CRITICAL ELEMENTS PERCEIVED BY ONLINE DOCTORAL STUDENTS THAT ENABLE FORMATION OF A COMMUNITY OF INQUIRY

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Abstract

The aim of this research was to investigate Professional Doctorate of Higher Education students' sense of membership to an online learning community. This programme attracts students from all over the world who interact in asynchronous virtual learning environment. Eight out of seventeen students in a cohort volunteered to participate in the in-depth unstructured interviews. Using the Community of Inquiry model we discovered that a majority of the students did not feel their cohort resemble an authentic online learning community. We found that teaching presence was predominantly focused upon cognitive presence as opposed to social presence. Based on students' responses, we identified six elements that enable online community formation.

Keywords: online community; social presence, teaching presence, online tutor, online motivation.

1 INTRODUCTION

The Professional Doctorate in Higher Education (EdD) is an online program offered by a European University in partnership with a consortium of International Universities. In the programme, students complete nine tutor facilitated ten-week modules where students participate in asynchronous discussions. The Doctoral Developmental Planning (DDP) Modules run parallel to the taught components. DDP mentors provide support and assists students in developing their academic and professional skills throughout the programme. Students progress into a 12-30 month thesis stage once they complete the taught component.

The researchers are four experienced online tutors who have been working in the programme across different modules for at least three years. The stimulus to conduct this study arose from listening to students as they expressed both positive and negative experiences in their collaboration and interactions with their peers.

The aim of the study was to explore if the EdD international students perceive their interactions and collaboration within the learning environment resembled an authentic online learning community of inquiry [1]. In this study, we defined an authentic online learning community as a group of online learners working collaboratively, that have a shared vision, and empowered by the learning environment [2] and where continuous discussion and collaboration can lead to higher-level learning [1]. In our research context, this community takes place through the use of asynchronous text-based Computer Mediated Communication (CMC) [3] with tools such as online forums and emails

2 THE ONLIN LEARNING COMMUNITY AND ITS SOCIAL ASPECT

The term online learning community (OLC) has been defined from different perspectives. For example, Tu and Corry [4] loosely define online learning community as engagement of students in online learning interactions of students as they engage in learning and activities. This definition implies that any group of students interacting in a learning environment can be a community. However, Ke and Hoadley [2] argued that a cohort becomes a community when students emotionally engage with their colleagues within the learning environment. This is a type of engagement where students have a sense of belonging and commitment to themselves as well as to the need of group member (e.g. McMillan & Chavis 1986 in [4]). Moreover, according to Palloff and Pratt [5] and Rheingold [6] a learning community needs to be designed and continuously nurtured in order to evolve online otherwise it may run the risk to become a static entity.

In this study, we leverage Garrison and Anderson's [1] definition of community of inquiry. Garrison and Anderson highlighted three main elements of community of inquiry (COI). These include the following:

1   Cognitive presence: this is mainly about discussions and learning of the content

2   Social presence: involves the emotional and social connection between students

3   Teaching presence: as the facilitator of both cognitive and social presence

Our research was also inspired by the work of Rovai [7] who built an instrument for measuring the sense of community as well as by the COI instrument devised by Garrison, Cleveland-Innes and Fung [8] in order to measure social presence, cognitive presence and teaching presence in the COI. Previous studies linked the benefits of online learning communities to students' satisfaction and consequently retention ([5], [9], [10], [11]). For example, Swan [12] found that there are correlations between students' social presence and their satisfaction in a program. In a related study, interviews with Nigerian online Master and doctoral programme in a UK Institution, Szilazyi [13] analysed cultural aspects on Nigerian students' retention in online courses and found that the students' sense of belonging to an online learning community with culturally-specific characteristics helped in motivating them as well as increasing their retention in the courses.

However, Drouin [14] in a study with undergraduate students reported that sense of community membership was not necessarily linked to issues of student retention in an online course, rather it had more to do with students' satisfaction. Drouin [14] argued that student-student interactions are more powerful in community building. Though there is a lot of literature on the importance of communities of inquiry in online learning environments, there is a dearth of research exploring if student cohort members view their interactions as that, which resembles a community of inquiry. Hence this study explores whether cohort members feel that their cohort evolves into an authentic online learning community of inquiry.

