also shaped the activity. For instance, some committee members had already been using Blackboard extensively and thus were able to provide many resources and step-by-step tutorials on how to use Blackboard in relation to specific courses at Rikkyo. Others had experience using the Google for Education suite and were able to provide resources on that. Members had been

involved in informal groups supporting faculty before the formation of an official committee. Requests and feedback from these meetings initially informed early content creation and included innovative pedagogical methods such as collaborative online tasks and discussion forums. However, institutional expectations informed the chief's decisions on what could be published on the final website, which then altered the content created by the members. As such the social and institutional positioning of the subjects mutually informed each other serving to redefining the object and the outcome.

Tools (Mediating Artefacts)

The mediating artefacts in the DCC can be grouped into four categories:

Tools lecturers needed for instruction

This included technology to support synchronous teaching (e.g., Zoom, Google Documents, Slides), technology that supported classroom management (e.g., Blackboard, Google Classroom), and the devices that the teachers and their students used (i.e., tablets, smartphones, laptop computers, web browsers). These tools mediated DCC activity as it provided a basis for the content for the DCC website. Moreover, there were different types of technical support offered to the teacher depending on the tools that they had. For instance, a teacher was not able to access any of the online tools provided by the university because of blockers installed in her browser. The team leader interacted remotely with her to resolve this issue.

Tools that committee members used to make content

These included technology for editing such as Adobe Premiere Pro for videos, Audacity for sound clean-up, screen capture tools, Google Sites, and websites to source professional license-free images and content (e.g., Blackboard how to videos). Video creation and editing took on average 1 hour per video. This affected the speed at which the content could be uploaded to the website. The team overcame this by also curating content from official sources (e.g., Blackboard, Google for Education) and then removing the links as official videos addressing specific needs of the university were added (e.g., how to merge courses for eLearning).

Tools and artefacts used to communicate with lecturers (users)

These tools included Zoom for meetings, TeamViewer to interact with their computers remotely, email for official notices of the committee work, and as a place for teachers to contact when they had issues. Apart from the chief, the committee members are all native English speakers with intermediate to high levels of Japanese proficiency. However, the lecturers that the committee supported included Japanese teachers as well as other foreign language teachers for example French, Italian, Chinese, Spanish, Korea. The website was primarily in English, and this may have mediated the support for lecturers who were not confident with their English abilities.

Tools for communication within the committee (e.g., LINE, email, Zoom)

Email and the Japanese social networking platform, LINE, were used for simple and immediate communication; however there were limitations in terms of the depth we could discuss topics. Consequently, Zoom was used for synchronous meetings with the team members. This allowed faster decisions when we needed to clarify collective objectives. However, it was hard to coordinate a

time at which everyone could meet simultaneously.

LINE mediated the communication within the committee. As it was attached to our smartphones, we received notifications which compelled us to respond to comments right away. This affected our work-life balance as we were more likely to respond to LINE communication off-hours compared with email, which we might wait on until the following business day to respond. Furthermore, the informal nature of LINE seemed to affect communication as there were jokes and comments in the LINE group that might not have been in an email thread.

Community

The community in which the DCC operated consisted of several groups of individuals that affected the DCC activity.

The largest group were the lecturers. These were the end users of the DCC, and their characteristics influenced the object and outcome of the DCC. These characteristics included the following:

- language preferences (Japanese/English/other)
- digital literacy (basic, intermediate, advanced)
- pedagogical needs
- full-time vs. part-time lecturers

These different characteristics affected communication and the support provided for example, language could affect the type of tools they had (e.g., English/Japanese/other language operating systems), digital literacy affected the type of technical support they needed, and pedagogical needs informed the type of content they wanted. Teachers wanted information on how to teach in the way they taught in their face-to-face classes. Those that used collaborative active learning methods wanted information on how to do the same online, while others who preferred teacher-fronted lecture-based methodologies sought technology and systems to allow them to do the same. Finally, lecturers could be divided into full- and part-time lecturers. Many of the support issues that we received were from part-time lecturers. Often part-time lecturers are working in several different universities with different systems. They may only have two classes with the university so many are not as familiar with the tools of a particular university compared with the full-time staff. Moreover, they sought to minimize the new technology that they had to learn. For this reason, some indicated that they preferred Google Classroom over Blackboard because they could easily create new classroom spaces for classes in the other universities they worked at but not Blackboard, which required institutional support.

