ACTIVE CHAT HEADS: A NETNOGRAPHY OF PROFESSIONAL TERTIARY TEACHERS

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Abstract

The advancement of technology has brought professional learning into the online community of practice. However, the kind of culture in an online community of practice considered as informal has not been well explored. Hence, this paper described the culture of an informal community of practice of professional tertiary teachers in a private online group. Employing the traditional, personal participant observation techniques of anthropology to the study of culture manifesting through online communication, this study employed online ethnography or netnography. It involved observation and analysis of a small and intact group of five professional tertiary teachers. They share online communication of nine thousand two hundred seventy-two chat messages over a period in a private chat group. The results show that the interaction patterns in the online community are played by central characters and a hierarchy of shared activities constitute the culture of the online community. The members can take advantage of participating in their informal community of practice, and this time, in a more intentional manner. The activities are instructive and can be relevant in a work condition where time is constrained for face-to-face discussions.

Keywords

Netnography, Tertiary Teachers, Community of Practice

1. Introduction

Professional learning development in higher education traditionally occurs through formal and isolative conferences. The pervasive usage of social media today, however, has paved the means for improving teaching practice. This has transported professional learning development into the online world. It is the space where members use the screen to participate and collaborate. This evolving professional learning development has consequently created virtual worlds composed of educators with common goals.

One of the more radical social learning theories to emerge from sociocultural development theories was a theory of learning advanced by Lave and Wenger (1991). It is an analytic framework with which to understand learning in realistic social contexts, social practice learning theory presented an innovative concept called "community of practice." This term describes the basic social unit within which learning takes place. These units, however, are not only restricted to groups that meet on a personal basis. They are also adopted as a descriptive tool for learning in online groups (Hur, 2007; Seo & Han, 2013; Scuito, 2017).

Addressing the need for a venue to efficiently communicate, a community of practice consisted of educators who were founded during April 2017. It is a private and informal online group of young adult professional teachers based in a department that grants undergraduate teacher education degree. The online community currently serves multiple purposes. It essentially constitutes efficient exchange space among the members because of time constraints, which has always been a cited challenge in many higher education contexts (e.g. Lualhati, 2019).

The reviewed research body indicates a relatively explored online communities of practice designed and managed with the intentional purpose of learning within formal learning environments (e.g. Johnson, 2006; Bang, 2008; Mugliett, 2009; Linton, 2014; Moen, 2016; Scurr, 2017). On the other hand, online communities maintained for informal learning have been rarely explored (e.g. Gray, 2002; Myers; 2013). There are also qualitative papers in education focused on online methods of data collection (e.g. Samsonova, 2019). But even so, such studies did not look into the interaction patterns and shared resources which are central to emerging online culture studies known as netnography (Kozinets, 2010). Some scholarly works describing interaction patterns and shared resources (e.g. Lynch, 2002; Kale, 2007) have been conducted. However, these works did not focus their analysis on participation and collaboration of members which are essential in the culture study

of online communities of practice. Participation and collaboration are a key element to improve teacher professionalism (Bush & Grotjohann, 2018).

This study is motivated by the circumstances discussed in the background. It is significant to the theory, practice, and research of the online community of practice and netnography. It will provide theoretical knowledge in the form of descriptive features that distinguish informal communities of practice from other kinds of gatherings in online contexts. It will further offer practical insights for supporting and maintaining online communities in informal learning environments for teachers. This study will also contribute to the paucity of scholarly works that employ online ethnography or netnography as an emerging research design.

Thus, the general purpose of this paper is to describe the culture of an informal community of practice of professional tertiary teachers in a private online group. It particularly answered the following questions:

1. What interaction patterns are observed in the online exchanges of the members in their informal community of practice?
2. What range of activities, including resources, are shared by the members that shape their informal community of practice?

2. Method

This section presents the method used in this study. It discusses the research design, unit of analysis, data sources, data gathering procedure, and data analysis.

2.1 Research Design

This study used an ethnographic approach into an online community specifically known as virtual ethnography (Hine, 2000), online ethnography (Hart, 2017), or netnography (Kozinets, 2010). Generally, an ethnography is defined as a qualitative approach that focuses on a group that shares a culture. The ethnographic researchers immerse themselves in the daily lives of this group. The primary method of data collection is through participant observation. It suggests that the researchers become a member of the group as they participate in the daily activities of the group and observe the group extensively; they should not be "lurkers" (Marvin, 1995; Creswell, 2007).