Dikkers, Whiteside and Lewis [15] proposed a Social Presence Model that is composed of four main elements namely: affective association, community cohesion, instructor involvement, interaction intensity and knowledge and experience sharing. Though Dikkers and Whiteside's [15] study analysed k-12 blended courses, the model could inform studies of social presence in Higher Education setting. While affective association is considered as the emotional connection students have with each other online, community cohesion is seen as a sense of community and of connections among students. Instructor involvement is considered as one of the key elements of the model since the teacher is considered as playing an active role in the community. Interaction intensity, knowledge and experience refer respectively to the level of interaction among participant and to the sharing of priori knowledge.

3   STUDY DESIGN AND METHODOLOGY

The approach chosen was a single evaluative case study design [16] to explore whether cohort members had a sense of community as they progressed in the program. The research was conducted in two phases. Phase one involved analysing a cohort of students' online interactions in completed modules. Phase two involved conducting in-depth interviews with cohort members about their sense of community in the program. The interview results are reported in this paper.

The second phase consisted in conducting an unstructured Skype interview with those participants (from Phase 1) willing to discuss in a deeper way about their experience as a group or community in the EdD programme. Eight students accepted the invitation to participate. Unstructured interviews were carried out and the questions were centred on major issues identified during phase 1 of the study. Unstructured interviews enabled the data to freely emerge from respondents' words with no pre-conceived view on specific themes [16]. This also helped us to identify new emerging themes that we did not expect from the discussion.

We used Garrison and Anderson's [1] explanation of the three tenants (cognitive, social, teacher presence) of communities of inquiry as a lens to conceptualize students' responses. In Phase one, we made interpretations about students' texts using the interpretivist paradigm ([16], [17]).

3.1 Methods

A total of thirteen out of seventeen EdD students gave their consent to participate in Phase 1 of the study. The students were from different countries including China, India, Ireland, Japan, Malaysia, Middle East, Tunisia, United States of America and the United Kingdom. Of the thirteen participants, six were men and seven women. In Phase 2, eight out of thirteen students volunteered to be interviewed. Participants were identified by pseudonyms to protect their identities. All the participants had completed the taught component of the EdD program and were in their thesis stage.

Access to the students and permission to conduct the research was gained from senior management. Ethical approval was gained from the University's research ethics committee.

3.2 The Interviews

The eight unstructured interviews took place at a mutually agreeable time and conducted over Skype™ by all of us. We ensured that there was privacy at both sides so as to ensure the privacy of the conversation. With the student's permission the interview was digitally recorded. The unstructured interviews lasted between 30 and 60 minutes. The interviews were transcribed verbatim and subjected to thematic analysis. Anonymity of the identities of participants was preserved with the use of pseudonyms when verbatim quotes were used.

The interviews were un-structured, conversational and in depth in nature [16] so there was no interview protocol planned in advance, however we used a set of topics and objectives to discuss with participants during the interview. The major topics to discuss through follow-up, confirmatory and probing questions were related to: social presence online, teaching presence, the perception of the community, cultural issues/barriers and the online interactions. These topics resulted as insights to explore further from Phase 1 of the study.

We analysed all the interview transcripts using a thematic analysis approach [18] where major themes and categories were detected from the transcripts of the discussion had with participants. The systematic approach used for analysing data and the commonalities on the type of outcomes gained from all interviews helped us in further supporting the reliability of our findings while triangulating them.

4 RESULTS AND DISCUSSION

The findings are presented by the main themes that emerged from the analysis. We wanted to know if student perceived their cohort as a community of inquiry and the factors they thought were important in building an online community of inquiry. From the thematic analysis of the interviews, six enablers to forming an online learning community emerged.

4.1 The Online Learning Community Enablers

Analysis of students' interview responses yielded six themes. In this study, we refer to the themes/categories as community formation enablers. These include: social and cognitive presence, sense of connectedness, degree of visibility in the discussion forum, motivation to complete the program, tutor role and the cultural sensitivity. Figure 1 summarizes the "Enablers of the online learning community" (EFOLC).

If we compare this model with the main Social Presence Model [19], we can see that Interaction Intensity and knowledge experience are instead identified in our model with Visibility in the discussion forum and students' motivations. In addition to this, Cultural Sensitivity has been added to our model, reflecting the international nature of our student cohort. However, a key role in both models is played by the tutor and by the sense of connectedness had by online participants. We need to clarify that our own is not a specifically social presence model, [19] as it was created with the intention of understanding what the key elements were in supporting the development of an online learning community online.