The university media centre provided extensive technical support; however, it was all in Japanese. Many foreign language lecturers did know about the support they could get due to limited Japanese (e.g., they might not read the Japanese emails sent out by the media centre). The DCC committee connected the lecturers to the media centre by linking the DCC website to the media centre and the specific page where lecturers could go for additional support for online teaching.

Other departments and the Rikkyo university community also affected the activity of the DCC. Although within the foreign language department, there are different pedagogical methodologies, for the most part, lecturers sought communicative approaches due to the nature of our subject matter. However, across the university there was a wide range of subjects that did not use similar methods.

As such (as discussed in more detail in the rule section below) our “official” activities and communication were constrained by what was deemed appropriate for the overall community.

Division of labour

DCC members performed different roles within the committee (Table 3). The DCC chief was a tenured professor and acted as an intermediary between the committee and other institutional groups. As the chief, they interpreted the institutional needs, rules, and expectations for formal communication from the committee and thus exercised final authority of what content could be included on the website and how the committee was positioned in emails.

The DCC team leader performed all the same tasks as the committee members and additionally acted as an intermediary between the chief and the regular members. This entailed presenting the result of discussions collectively made within the committee to the chief. This role relieved the chief of being involved in all discussions and helped save the face of committee members during discussions as they would be able to express opinions and concerns freely.

All committee members except the chief were responsible for content creation (making new content), content curation (sourcing relevant, appropriate content), website development, and technical help support (responding to lecturers’ requests by email, Zoom, or in person).

Table 3
Roles within the committee

Role	Description
DCC Chief	• Intermediary between the committee and other institutional groups. Final decision-making authority of content published on formal lines of communication.
DCC Team Leader	• In addition to all the duties of a committee member, the team leader acted as an intermediary between the committee members and the chief.
Committee member	• Responsible for content creation, curation, website development, and technical help support.

Rules

Explicit and implicit institution rules affected the activity. Once formed as an “official” committee, the content that we could prepare to provide information on the official communication channels (e.g., DCC website, email) was limited to technologies that were officially endorsed by the university (e.g., Zoom, Blackboard, Google for Education). Explicit and implicit expectations about how the technology was presented also informed content. For instance, as an official committee, members worked harder to make content better using Rikkyo colors and spent longer editing to make sound and images flawless. Further, to avoid conflict or confusion, materials that were viewed as potentially controversial, such as those containing pedagogical methods, were not included. For example, how to create a discussion board on Blackboard was included, but how to implement online discussion boards in teaching was excluded.

The committee was newly formed so organizational norms were not yet established, and the tenured chief was also relatively new to the university and still learning about institutional expectations. As such, the rules and organizational flow of the committee was in an early development stage; nonetheless activity was informed by institutional and social power structures. For instance, implicit expectations for staff to create the content and resolve issues with minimal disruption to the

chief who was busy with other duties. Power differentials between committee members on limited-term contracts and the tenured chief affected communication. Members were careful in their wording about conflicting views. Decisions that the chief made were final and accepted without question.

Outcome

Outcomes are grouped into two categories: object and subject related.

Object related

A positive object-related outcome is that the work of the activity provided practical support to the lecturers during the first stage of the pandemic. A negative outcome was that limitations on the content of the website to only include technical applications meant that once lecturers knew how to do those things, they did not need to use the resources and the value of the committee declined until it dissolved.

Subject related

Object-related outcomes informed the individual subject-related outcomes and can be grouped into three categories: developmental, emotional, and social.

Developmental

Committee members felt that their skills developed while engaging in the committee work. They learned from each other the different ways to teach and manage courses online. Moreover, the experience of interacting with the different institutional groups gave them insight into the different users and concerns related to faculty development of digital skills in the Japanese university context. Technical skills improved as members learned how to make the institutional website and edit videos and content. Finally conducting the research for this study informed self-reflection and transformative learning.

Emotional

Committee members reported both positive and negative emotional outcomes. Providing faculty support and obtaining appreciation from those who used the services was motivating and encouraging. Being trusted by the department to develop these resources was empowering and members were thrilled to be recognized for the skills they were passionate about that were separate from their language teaching duties. However, the limitations of the activity, derived from what could be shared officially, led to frustration about wanting to do more but being constrained. Additionally, members expressed disappointment when material with ideas on how to use the technology (e.g., ways to use discussion forums) was deleted from the site, as well as collective sadness that the committee was no longer recognized.