Considering the characteristics of ethnography and netnography by extension, this research deemed it appropriate to adopt such a research design. The researcher in this netnography is a participant of the online site where the group members interact. He conducted online field works

such as collecting a variety of materials, conducting observations within the community, and interviewing members online.

2.2 Unit of Analysis

Literature indicates that the number of online communities included in a netnography ranges from multiple to a single community. Adopting a more focused approach, other netnographic studies limited their investigations to a single online community and narrow subject. For instance, Xun and Reynolds (2010) studied a single site that reviewed digital cameras.

The present netnography is delimited to a small but natural and intact group of five early adult professional tertiary teachers. They share online communication of nine thousand two hundred seventy-two chat messages for the past six months in a private chat group in an online social media. Patton (2002) reminded that an assumption that guides ethnographic inquiry is that any human group of people interacting together for some time will evolve a culture. As shown in Table 1, the participants were given code names to protect their identities. The demographic qualities are also presented.

Table 1: *Demographic Qualities of Participants*

Code Name	Sex	Age	Rank	Years in Service
Dee	F	26	Assistant Professor IV	4 years
Jose	M	32	Assistant Professor IV	4 years
Kata	F	29	Assistant Professor IV	3 years
Mikko	M	29	Assistant Professor IV	3 years
Ross	F	29	Lecturer	2 years

2.3 Data Sources

The data for this study came primarily from archives, observations, and interviews. These suggested sources of information in netnography were espoused by Kozinets (2010).

An archive used in this netnography presented itself in the form of textual communication already existent months before the researcher decided to conduct a study of the community. The researcher also wrote reflective notes from observations in the process of netnography to build a continuous record of transactions occurring in the group.

Furthermore, a series of interviews were conducted as a source of validation of the initial results. All these were conducted completely online to understand the broader culture of participation and collaboration in the informal online community of practice under study.

2.4 Data Gathering Procedure

First, the researcher sent a consent letter to the members of the online community of practice. They were formally asked for permission to conduct this study. The letter specifically stipulated that once they agree to participate, all their online conversations for a stated period will be downloaded and subjected to analysis. Upon approval, the researcher downloaded the record of online conversations using an application called Messages Saver.

The main stage of data collection commenced with a detailed content inspection of the archive. The researcher also maintained reflective notes while iteratively doing observations. As the simultaneous data extraction concluded, a series of online interviews with the members were conducted. All gathered pieces of information were then subjected to analysis and results were structured to answer the research questions.

2.5 Data Analysis

The main data analysis technique to answer the research questions of this study was content analysis. Content analysis refers to the method of exhaustive inspection of documents generated across a broad assembly of practices, taking a variety of forms from written word to the image (Jupp, 2006). This technique was employed in the online conversations of the members to reveal the interaction patterns and shared activities within the online community.

Moreover, descriptive statistics such as frequency count, weighted mean, and percentage rate were applied to support the qualitative data analysis. They were mainly used to account for the degree scores (Mongoe & Contractor, 2003) of the interactions and the frequency distribution of activities shared by the members.

3. Results and Discussion

This section presents the results and discussion of the paper. It is logically divided into two major parts based on the research questions: the interaction patterns and the activities and resources.

3.1 Interaction Patterns

First, this study sought to answer the question: What interaction patterns are observed in the online exchanges of the members in their informal community of practice?

To examine the interaction patterns observed in the online community, the main social network concept of degree centrality was incorporated in the qualitative content analysis. The centrality refers to the degree to which a social entity is a key entity within a network (Mongoe &

Contractor, 2003). The degree centrality score of a member in the current context of this study is the total number of times a member-directed his or her message content to other members and the total number of times a member received message content from other members. As shown in Table 2, analysis using descriptive statistics yielded degree centrality scores of each member of the online community.