In the following sections we will discuss about our EFOLC model of enablers and then we will draw some final conclusions
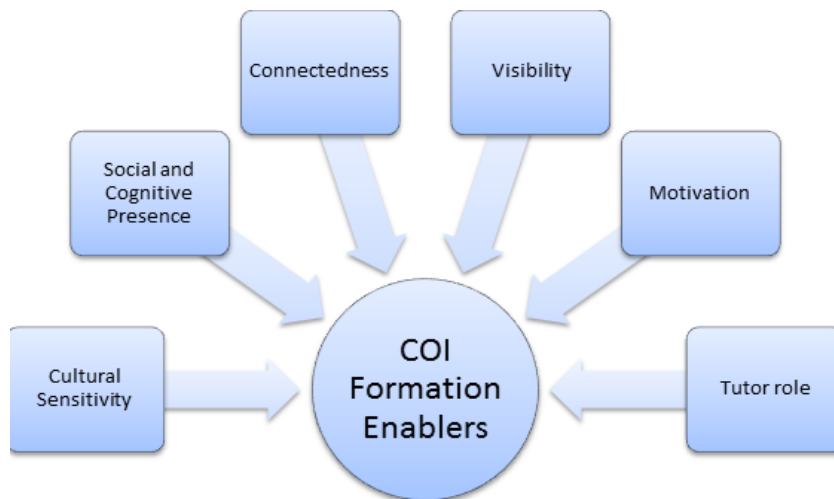
Figure 1 Enablers of the Online Learning Community (EFOLCS).

4.1.1 Enabler 1; Social and Cognitive Presence

From coding and analysing students' asynchronous texts in phase one of the study (reported in [20]), we found out that most of the interactions that occurred were of cognitive nature. We also found out that the teaching (tutor) presence was mainly of cognitive nature with elements of encouragement. It is possible that students were not expecting to have social conversations (i.e. social presence) as part of their interactions in the module [21]. In addition, it is likely that tutors generally perceive their role as that of facilitating the learning process to help students meet the stated cognitive module learning outcomes. Interview participants echoed the importance of both social and cognitive presence in the module. They argued that cognitive presence would keep them focused on the task and meet module objectives. Students who participated in the interviews pointed out that cognitive interactions were overtly present as compared to social interactions that were very limited. Almost all of the participants stated that they rarely, if ever, had contact outside the module during the programme. Some of them concentrated mainly on the course tasks, while others defined themselves as self-directed learners.

Although most participants acknowledged the importance of the social aspect for improving interaction online and so learning, it seemed that the cognitive aspect in the module was overarching the social one. There seemed to be few different attempts to get involved into social aspects and social interaction with others outside the module. Only two interview participants indicated that they had social interactions outside the class. Carson [22], Picciano [23] and Tu [4] report how social presence impacts students' positive perceptions of their learning and satisfaction

4.1.2 Enabler 2; Sense of Connectedness

The sense of connectedness is defined by the literature as cohesion, trust, and interdependence among students [7] since they feel that someone is there sharing with them even if they are separated geographically [24]. In addition Rovai [7] asserts that when students experience a feeling of connectedness with their peers and faculty members, they are more likely to feel a sense of belonging, trust, mutual interdependence and dedication to the community and that connectedness is influenced by the level of interaction taking place between students peer and instructors [25].

We can assume that in the EdD cohort although there was a lack of social presence, the sense of connectedness was a bit more visible than the former and it was as desirable as social presence. It is also important to note that these community formation enablers are not exclusive, as they overlap in many ways. Students can develop different kinds of connections.

Fred for example, one of the research participant, explained how he usually connected more with the content than with people since sometimes learning was very "impersonal". He stated he did not connect with anyone outside of the modules for the entire programme. However, during the interview he provided an interesting idea on the importance of the initial personal introduction of each participant and how providing video clips on this could help in enhancing the relationship too. Another important insight from Fred's comment points to connections to his peers' external context outside the learning environment. This implies that some students in the EdD program, view social presence as an activity to be done outside the learning environment yet communities of inquiry need to be socially present within the learning environment [1].