Social

Positive social outcomes included developing stronger professional relationships with the committee members and those we helped, recognition from other lecturers and the university Zenkari newsletter about our efforts (Zenkari 48, p. 5). Negative social outcomes were related to effects on our work-life balance and private lives. Troubleshooting concerns during the pandemic

while teachers were stressed created an urgency to respond to requests and LINE messages immediately. Many hours were spent creating the videos and content for the website during typically non working hours.

Contradictions

Members identified several contradictions between the elements. The most prominent contradiction existed in the subject–object–rule–community relationship. As a newly formed committee, the subjects and different groups in the community had different views of the expected object of the activity. Before the committee was officially formed, members were providing informal support on a variety of tools (e.g., FlipGrid, meetings discussing ways to use Zoom breakout rooms); hence, initially members viewed the object with long term potential to continuously support the faculty development of digital skills. However, during the activity, institutional regulations placed on content viewed as controversial for different community groups clarified the perceived object to be more of an English help desk for officially endorsed technology. Moreover, there was a tension between the different pedagogical approaches between the committee members and the chief who acted as a boundary broker between the different institutional groups. Committee members wanted to send out a survey to the lecturers who could identify their critical needs, but this idea was rejected. Finally, the removal of resources that were created in response to questions from lecturers caused some confusion about the audience. This contradiction was later resolved by members through deployment of different communication channels: informal support versus formal communication.

Another tension experienced by members was in the subject–tool–object relationship. Members found that the type of tool mediated their communication. Initially communication was over email, which then changed to a LINE group. The first LINE group contained all members including the chief. However, there was some discomfort about having private conversations (including jokes and face-threatening acts such as questions and concerns) as we realized that our activity was “exposed” to the chief, which in turn constrained our dialogue. This discourse would typically not be conducted over email; however, the informal nature of LINE induced familial conversation despite status differentials. Later the team leader created a sub-LINE group for all members but the chief to reduce this tension.

Discussion

Through applying the CHAT framework, the analysis above describes the sociocultural relationship between the DCC members and the various university communities with which they interacted; as shown above, the decisions that the subject (the DCC) made were constrained by the fluid nature of its object. As noted above, the atypical nature of ERT has created a paucity of studies devoted to describing how PDNs evolve in crisis situations. Whereas research on ERT defines such situations in terms of flexibility, our findings suggest that how flexible an ERT situation actually is depends on the point from which it is viewed. Figure 3 above makes explicit the relationship between the activity system of the (DCC) PDN and the larger PDN with which it attempted to influence the object.

As Figure 3 indicates, as PDNs are made up of members who are themselves also members of the broader institution, the tensions between the DCC and other PDNs become more explicit. The exact nature of this tension is subtle and difficult to describe: The DCC operated from the perspective of a peer-to-peer or bottom-up PDN; the COVID-19 pandemic was poorly understood and, in the

absence of immediately forthcoming information, the committee members felt empowered to take matters into their own hands. In contrast, the other academic units on campus—in particular the administrative units associated with the language center—appeared to be operating according to the logic of a regulated or top-down PDN. In this way, our findings suggest that the relative fluidity of the object, that is, the objectives that the DCC intended to achieve, was evaluated as something far more rigid in the activity systems of other PDNs. With this in mind, we will venture two important features of our analysis.

On the Use of Tools

To begin with, Fucoloro (2012) suggests that two major themes in the choice of social network for developing a PDN are “community” (or camaraderie) and “convenience”. As noted, the majority of communication within the committee was mediated via LINE, communication tended to be less formal than emails. The upside of this informal, asynchronous communication style was that it allowed for group decisions to be made rapidly by the committee, without the preamble and social niceties common in email chains. It also allowed previously discussed topics to be easily searched and viewed in their chronological context within the LINE app—something that is more difficult in typical email threads, which have a tendency to split into multiple conversations and become increasingly difficult to read (Sobotta, 2016).

Conversely, the use of LINE to mediate conversations in some ways negatively influenced the subjects’ relationship with the community. The more informal nature of the medium, in conjunction with the installation of the software on the subjects’ personal devices, meant that the line between work life and personal life became ill-defined. This, in the context of emergency remote work, which further reduced distinctions between private and the professional spheres (Sandoval-Reyes et al., 2021), subjects felt significant stress when interacting through this medium. As a result, as the committee evolved, the LINE group was used much less frequently, with some members turning off notifications for the group on their personal devices. This is consistent with Macià and García’s (2016, p. 300) findings that virtual communities suffer from a “gradual lack of engagement...which results in reduced user participation.” and lends further support to Lantz-Andersson and associates’ (2018) findings that these communities interfere with their members’ private lives, overwhelming members with an overabundance of information (Davis, 2015).