Table 2: *The Degree Centrality Scores of Members Per Month*

Sender	Receiver	May	Jun	Jul	Aug	Sept	Oct	Total	Overall
Jose	Dee	1	3	0	5	4	3	16	
	Mikko	0	1	0	3	2	2	8	43
	Kata	0	1	0	3	3	3	10	
	Ross	0	2	0	4	1	2	9	
Dee	Jose	0	0	0	3	2	5	10	
	Mikko	2	0	0	5	4	4	15	42
	Kata	0	0	0	4	2	3	9	
	Ross	1	0	0	3	2	2	8	
Mikko	Jose	0	3	0	2	5	3	13	
	Dee	1	4	0	3	4	5	17	54
	Kata	0	3	0	2	4	4	13	
	Ross	0	3	0	3	3	2	11	
Kata	Jose	0	0	0	1	3	2	6	
	Dee	0	0	0	2	4	3	9	27
	Mikko	0	0	0	2	6	2	10	
	Ross	0	0	0	1	0	1	2	
Ross	Jose	1	1	1	2	0	2	7	
	Dee	2	1	1	1	1	2	8	31
	Mikko	2	1	1	1	0	3	8	
	Kata	1	2	1	1	0	3	8	

Based on the observed degree centrality scores, Mikko has the highest score in the online community in terms of the total number he directed message content to the other community members with 54 occurrences. Jose and Dee came in almost the same score, having directed message content to other community members with 43 and 42 occurrences respectively. Ross and Kata were observed to have posted message contents to the community members with 31 and 27 occurrences respectively. Further examining the degree centrality accounting for the highest number of message content received, Dee has the highest score. She received message content from Mikko with 17 occurrences, Jose with 16 occurrences, and Ross with 8 occurrences. Mikko came in close receiving message content from Dee with 16 occurrences, Kata with 10 occurrences, and Ross with

8 occurrences. Jose received high message content also from Mikko with 1occurrences, and Dee with occurrences. Kata and Ross fairly received message content from every member with at least occurrences.

Observing the group history, Mikko as the creator of the online community can enlighten his case of having the highest number in terms of directed message content. Reviewing the early messages, Mikko created the group chat as an efficient way to invite all the members in a professional activity. His initial message to the group stated: "Let us attend to this seminar-workshop… timely and interesting. We can replicate the same" (Apr. 23, 2017, 08:26 AM). Mikko further reasoned out that:

"I am on leave, so my geographic distance from the 'real' community needed me to create this virtual community to get connected to my colleagues efficiently. I have some luxury of time to interact with the members of the online group too" (Mikko).

Moreover, Dee notably received the highest frequency of message content from almost all the members. It can be validated from the observation notes that Dee appeared to have the greatest number of links related to personal and professional matters with the members that necessitated her to receive messages. For example, she always collaborated in the planning of activities in the courses she commonly handled with the other members. Ross once asked her: Can we do a Christmas festival together for our classes?" (Sept. 01, 2017, 03:33 PM). Dee expressed that:

"Most of the time, deep conversation on relevant topics would tick my core and enable me to reflect, relearn, and unlearn things. The online group is a good venue for collaboration and exchanging ideas with others which makes our tasks easier" (Dee).

On the other interesting note, although Ross obtained a minimal degree of centrality, she directed messages at consistent frequencies throughout the months observed. While the rest of the members have some zero message content in some months, Ross never had any. It can be noted from the observations that Ross posted a few message content, but which were directed to multiple members. For example, she directed a post openly to all the members when she has concerns such as "Teachers… maybe you can suggest a good topic for leadership activities" (Jul. 18, 2017, 12:40 AM). When interviewed about this, Ross replied:

"It is so nice to learn with not just your fellow workers but with friends. You have lots of room for improvement, for learning, for making mistakes, and for venting your dilemma" (Ross).

The case of a minimal degree of centrality is different from Kata who observably did not even direct message content during the earlier months but significantly increased message content during the middle of the observed period towards the end. This case can be treated as a situation of adjustment for interaction with colleagues online. Dee once mentioned her name: "How about [Kata]?" (Apr. 23, 2017, 08:48 PM) to hear her decision about a proposed trip but which Kata did not reply to. Kata explained that:

"I was not used to chatting with everybody during that time. Another factor is that I am an introvert. I think closeness, in reality, is different from closeness in virtual. I was not comfortable" (Kata).

Overall, the results revealed that Mikko and Dee played most central characters alternately in directing and receiving message content. On the other hand, Ross and Kata consistently served as the least central characters either in directing or receiving message content.

A study of Kale (2007) about communication patterns in a formal online community of practice. It described that the superiors played central characters in terms of directing message content and teachers were central characters in terms of receiving message content. Contrasting this result to the current study where all the members share almost equal status, there are identified most and least central characters. However, it should be noted that central characters are not dramatically defined. They did not come too far from other members in terms of centrality scores.