Eric indicated that he had made personal connections with some of his peers in his cohort. His comments about his experiences indicate the importance of sense of connectedness that provided him with support, motivation and encouragement to complete the program. Based on comments from Eric and Fred, it is evident that not all online learners value peer support as an important part of their academic success and journey. At this point, it is interesting to note that both participants were male so this may also raise a gender perspective to developing social-based conversations with peers.

Hence, in the overall programme it seems like this cohort of students connected with each other in more formal and academic ways in order to accomplish the course tasks, but not on a personal or social level.

4.1.3   Enabler 3; Visibility in Text-based Asynchronous Online Discussions

From the Audit phase of the study, we found that some students' discussion contributions were more 'visible' than others. Here visibility refers to texts from students that are responded or not responded to by classmates. We followed that observation within interviews in order to gather students' explanation of why other students' posts were more visible than others.

Interviews participants' generally agreed that not having their post responded to could produce a negative feeling and in some cases causing demotivation in students whose posts were ignored (Fred, Toyah, Sarah). Fred reported:

> "Once or twice you find that when you do not get responses to a particular post you made, you also become demotivated in responding to others...what I also found as a trend was that the first person who posts tends to get the most responses from others" (Fred)

What Fred said was consistent with our audit findings that discussions were centred around certain responses [20]. However, not all students were concerned about being invisible in discussions. For example, Michel indicated that at the beginning of the program he was concerned when peers did not respond to his post but this feeling decreased module after module. He got used to not being responded to and found ways of rationalizing why some posts were responded to and not others.

Eric indicated that he did not care much about not being responded to by peers since most of the time the tutor provided him with the support he needed and he was of the view that sometimes people might not have time to answer to his posts.

While Simon stated that he has not experienced his posts being ignored in the discussion board, some other participants declared that the lack of responses to their posts could have been attributed to the lack of interest of others to the topic they discussed or to their too aggressive language (Susan). Susan observed that some tutors cared for those who were not responded to: "I think like for instance some tutors give more care in acting to make sure that they respond to everyone more or less in a week without leaving anyone out" (Susan). In addition, some students seemed to place more value on the tutor response rather than their peers.

In summary having one's post responded to was a key aspect for most of the students since not being responded to seemed to negatively impact upon their motivation. Additionally, tutor's presence was important for supporting those students who were on the periphery of the discussion because of being more of an interlocutor than responder.

4.1.4   Enabler 4; Cultural barriers vs Cultural sensitivity

Cultural barriers were another important component impacting the OLC formation and several participants referred to them (Toyah, Sarah, Michael and Susan) although some others (Simon and Eric) did not think that there were cultural barriers since cultural differences were an enriching aspect of the programme. Those who reported the absence of cultural barriers supported the idea that it depended on how each student was writing in the discussion board, impacted on how each individual was perceived and the idea that the Internet enhance the overcoming of these barriers. This view is supported mainly by Mary who reported how this was for her mainly a matter of language barriers rather than of cultural barriers and trying to make an effort to interact with everyone would have helped in remove some of these barriers.

On the other hand, participants who perceived cultural barriers stressed the importance of knowing and getting in contact with the other peers' cultures in order to fully understand them, their contributions and the problems they may be facing into the group.

In addition, Susan reported how feeling part of a minority created both cultural and language barriers in the discussion. Feeling a minority in the group impacted upon the way students felt when not being responded to or whether their post would be understood by others. Authors like Lewis, McVay-Dyche and Chen [26] reported how language barriers were clearly associated with the asynchronous discussion board text use, mainly by participants coming from Asian countries and whose first language was not English. Michael supported the idea of cultural barriers as well, although he reported how this aspect need to matter to the tutor mainly who needed to be "culturally sensitive" to different students' cultures. The term "cultural sensitivity" can be considered as a key here as a skill not only required to peers in order to understand each other's but also to tutors in order to better understand and support their students.