On Rules and Community

Relatedly, the unique constraints intrinsic to the tools that the DCC used figured into the larger dynamic of the community itself. Our findings differ from previous research (Lantz-Andersson et al., 2018; Macià & García, 2016) in that we do not classify the DCC as either an informal or formal network, but rather as a single PDN that transitioned from the first state to the second. CHAT is the ideal lens for analysing the process by which this occurred. Tensions experienced by the subjects can be explained by a mismatch of objects between the original team and the other institutional communities with which they were now interfacing. The DCC’s activity system did not have the historical cultural context of the larger institution. When it interacted with these new groups, their historical discourse and decisions (and subsequent implicit cultural rules) conflicted with the DCC’s. This conflict was resolved by submitting to the academic hierarchy. The DCC chief deferred to the cultural context of the institution, and thus, the DCC itself was changed. This interaction of activity

systems is not sufficiently explained by the form of CHAT discussed above; nonetheless (Cole & Engeström, 1993) the third generation of CHAT allows for the analysis of interacting systems.

The implicit rules of the activity system were mediated by the ERT context and the communities with which the DCC interacted. Initially, the emergency nature of the task and the ad hoc formation of the group meant that the implicit rules for knowledge gathering were loose. Typically, PDNs gather informal knowledge from members who in turn gained knowledge using the “interactive” model (Clarke & Hollingsworth, 2002; Macià & García, 2016). In this model, teachers’ professional development is facilitated by “external sources of information lead[ing] to new experiences in the classroom which... can lead to new insights” (Macià & García, 2016, p. 292). In the context of ERT, the subjects were unable to rely on their interactively produced knowledge. As none of them had extensive experiences with remote teaching, knowledge provided for the PDN was necessarily sought after specifically in order to fulfill the pressing need.

Wenger (2009) argues that knowledge sharing requires “relationships of trust” developed through “mutual engagement”. In online spaces, gaining trust without the benefits of face-to-face interactions is fraught with difficulties (Ridings et al., 2002; Young & Tseng, 2008). If this is the case, then perhaps this potential lack of trust, in combination with the lack of a more traditionally gathered informal knowledge base, led to the change in explicit rules about what the committee could share online on its website.

Implications

When preparing to develop a PDN, instructors need to be aware of the complexities of the activity system that they are engaging with. CHAT analysis may help them contemplate the sociocultural elements that will shape the endeavour. Instructors may wish to consider making a formal statement of the object of the PDN, to avoid any ambiguity or tensions thus derived. The choice of tools mediating communication between members of the PDN will require careful reflection. Ease and speed of use will need to be reconciled with a consideration of the divide between the members’ personal and professional lives. The historical cultural rules of the institution in which the PDN is built will need to be carefully considered. Any tension between the object of the PDN and the culture of the institution will need to be resolved, ideally before the PDN is formed. Finally, the cultivation of community trust should be considered as trust is one of the “key enablers of knowledge sharing in online communities” (Booth, 2012). For example, as Booth (2012) reported, smaller closed communities engender trust among members.

Limitations and Future Research

Conducting this study using CHAT and the PDN activity system as the “primary unit of analysis” (Figure 1) provided a lens that helped reveal the sociocultural issues that emerge during an organically forming intercultural PDN with the context of a crisis. However, a clear finding of this study is that professional development activities occur across different institutional systems that influence and shape each other. As such, the analysis of one activity system from the perspective of only the teachers whose objects were mediated by other systems that they were not aware of provides a limited view of the true complexity of forming a successful PDN within an intercultural context. Future research that examines other interacting systems in more detail, including, for example, the clients they serve, institutional faculty, and administrative support staff through the lens

of third or fourth generation activity theory (Engeström, 2001, 2009), would provide a more holistic view of the mediated activity.

Conclusion

With the proliferation of ICT tools and proficiencies amongst instructors since the ERT era, many new teachers now have the ability to establish their own PDNs. However, the development and maintenance of these networks can be fraught with complex issues and tensions. Using CHAT analysis to study the sociocultural elements of the formation of these networks and their maintenance will allow teachers to more effectively create their own PDNs and enjoy the many researched benefits of sharing knowledge with their peers. With sufficient preparation and careful planning, these PDNs could be successfully integrated into their larger institutional context to provide knowledge findings and share it institution wide.

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