On the other perspective, Hur and Hara (2007) determined factors that may influence interaction patterns in the online community of practice. These factors are the support factors as "having the autonomy, having a sense of ownership, acknowledging values of participation, providing online and offline interaction, providing an easy way to use technology systems, helping novice teachers become confident educators, assisting in overcoming teacher isolation, and meeting teachers' individual needs" (pp. 254). They also conclude hindrance factors as "teachers' lack of confidence, a previous negative experience in online communities, lack of technological support, and discouraging teachers' active learning" (pp. 254).

3.2. Activities and Resources

This study also sought to answer the question: What range of activities, including resources, are shared by the members that shape their informal community of practice?

The episodes of activities, including resources, shared by the members in the online community were determined using descriptive statistics. Online ethnography researchers do not just

deal with words but also with images, files, presentations, and other digital artifacts (Kozinets, 2000). This study, though largely based on downloaded textual conversations, included pictures, links, and attachments as part of its content analysis of the shared activities and resources. As shown in Table 3, results revealed seven themes of shared activities, including resources, of the members in the online community. The sample codes are reflective of the total frequency of actual direct quotes.

Table 3: *The Shared Activities, Including Resources, of the Online Community*

Theme	Sample Codes	*f*	%
New knowledge in education	impart new knowledge they recently learned, react with surprise and appreciation about the new knowledge, ask questions to get clarified about the new knowledge, provide further explanations regarding the new knowledge	13	23.21
Collaborations in research and extension works	announce possible extension partners, update development of research materials, affirm support to the activities and projects through expressions of encouragement, plan steps to work in the extension and research projects	12	21.42
Discussions about curriculum matters	ask what topics may be included or excluded for a course handled in common by the members, post list of proposed themes or requirements, propose contents from the board examination to be covered in classroom instruction	10	17.86
Exchanges of materials and resources	ask for materials needed, post links of relevant articles, share reflective readings in teaching and learning, send file attachments, and display images of books and other materials	10	17.86
Personal and professional development	give information about possible conferences and seminars to attend, update members about ongoing activities they attend, share opinions and insights about what they learn from graduate school, express gratitude for pieces of advice.	5	8.93
Student management and discipline concerns	share experiences related to behavior management and discipline, say they adapted techniques of other members for classroom management purposes, and propose techniques on how to handle students and situations	3	5.36
Reflections about social issues	open discussions about a certain issue, share perspectives about it, ask questions about it, appreciate steps taken by people or institutions involved, express frustrations	3	5.36
Total		56	100

3.2.1 New knowledge in Education

The largest proportion and the first theme of the shared activities of the online community members is the new knowledge in education (23.21%). The community members are observably interested in imparting new knowledge they recently learned, reacting with surprise and appreciation about the new knowledge, asking questions to get clarified about the new knowledge, providing further explanations regarding the new knowledge, reflecting about previous practices in the school concerning the new knowledge, validating new knowledge with prior knowledge and experience, and suggesting how to apply the new knowledge in current practice.

Furthermore, it appeared that three of the longest conversations about new knowledge among the members were topics about curriculum and research. For example, Jose imparted a statement: "The outcome is the focus of the curriculum. Others fail because they just teach what interests them but not anchored on the outcomes" (Sept. 03, 2017, 09:44 AM). Mikko also shared his research knowledge: "Not only expert validation but construct validation using oblique rotation and a principal axis method for extraction to perform exploratory factor analysis" (Oct. 02, 2017, 02:06 AM). These are supported by the members in the interview, expressing that:

"An important point is learning on the latest trends and issues about particular topics such as research or topics related to the field of education which is achieved through sharing of ideas based on one's acquired theoretical knowledge…" (Kata).

"I take the sensible points from my colleagues to improve the teaching, for example, of research concepts... As research-oriented teachers, there is a rich diversity of research knowledge that I learn from them [other members]" (Mikko).

3.2.2 Collaborations in Research and Extension Work

The second theme that emerged as the most discussed resources and activities is the collaboration in research and extension works (21.42%). The members use the online community to announce possible extension partners, update the status of extension proposals, update development of research materials and activities, confirm participation in the activities, affirm support to the activities and projects through expressions of encouragement, and plan steps to work in the extension and research projects.