Hence, we can state that the presence of cultural barriers was reported mainly by people coming from countries with a particular cultural tradition or from countries experiencing particular political or economic situations. These enhanced the students' feeling of isolation in the community and so the absence of the community itself. Even the written communication can become sometimes a barrier when learning online and distinct sub-groups between English mother tongue people and not mother tongue people can create further barriers and differences. On the other hand, cultural differences can impact on language also becoming a barrier. However the idea of cultural sensitivity as suggested by Michael can be considered as a useful way to face these barriers both from peers and tutor's perspectives while having the opportunity to know a bit more about each other's culture and context. In addition to this, supporting intra-groups communications may help enhancing the sense of community online. Hence enhancing cultural sensitivity within groups and between peers and the tutor can help in overcoming those barriers that may prevent the formation of the online learning community

4.1.5 Enabler 5. Motivation to complete the programme

Despite participants during this taught part of the EdD Programme, faced difficulties ranging from time management, personal and professional problems, online communication issues, adapting themselves on the use of technology and so on, nearly all the eight interviewed students had completed the taught component of the EdD. programme. During the interviews we were interested to explore further if and how motivation was connected with the presence of the online community and if not, what kind of factors sustained people's motivations towards the lengthy part-time nature of the EdD journey. From students' answers we highlighted three major reasons in supporting students' motivations that could are summarised in Table 1.

Table 1. Students Self- Reported Motivating Factors.

Motivating Factor	Example of student's response
Career	"… getting a promotion" (Susan)
	"… getting a better job" (Sarah)
Tutor's support	"Perhaps the teacher's interaction does not impact on my learning but it can impact on my motivation so it does have a direct effect and I found that some tutors were not really engaging enough and who may be did not want to connect, made me less motivated" (Fred)
	"Yes, I felt motivated more by the teacher than some of my colleagues... teacher encouraged us...." (Michael)
Peers and Family support	"Having someone who supported me, although I had to fight with the local problems" (Sarah)
	"In my 7th module I wanted to let go and withdraw and a friend told me - you spend money and effort and you are left with only 2 modules yet you want to withdraw- my DDP tutor helped me stay on (Michael)
	"… I made friends who encouraged me and we care about each other. Students often communicate outside the classroom forum through Skype and I still do that now with my friends I met in the program. We communicate and talk about our thesis and share literature.... encouraging each other to help in supporting individual motivations for completing the module (also outside the classroom)" (Michael)
	I would say yes it's important to be valued, to be honest (pause) the levels of attrition also surprised me. But I could imagine if one does not feel connected they might not be motivated to complete the program. One would need to be supported by peers and feel like you are with them... Having colleagues responding to my posts impact motivation (Mary)

It is interesting to note from Table 1 that students' motivations were composed of professional aspects mainly focused on improving their career and getting a better job, and by personal and relational issues too. The support played by the tutor, peers and others (for example family member or/and friends) was important and as it was mentioned by most participants. The answer related to peers' support was in some ways unexpected since both the Audit phase and the interview phase revealed that the type of communication had in the online course among peers was mainly of cognitive and academic nature and not of social/personal one. However, this theme revealed that students needed to be personally supported by others in order to enhance their motivation and this happened most of the time "outside the programme". Another interesting aspect emerging from the table is the key role played by the online tutor since his/her engagement and interaction supported participants and their motivations. The role played by the tutor is explored further in the next section.

4.1.6   Enabler 6. The precious role played by the tutor online

The role of the tutor was valued by several of the participants interviewed. Students reported the tutor's role as a key one in enhancing the communication and the interaction online and in supporting students' motivations too. The tutor helped students in communicating and getting engaged in the discussion. Some studies in the field reported the key role played by the tutor in developing the online learning community ([27], [15]) La Barbera [27] in particular reported how personalised, regular private email and feedback to assignments can further help the development of the sense of connectedness between students and tutor and so the improvement in the sense of community. Shea, Swan, Li and Picket [3] also added commented on how the course related tutor's post directed to facilitate discourse, acknowledging students contributions, prompting discussion, asking questions, summarizing discussion and providing different perspectives, all enhanced the perceived sense of community

The key words used from the interview transcripts of their interviews were mainly "role", "discussion", "others", "helped" and key" clearly emerged around the word "tutor".

It is important to notice however that three major key terms emerged when discussing about the tutor in the programme. Most participants mentioned words like "Encouragement or Encouraging", "Support/Supportive", "Connected" in respect of the key role played by the tutor. "The role of the tutor is that of encouraging the knowledge and the discussion" (Fred)

4.2   Was there an evolution of cohort into online learning community?

Nearly all the participants interviewed indicated that their cohort did not resemble a learning community in the truest sense of the term.