This result is not surprising since all the members were involved with each other in different research and extension projects. For instance, Jose was heading the extension program of the college and department. He proposed, for example, that: "Then, let's develop an action research

module to help teachers in the field" (Sept. 01, 2017, 07:19 PM). Dee and Kata were also conducting university-wide research. They used the online community to plan activities, share materials, and discuss matters such as: "We plan to request an extension of the duration of the tracer study" (Sept. 14, 2017, 11:37 AM). A member affirmed that:

"Because of our workload, we tend to maximize this online tool to exchange our ideas and thoughts on the new techniques that we can use in pursuing relevant and responsive [research and extension] programs in our respective responsibilities" (Jose).

3.2.3 Discussions about Curriculum Matters

The third theme that surfaced significantly for the members is the discussions about curriculum and instruction matters (17.86%). The community is abuzz with related activities such as asking what topics may be included or excluded for a course handled in common by the members, posting a list of proposed themes, activities, or requirements to ask for suggestions, throwing meant jokes to constructively criticize a course activity or topic other members think are inappropriate, proposing contents from the board examination to be covered in classroom instruction, and complimenting activities of others.

Mikko once suggested to Dee: "Please include in your class the tools such as Computer Based Instruction" (Aug. 06, 2017, 12:46 PM). When Jose was about to handle a graduate class, he also asked the suggestions of the members: "Please suggest activities suited to graduate students [then he provided a list of activities]" (Sept. 09, 2017, 11:03 AM). As the members reflected:

"I am enlightened, in one way or another, by our exchanges about research and assessment practices, classroom management and conflict resolution management, teaching and learning strategies among others" (Dee).

"Another is to do away with bad practices in teaching subjects that are capricious... I will need to consider the practicality, applicability, and appropriateness of the requirements for students. These statements are mainly based on my inferences from the conversations in the group chat" (Kata).

3.2.4 Exchanges of Materials and Resources

The fourth theme is the exchanges of materials and resources (17.86%). The online community understudy, just like the outside community with culture, also served as an avenue for the flow of objects. The members specifically ask for materials needed, post links of relevant

articles, share reflective readings in teaching and living, send file attachments, and display images of books and other materials.

One interesting image was shared by Dee to inspire the members to champion their extension program: "This is a very useful article to champion our extension [then she shared a screenshot of the title of the article]" (Aug. 21, 2017, 04:57 PM). Jose also shared a link on the closing of worst teacher education institutions: "We should have strict admission [then he shared the link of the news]" (Oct. 04, 2017) from which the members reflected. A member affirmed these exchanges of materials and resources in the interview, saying:

"I consider it [group chat] as a community where the exchange of 'goods' is efficiently done. I observed that when some members 'demand' something, others 'supply' it through an efficient approach by just attaching or linking something to the community. I realized there is an economy inside the community that is based on exchanges of needs in the form of materials" (Mikko).

3.2.5 Personal and Professional Development

The fifth theme that appeared is the personal and professional development (8.93%). The members give information about possible conferences and seminars to attend, update members about ongoing activities they attend, share opinions and insights about what they are learning from their graduate schools, and express gratitude for pieces of advice.

For example, Ross shared a significant professional development plan: "Final! I will take up early childhood education or special education" (May 11, 2017, 10:48 PM). Kata and Dee also communicated from time to time about their professional journey as graduate students: "I am excited to attend my graduate class this Saturday to learn about curriculum" (Aug. 26, 2017, 09:47 PM). Other members added that:

"[T]he online chat is our pipeline to share the new learnings we gained from our experiences. Through online chat, my colleague and I share recent updates that are beneficial to our work. For instance, we inform our peers about… our training and graduate school studies" (Jose).

"I also learned a lot of themes that somehow help me become a productive person. For example, I learned from my colleagues some tips about healthy living, investing for business, managing time, appropriate demeanor…" (Dee).

3.2.6 Student Management and Discipline Concerns

One of the least activities in the online community is student management and discipline (5.36%). Members share tips on how to handle particular sections or situations, share experiences and encounters related to behavior management and discipline, criticize student misbehaviors observed in the field, say they adapted techniques of other members for classroom management purposes, and propose techniques on how to handle students and situations.