It is important however to note that although at the beginning it was like dealing with strangers (Sarah) they became more familiar with each other towards the end of the programme.

Moreover, the definition participants gave about learning community is best illuminated by Simon since he mentioned a clear difference between a team and a community and he stressed the importance of connections and the presence of friends: "The difference between a team and a community....a community is where you really engage with everyone and you make friends, connections and then you are connected with them for years, that did not happen for me" (Simon).

This argument implies the challenges of supporting a cohort to evolve into a learning community-however, there is a possibility of having "ties" within a cohort.

Furthermore, it was noted by some participants that online interactions helped in forming the community (Mary and Michael). Mary added that connections developed better in small online teams than in bigger ones although socialisation was a key aspect missed in the community.

In sum, although this cohort of students in the EdD programme did not form a real learning community as defined by Garrison and Anderson [1] it seems there is sufficient evidence to suggest there is an overall need of a social presence, of connection and of feeling part of "something" while learning online. Words like "closeness, encouragement, friends, small teams" were repeatedly discussed by participants on several different occasions, together with the need and of the importance of socializing online.

5   CONCLUSIONS

This study focused on investigating if and how a real Community of Inquiry (COI) established in this cohort of the EdD programme after three years of working together. Clearly if we define the COI as a place where students take responsibility of their learning and challenge each other's ideas in respectful ways, composed by cognitive, teaching and social presence [1] it was found that not all students were challenging each others' contributions or indeed fostered social presence within the online community.

While "cognitive presence" as a higher order learning intent, reflection and discussion [1] was a central part of the community in this cohort, if we consider "social presence" as emotional and social connection with other students [1]. Furthermore, if we consider that social presence helps online students to overcome their feelings of isolation [15] from this study we cannot say that this was overtly present among students. Although the study by Dawson [28] stated that highly level of interaction among peers was positively associated with a strong sense of community, we can only postulate at this stage that the type and kind of communication taking place in all the three modules of the EdD online classes did not create a "real online learning community" as defined by Garrison and Anderson [1]. Gutierrez-santiuste [29] in a similar study, where online students' posts were analysed according with their nature (Social or cognitive) found that the initial and final phase of the online course was related to social presence and that students were satisfied with the online communication. However, in the online course they analysed a strong use of the synchronous communication tool (i.e. chat) when social posts were detected and the central part of the course taking place in asynchronous written form, was instead characterised by a high level of cognitive posts both from tutor and participants' side. This aspect is in support of our research findings and consequently may suggest the need for using the synchronous discussion tool within the EdD programme in order to enhance the sense of community and connectedness of our students. However, this needs to be balanced with the time available for part-time students to engage in their learning.

Students and tutors tended to exchange more cognitive posts, rather than social ones and if the latter took place they were shared only privately outside of the module. The presence of the tutor was cognitively supportive towards students and also towards those who were more "invisible" in that their posts were not responded to by colleagues in the class, although not all the tutors played a strong and key role in encouraging the discussion when necessary. Indeed the interviews confirmed that only few students had additional interactions with peers outside the module (i.e. Skype) and cultivated friendship and closed relationship with peers after the end of the module. Last but not least, students who tended to post later in the week seemed rather excluded in the discussion from their peers and the tutor usually engaged with them from a cognitive perspective.

From this small study, we found that social presence seemed to be a missing element in the programme although students considered it as a key element while learning online and for helping each other together with a sense of connectedness. Studies on the same topic reported how not only sense of connectedness was strongly related with the sense of community but also with reports of how sense of connectedness and of community was strongly related with the motivation in continuing working online with others ([26], [30]). Kim et al. [30] reported how social presence should not be a taken for a granted assumption for face-to-face classes, since in their research social aspects were absent more in traditional face-to-face classes than in online ones. Hence connectedness and motivation become very important enablers in our research and as such it likely be the subject of further investigation in the future. We also found that the role of the tutor was key and impacted upon the online interaction patterns among students. Although our study was very much focused on cognitive aspects of the course, students found tutor's role to be key in motivating encouraging, supporting and connecting. Hence more investigations are needed to investigate how the tutor can enhance the presence of the online community while interacting with peers in a more social way, since little research have been done on this topic to date [27] Finally yet importantly, our findings re-call how a cultural sensitivity played both by the tutor and peers acted as another important enabler for the formation of the online community.

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