It was further noted that the concerns regarding student management and discipline came from Ross. She specifically had long conversations with members regarding dealing with some students such as: "Guys, I have students who got very low marks" (May 28, 2017, 12:54 AM). Mikko and Jose were the most consistent members who assist Ross in these concerns, giving her pieces of simple advice such as: "If it is a student factor, it is just right not to pass them" (May 28, 2017, 08:29 AM). Learning from other members in the online group is evident in the responses of Ross:

"Gaining insights from our conversations in the [online] group, I do always say [in my classes] that *We are not creating intelligent monsters but intelligent teachers that know compassion, love, acceptance and a teacher that knows how to be fierce and loving at the same time*" (Ross).

3.2.7 Reflections on National Issues

A few activities in the online community also consisted of reflections on national issues and concerns (5.36%). The members open some discussions about a certain issue, share perspectives about it, ask questions about it, appreciate steps taken by people or institutions involved, as well as express frustrations. It is observed that these issues and concerns raised by the members range from education to generally social issues.

For instance, Jose, Dee, and Mikko discussed the release of the position paper of a higher education institution at the time the extrajudicial killing was at the height of social debate. Dee announced: "A private university just released a statement about the extrajudicial killing" (Aug. 21, 2017, 05:33 PM). Other members indicated suggestions, one of which was from Mikko: "A college position paper may also be initiated to discuss the educational perspective of the issue" (Aug. 21, 2017, 06:22 PM). The interview responses of some members probed that:

"[I]t is in our online conversations that I get updates about contemporary issues, news, and concerns across different disciplines like education, sociology, psychology, history…" (Dee).

"I learned some things in our [online] group about relationship, governance, and politics. I have learned that at some point, politics will exist instead of governance and in doing so, the relationship, may it be in professional or personal, will be greatly affected…" (Ross).

As a whole, the prevalent shared activities and resources that shape the culture of the online community were new knowledge in the discipline, collaborations in research and extension works, discussions about curriculum matters, and exchanges of materials and resources. Other activities and resources that also contributed were personal and professional development, student management and discipline concerns, and reflections about social issues.

These results are similar to past studies. Kulavuz-Onal (2013) portrayed the activities in an online community of teachers. These activities are sharing ideas and experiences, sharing links and information about artifacts, inviting to community events, discussing current events, and offering guidance. Furthermore, Lynch (2002) highlighted major concerns in another online community that revolved around particular activities and resources related to class size, team teaching, and play curriculum. Glazer and Hannafin (2008) added that reciprocal interactions may exhibit themselves in various forms such as telling stories, sharing ideas, solving problems, and others. It was found out also in lesson study and traditional communities of practice that teachers attain success relative to professional improvement, organizational support, organizational commitment, professional community, team collaboration (Dave & Takuya, 2019; Sharma, 2019). The related studies show a glimpse of the culture that is common to online communities of practice in the context of education.

Moreover, Scurr (2017) suggested that given the activities in a culture, there exist levels. There is a definite representation of meaningful activities in this study from the lower level to a higher level. Although the present informal community of practice exhibits such activities, it is too early to conclude if these activities will persist to become practices and culture over a longer period. Nevertheless, this paper also essentially addresses the gap in past studies which did not focus on the elements of participation and collaboration. These elements are essential in the culture study of online communities of practice.

4. Conclusion

This study initially focused on the interaction patterns occurring in the informal online community of practice. It uncovered that two members played the most central characters alternately in directing and receiving message content. On the other hand, two other members were

consistently the least central characters either in directing or receiving message content. Thus, the interaction patterns in the informal online community of practice are played by two most and two least central characters. It should be noted, however, that central characters were not considerably defined. They did not come too far from others in terms of centrality scores.

It was further revealed that seven themes emerged as describing the shared activities and resources that constitute the culture of the informal online community of practice. It includes new knowledge in education, collaborations in research and extension works, discussions about curriculum matters, and exchanges of materials and resources. Other contributory activities and resources included personal and professional development, student management and discipline concerns, and reflections about social issues. A considerable evolution time though is needed to jointly conclude them as a set of practices or culture of the community.

Given these conclusions, the members may participate in the higher-level activities more intentionally this time. The higher-level activities are instructive and can be suitable in a work environment constrained by time for face-to-face discussions. Considering further the spatial and temporal limitations of the study, online ethnography in other wider contexts may be conducted to compare how interaction patterns and shared activities develop into practices over a longer period. As quantitative data seemed evident in this study, the mixed method as a research design may also be considered in future replications to enhance the weaknesses of purely qualitative research designs.

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